

Actions Speak Louder than Plans

PHASE 1 FINAL REPORT

TANGA COASTAL ZONE CONSERVATION AND DEVELOPMENT PROGRAMME

An Innovative Partnership of

The Office of Tanga Regional Administrative Secretary

Pangani District Council

Muheza District Council

Tanga Municipal Council

IUCN - The World Conservation Union Eastern Africa Regional Office

Irish Aid

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The views expressed in this report represent those of Programme Team members and not those of any of the partners - Governments of Tanzania, Irish Aid or IUCN - the World Conservation Union.

EXECUTIVE SUMMARY

The Tanga Coastal Zone Conservation and Development Programme is an innovative partnership between the Office of the Tanga Regional Administrative Secretary, Muheza District Council, Pangani District Council, Tanga Municipal Council, Irish Aid and IUCN-the World Conservation Union. Its goal is:

To safeguard the resources of the Tanga Region coastal environment for the benefit of present and future generations of residents, through a series of integrated activities aimed at protection, sustainable use and management of coastal zone resources.

Its two objectives were to strengthen capacity of local institutions to undertake integrated coastal management, and to work with local communities to implement effective management of coral reefs, mangroves, coastal forests and wildlife.

The Programme took a collaborative approach between government agencies and local resource users from the start, with the use of participatory resource assessments. These were done in the coral reef survey, coastal forest survey, and socio-economic survey. The surveys identified issues and possible actions to deal with the issues. Then, a participatory process of analysis of issues, action planning, implementing, monitoring and reviewing took place. This was initiated at the village level, but with support and facilitation by government staff.

A set of specific results and activities were agreed through wide stakeholder participation. After three years of operation, the Programme had successfully completed most of its planned activities. These activities have led to some real changes, both in attitudes and behaviour, on the part of both villagers and government officers.

Specifically, the Programme has been able to successfully introduce a participatory, bottom up, community-based and community-led process for establishing coastal resource management. This was done through the use of community animation and participatory planning. Many government staff now have a good appreciation of the issues and practice of coastal management, as well as participatory approaches to decision-making. However, the three district technical teams and pilot villages showed different levels of achievement.

The process taken can be described in three main stages:

- *Initial training of government staff and identification of priority issues through rapid appraisal surveys.* Regional and district extension staff were reorientated through training in participatory assessments, facilitation skills and coastal culture. They also received training in rapid resource appraisal techniques. Socio-economic, coral reef and fisheries, and coastal forest resource assessments were done in a selection of villages and sites. These surveys were undertaken in a collaborative, participatory way with village resource users. A large regional workshop, with representatives of the major stakeholders prioritised the issues which the Programme would address. Each district then selected one pilot village to test out actions to deal with the priority issues.

- *Detailed investigation of resource use and potential management structures.* Government staff and resource users interactively analysed the causes, impacts of and possible solutions to the issues, and gained a better understanding of the resource use and users. This was done with as many different interest groups as possible so that a broad representation of village interests was ensured. More detailed investigations of traditional management systems was also done. The villagers then decided to form committees among themselves to oversee the actions they were prepared to take about their issues. These committees were facilitated by government extension workers, and received technical support from other staff.
- *Developing and implementing action plans or management agreements.* Village committee members received training in 'micro-planning' - how to formulate action plans with clear achievable objectives, indicators and actions to achieve them. They, along with government technical staff if needed, proposed action plans, or in four cases, management agreements. These plans set out an overall management objective, options for actions, indicators, responsibilities and required inputs. In the case of management agreements, which will become formal legal arrangements, they also include authority, controls and penalties. The proposed plans are acted on by the committee with other participants. In the case of the management agreements they go through a process of receiving formal approval from village, district and central government authorities. Both the plans and agreements are regularly monitored and reviewed every six months.

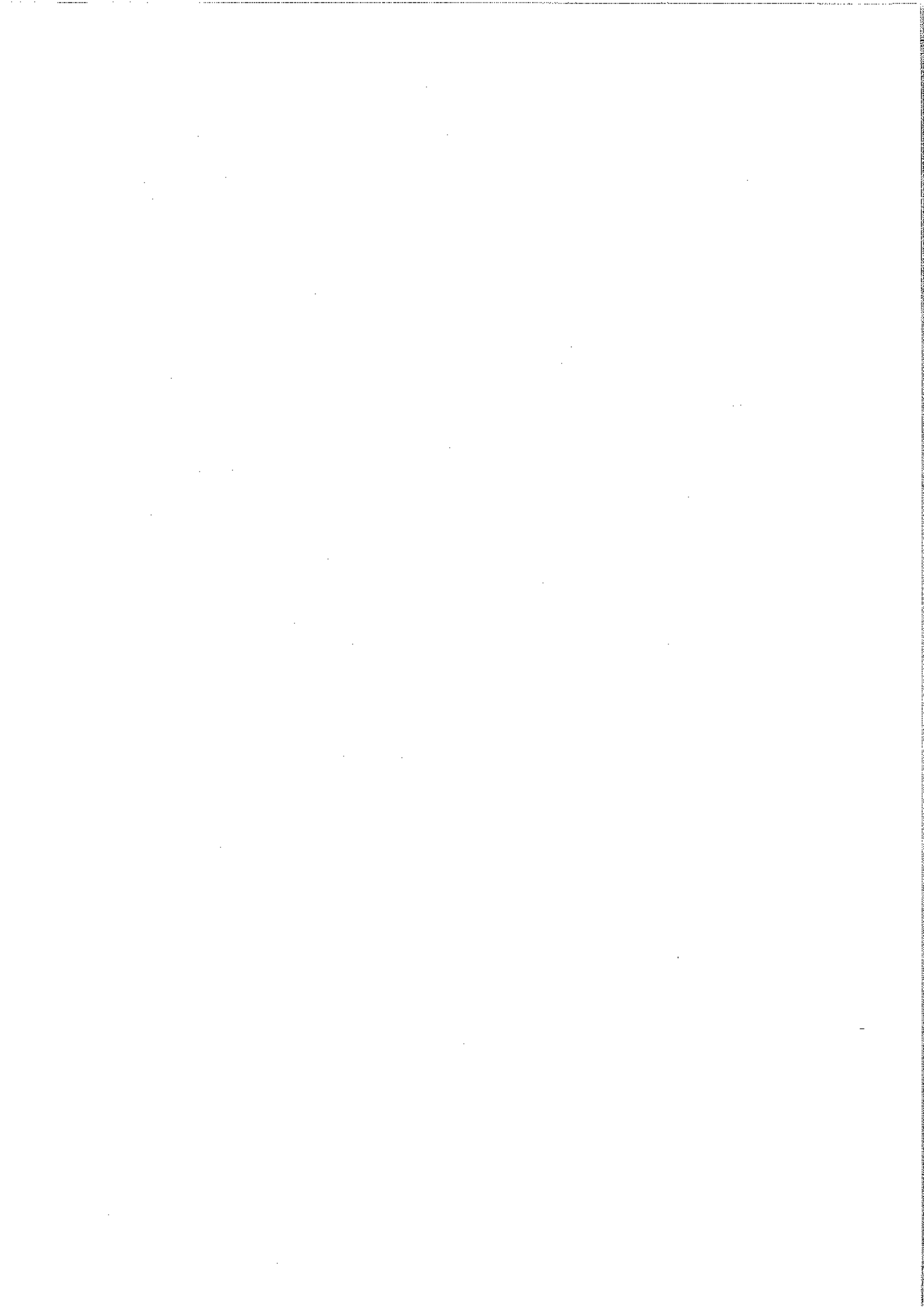
A number of important lessons have been learned in developing the above process. These are listed in detail in the report, and can be summarised as below:

- *Start small, with only a few priority issues that stakeholders consider most important.* Learn to be effective before trying to deal with every important issue, or all aspects of a single issue. Only three pilot villages were selected, one for each coastal district, so that all districts had a stake in the outcome and would receive the benefit of experience. In each pilot village, only two issues were selected for action. These issues were directly selected by the villagers themselves.
- *Work to achieve effective partnerships between resource users and different levels of government.* They all have important roles to play; try to find the most effective roles for each. For example, routine patrols and inspections of gear can be effectively carried out by villagers, when most resource users come from that village only. Government officials may be needed when more than just a few resource users come from outside that village.
- *Start with listening; who and where are the stakeholders (defined as those who are causing the problem, affected by it, or part of the solution), what are they doing, what do they want to achieve.* This is fundamental to building effective partnerships.
- *Use participatory approaches throughout, including resource assessments, issue identification, priority actions, decision-making.* Participatory approaches between government and communities are an effective way of listening and building the partnerships discussed above. In this way, knowledge from resource users and

government managers is used to help identify issues and possible feasible actions.

- *Verify conclusions reached through participatory appraisals by feedback to resource users and independent observation and measurement.* Both approaches are needed at the same time.
- *Use transparent processes and decision-making throughout and at every level of programme activities, including routine administration as well as policy.* This approach is fundamental to improving government and community institutions.
- *Take an action-learning approach, test to see if proposed actions will work before turning them into policy or strategies.* New ways of dealing with the issues are needed, since existing methods are obviously not working.
- *Monitor all actions to test if they are having the desired outcome, or unexpected outcomes on both the environment and people's well-being.* This is an important tenet of action-learning. If not sure of the best solutions, test them. Regular monitoring may show up mistakes before too much time and effort is spent on pursuing them.
- *Assume a pyramid of actions, whereby most actions can be taken by local people without assistance from government or outside experts or donors.* There are fewer actions which require assistance, and fewer still which need to be done by outside agents. This approach will improve empowerment and local institutions. It assumes that financial resources for coastal resources from local and central government will be limited in the foreseeable future - a stark reality!
- *Deal with both the environment and people's well-being, but especially those aspects of people's well-being affected by the state of environment and its resources.* This is an important policy imperative of central government and donors. It addresses the fundamental motivation for people's use of coastal resources.
- *Strengthen capacity at all government levels and at village level.* Working at only one or the other will not give satisfactory results. Government levels include from central government to extension staff in the field.

The report also sets out strategies and guidelines for applying these lessons to the next phase of the Programme.



TANGA COASTAL ZONE CONSERVATION and DEVELOPMENT PROGRAMME

END of PHASE 1 REPORT

Contents

1.	Purpose of Report	1
2.	Background to Programme	1
3.	Programme's Goal, Objectives and Intended Results	3
4.	Inputs and Budget Allocations	6
5.	Summary of Progress and Evaluation Findings.....	8
6.	Lessons Learned from Phase 1	
6.1	Overview of action planning and collaborative process	14
6.2	Proposals developed for regional and district coordinating agencies	16
6.3	Established forum to promote participation of all key stakeholders	18
6.4	Regional, district, village government running resource management activities	18
6.5	Streamlined prosecution system	24
6.6	Pilot villages empowered to control destructive and illegal practices	25
6.7	District governments actively support collaborative management with village government	27
6.8	Community development fund stimulating more sustainable use of resources	28
6.9	Submissions made to national authorities for policies and legislation to support regional programme activities	28
6.10	Phase 2 implementation plan and integrated strategies for improved coastal management	29
6.11	Participatory appraisals to establish monitoring baselines of coastal resources	30
6.12	Working examples of coral reef management established	39
6.13	Working example of management of mangroves established	42
6.14	Working examples of management of coastal forests and wildlife established	46
6.15	Working examples of new coastal resource uses for economic diversity ..	48
6.16	Working example of beach pollution control in place	50
6.17	Working example of coastal erosion control in place	51
7.	Phase 2 Recommended Results and Indicators	52

8	Recommended Strategies and Guidelines for Phase 2	
8.1	District coordination and implementation	54
8.2	Regional technical support	56
8.3	Professional standards	57
8.4	Effective enforcement of environmental regulations	58
8.5	Community empowerment for collaborative management	60
8.6	Gender considerations	64
8.7	Monitoring and evaluation	66
8.8	Sustainable fisheries practices	68
8.9	Improved and sustainable agriculture	71
8.10	Forest/mangrove conservation and sustainable use	73
9.	References and Programme Reports	75
10.	Appendices	A1

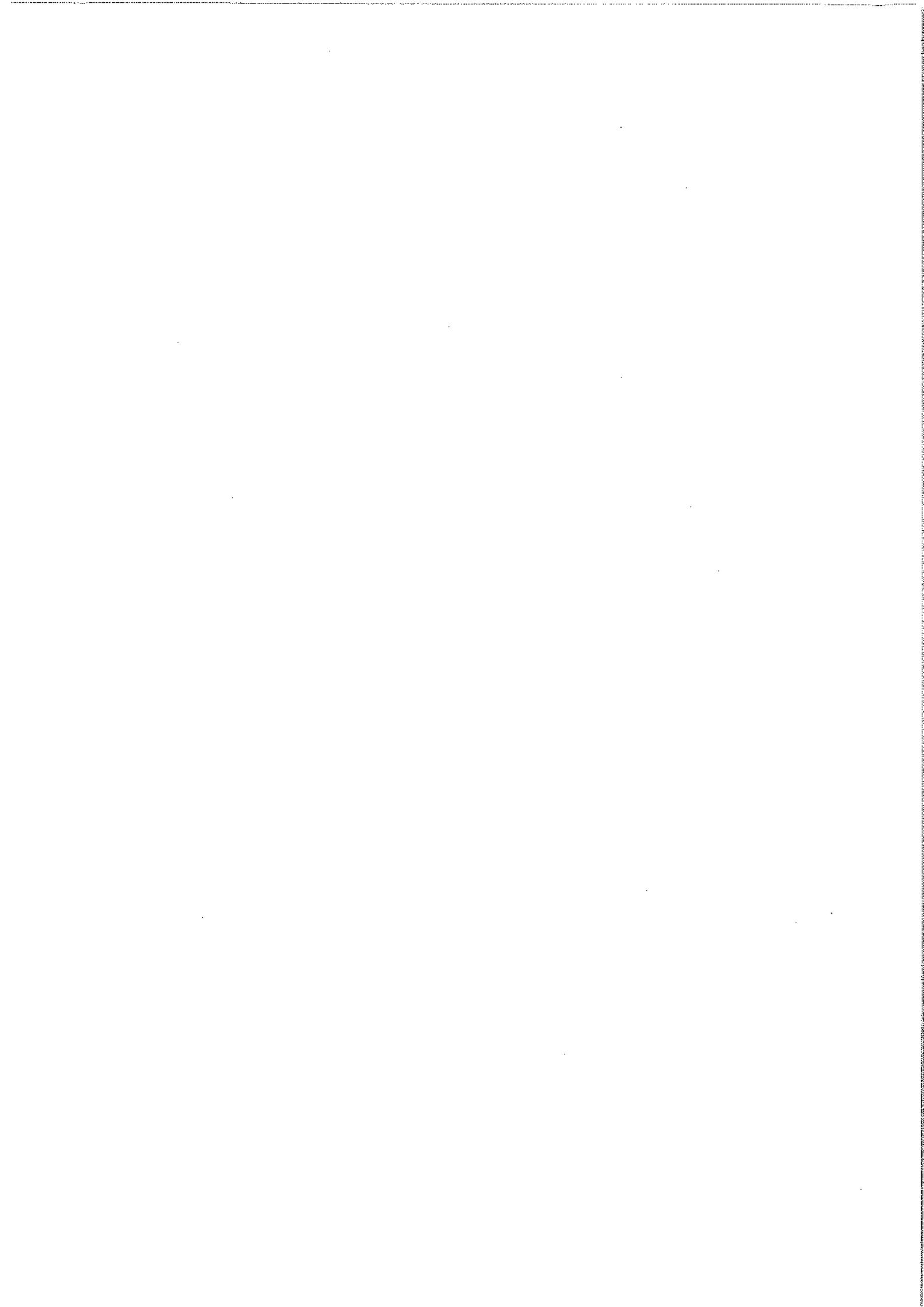
List of Tables

1.	Results from the Programme's Phase 1	5
2.	Budget Expenditure for Phase 1	6
3.	Results, Outputs, and Outcomes from Phase 1	8
4.	The Major Stakeholders in Tanga Region	19
5.	Training Needs Assessment for Government Staff and Villagers	20
6.	Number of Dynamite Blasts per Month in three Pilot Villages	26
7.	Summary of Key Elements from Case Studies of Coastal Forests	33
8.	Summary of Socio-Economic Indicators and Changes from 1995 to 1997.....	35
9.	Resource Assessment of Kipumbwi / Sange Mangroves	45
10.	Matrix Ranking for Women's Plantation Site	47

List of Figures

Following Page

1.	Map of Tanga Region	2
2.	Phase 1 Expenditure	6
3.	Reefs of Tanga Region	32
4.	Status of coral reefs in Tanga Region	32
5.	Diversity of the reefs of Tanga Region	32
6.	Resource Use Areas of the Kipumbwi / Sange Mangroves	44



1. Purpose of Report

This report is a concise summary of phase 1 of the Tanga Coastal Zone Conservation and Development Programme. It describes the programme which is being undertaken by a partnership of Tanzania government offices - at central, region and district level - Irish Aid and IUCN-the World Conservation Union. It summarises the Programme's structure and the actions that have been taken to improve the management of Tanga Region's coastal resources, and to thereby improve the well-being of the coastal communities who depend on those resources.

Using the lessons from phase 1, this report summarises recommended strategies to be used in phase 2. Detailed guidelines for implementing these strategies are provided. Their overall purpose is to set out the basic actions to achieve effective cooperation between village resource users and local government to achieve collaborative management of coastal resources.

The main sections of the report provide:

- information on the coastal issues and the structure of the Programme;
- summary of progress and the evaluation of phase 1;
- the results and lessons learned;
- phase 2 recommended results and indicators;
- strategies and guidelines to achieve those results.

2. Background to Programme

2.1 Tanga Region's Environmental Issues

A participatory rural appraisal conducted by the Programme (Gorman 1995) found that the stakeholders of Tanga's coastal zone are predominantly the residents of about 90 coastal villages. Artisanal fishing is by far the most important economic activity for these people. Agriculture and petty trade are the second and third most important occupations on the coast, while a significant number of people rely on other natural resources for their livelihoods, e.g. boat building, house building, salt boiling, lime burning, charcoal making, mangrove pole cutting. The commercial stakeholders include trawlers, traders and exporters of fish and other marine products, saw millers and traders of timber products, sisal industry, tourist industry and solar salt producers.

The appraisal identified the following important coastal environmental issues and their perceived causes:

- declining fish catches caused by fishing with dynamite, use of small mesh nets, commercial trawlers, overfishing, lack of appropriate gear, mangrove cutting, increased number of consumers, pollution, poverty, lack of law enforcement;
- coastal erosion caused by mangrove clearance;
- deforestation with scarcity of fuel wood and building materials caused by firewood cutting for salt boiling, increased demand for fuel wood for domestic use, unregulated

- timber cutting;
- low agricultural production caused by increased habitat for vermin, inadequate farming implements, lack of expert advice;
- failure to manage natural resources caused by inaction of both government and community members;
- beach pollution caused by human wastes and sisal factories;
- lack of basic social and financial services in most villages.

The above issues were then discussed and agreed to by the first regional workshop held in June 1995. These issues were very similar to, but not identical to those which had been identified in initial early investigations with government representatives (IUCN 1993).

The Programme was thus faced with the challenge of making measurable progress in addressing these important issues. The first challenge was developing an administrative structure that suited the Programme partners.

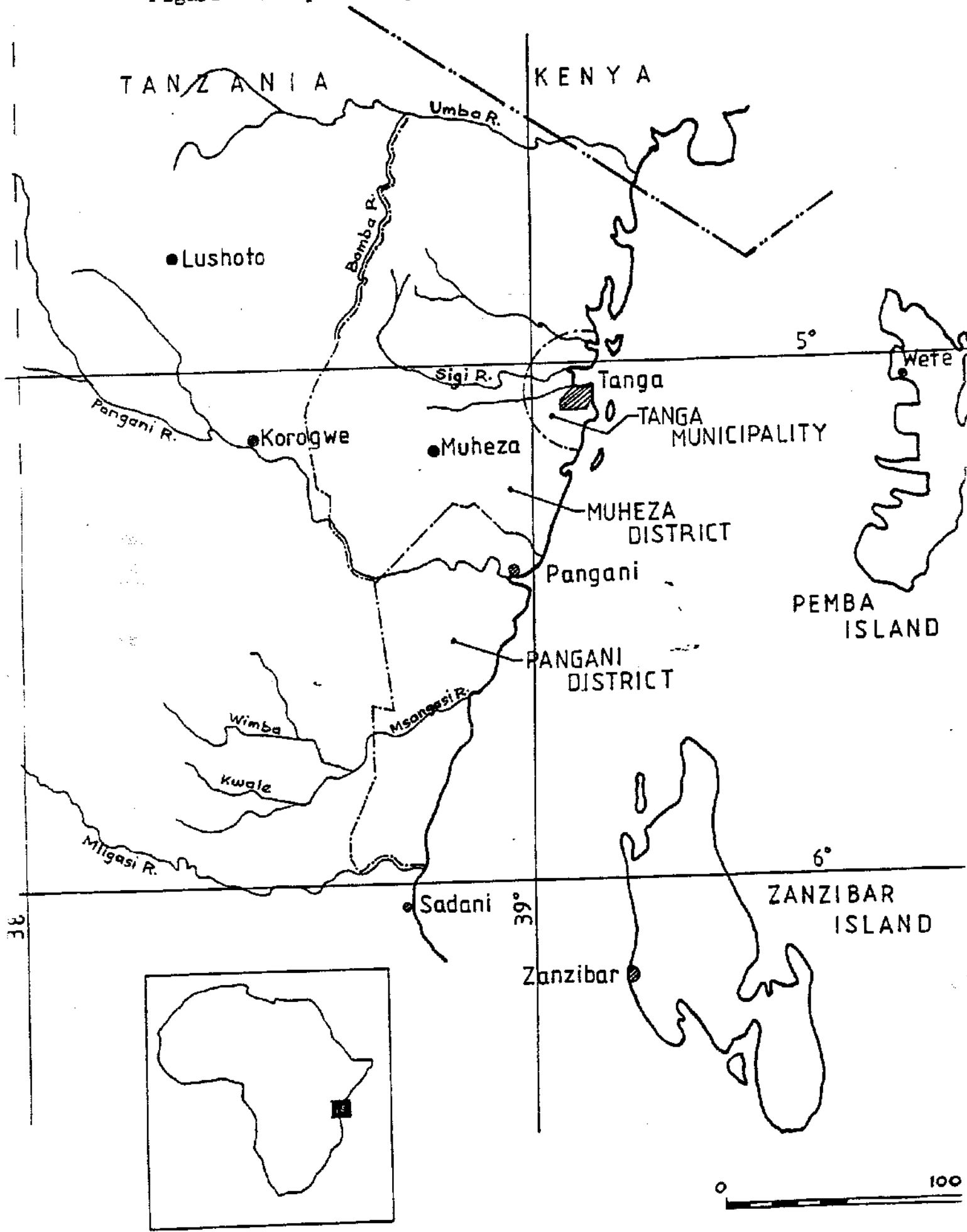
2.2 Administrative Arrangements

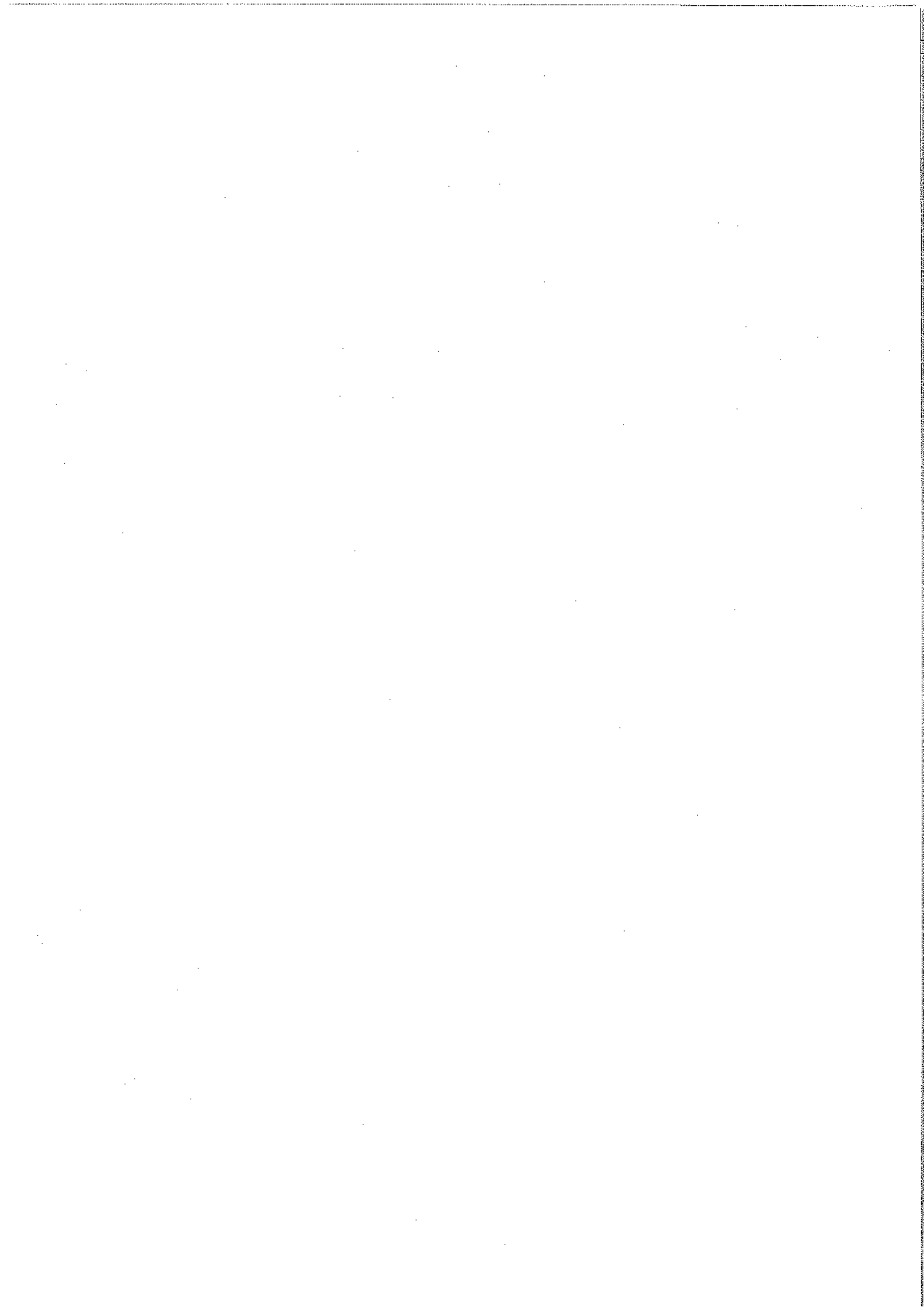
Tanga Region has five districts, of which Pangani, Muheza and Tanga Municipality are coastal (Fig. 1). These three districts, along with the Office of the Regional Development Director (changed to Regional Administrative Secretary in 1996) became the implementing agencies of the Programme. IUCN-the World Conservation Union, through its Eastern Africa Regional Office in Nairobi, supplied technical advice and financial management. Irish Aid supplied financial and policy support.

The Programme's overall direction and monitoring of progress was given by a Regional Steering Committee. This committee was chaired by the Tanga Regional Administrative Secretary, and comprised the District Executive Directors of Muheza and Pangani, Tanga Municipal Director and a representative of Irish Aid and IUCN. The committee met at least twice each year, approved annual work plans and progress reports and budgets, and made policy decisions as required. All meetings were minuted and decisions recorded. This very active steering committee proved to be an essential element in the successful adaptive approach taken by the Programme.

The Programme's activities were undertaken by a team of government staff, both at the regional and district levels (see Appendix 1 for a full list). These were assisted by four technical advisors, who were employees of IUCN. Short-term consultants supplied technical inputs in the areas of mariculture, traditional management practices, collaborative forest management, artisanal fisheries and databases. Several trainers and facilitators were also contracted to undertake specific training courses and specific tasks. In addition, some support staff were employed directly by the Programme, as no government staff were available for these positions (e.g. security guards, drivers).

Figure 1 : Map of Tanga Region





3. Programme's Goal, Objectives and Intended Results

A small government workshop in early 1993 developed a structure for a project proposal (IUCN 1993). This workshop identified a number of critical environmental issues and proposed a set of actions that could be taken to start dealing with these issues and to establish integrated coastal management in the Tanga Region. The proposal included an overall goal and objectives for this new Programme. The proposal was agreed to be funded by Irish Aid and became the Tanga Coastal Zone Conservation and Development Programme. Phase 1 started in June 1994 and continued until June 1997.

The Programme's overall goal is:

To safeguard the resources of the Tanga Region coastal environment for the benefit of present and future generations of residents, through a series of integrated activities aimed at protection, sustainable use and management of coastal zone resources.

There were two Programme objectives in phase 1:

- To build the capacity for integrated management of the coastal zone, by working with regional resource management and planning authorities, and community leaders.
- Working with coastal communities to restore degraded environments, strengthen or revive traditional resource management and tenure systems, and implement management of coral reefs, mangroves, coastal forests and wildlife (IUCN 1993).

During phase 1, it was accepted that the two objectives would not be totally achieved, but that substantial progress could be made. Therefore, a number of specific intermediate results were agreed by the regional and district government staff running the Programme. These were based on the results and actions which were recommended at the annual Regional Workshops. These workshops involved more than 120 participants, including over 50 representatives from villages and elected officials. Therefore, there was confidence that the agreed results and actions received substantial support from the local villages and resource users themselves. Most results indicated in the original project proposal (IUCN 1993) were included. Those that were not, and the reason for their exclusion are given in Appendix 2.

A logical framework was developed in January 1996 from these results, and subsequent work plans itemised specific activities to be done to reach those results. The results and indicators for each objective is given in Table 1. The complete logical framework is given in Appendix 3.

In developing the specific results for phase 1, the Programme adopted an approach recently forwarded by Piccotto and Weaving (1994). This approach suggests that a programme should go through four distinct stages:

Listening - to ensure that the priority issues and actions are those of the beneficiaries themselves; in this case, the resource users and the resource managers.

Piloting - to test how well proposed actions actually work, and to try alternatives.

Demonstration - to fine tune and adapt processes and actions to a wider range of cases; and to develop cost-sharing arrangements.

Mainstreaming - to adopt processes, actions and methods as normal practice throughout the region.

The Programme essentially followed these stages; the listening stage consisted of the participatory resource assessments and the regional workshop to agree on the priority issues and options for actions. It then tested how well the proposed actions work. A number of pilot studies were set up, one in each of the three districts, to test two issues each. A limited number of mariculture trials were commenced. A number of mechanisms for improving the institutions for coastal management were also tried. The last two stages of demonstration and mainstreaming will be done in later phases of the Programme.

Table 1. Results from Programme's Phase I

Objective	Result Area	Indicators
Enhanced institutional capacity for integrated coastal management	Proposals developed for regional and district coordinating agencies	- agencies with agreed terms of reference
	Established forum to promote participation of all key stakeholders	- workshops, meetings with recommendations acted on by Programme
	Regional, district, village government running resource management activities	- work plans and action plans successfully completed
	Streamlined prosecution system for control of illegal use or harvesting of coastal natural resources	- increase % prosecutions successful - cases heard within set time
	Pilot villages empowered to control destructive and illegal practices	- by-laws in place and used - patrols undertaken
	District governments actively support collaborative management with village government	- by-laws and plans approved by district councils
	Community development fund in place, stimulating more sustainable use of resources throughout the coastal area	- funds disbursed and projects completed and assessed
	Submissions made to national authorities for policies and legislation to support regional Programme activities	- 3 submissions made to Dir. Fisheries, Forestry and NEMC
	Phase II implementation plan and integrated strategies for improved coastal management	- Phase II proposal - strategies and guidelines written
Coastal communities implementing effective sustainable resource management	Baselines established for monitoring status of coastal resources and their uses	- reports and maps - rapid methodology
	Working examples of coral reef management Programme established	- plans & by-laws being implemented in 2 pilot villages
	Working examples of management of mangroves by coastal communities in collaboration with government	- plans & by-laws being implemented in 2 pilot villages
	Working examples of management of coastal forests and wildlife by coastal communities in collaboration with government	- woodlot agreement in 1 village - plans implemented in 2 pilot villages for vermin control
	Increased economic opportunities and alternative resource uses made available in the coastal area	- 4 mariculture trials under way - 6 groups outside pilot villages with new projects
	Working example of beach pollution control in place	- sanitation plans implemented in 3 pilot villages
	Working examples of villagers controlling coastal erosion	- plans & by-laws being implemented in 2 pilot villages

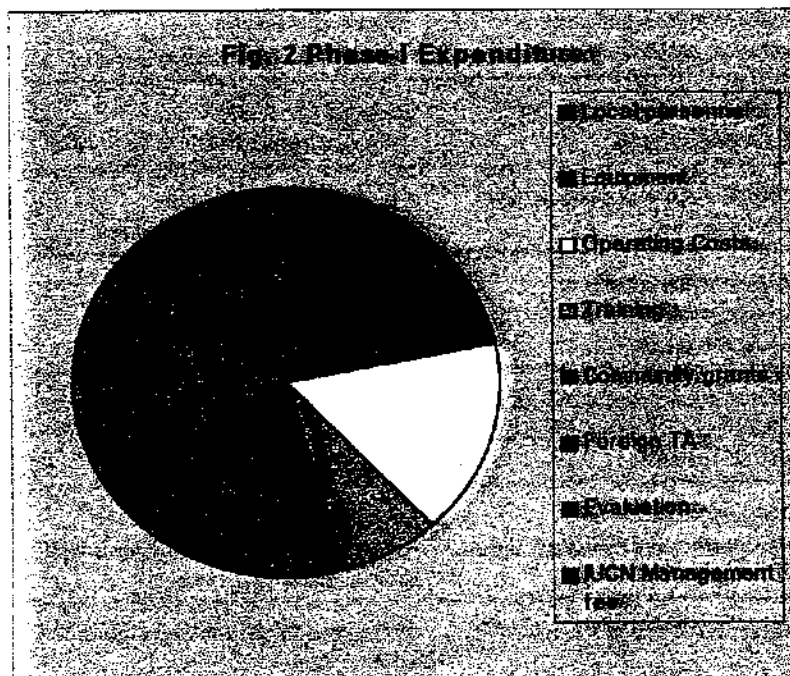
4. INPUTS AND BUDGET EXPENDITURE

4.1 Budget Expenditure

The total approved budget for phase 1 was 3,052,000 Swiss Francs. It is estimated that approximately 3,026,000 will actually be spent, representing under expenditure of less than 1%. Expenditures (estimated on basis of actual up until end of May 1997) according to main budget line headings are give in Table 2 and Figure 2 below.

Table 2 Budget expenditures for Phase 1 (Sfr)

Budget Line	Original Allocation(7/94)	Total Expended (6/97)	% Total
Local personnel	191,000	191,000	6
Equipment	478,000	475,000	16
Operating Costs	423,000	486,000	16
Training	209,000	226,000	8
Community grants	24,000	36,000	1
Foreign TA	1,112,000	1,180,000	39
Evaluation	22,000	60,000	2
IUCN Management fee	342,000	372,000	12
Total	3,052,000	3,026,000	99



Initial budget allocations were revised each year. Expenditure for each result area was not tracked and therefore cannot be reported on.

4.2 Inputs

The inputs provided in Phase I, using budget line headings, included:

Local Personnel

- 1 Programme Coordinator; 5 Regional Coordinators
- 6 full-time administrative staff, 1 part-time
- 8 drivers
- 8 security staff; 1 grounds keeper
- 3 District Coordinators; part-time 3 district technical teams
- up to 20 district extension workers
- several part-time, contractors to undertake specific tasks

Equipment and Assets

- 7 four-wheel drive vehicles
- 8 motorcycles
- 3 fibreglass boats, 1 inflatable boat, 1 trailer and 4 outboard engines
- one refurbished Programme office
- furniture and equipment for 2 Programme offices, 3 district offices, 3 village offices, 4 technical advisors' houses
- 7 computers, 5 printers, 3 power systems
- radio stations and hand sets
- field equipment for coral reef and forestry surveys
- various cameras, audio-visual equipment

Training

- suitable trainers for more than 12 types of training courses (details given in Training section)
- short courses at 4 overseas locations
- travel costs and allowances to attend above training courses and study tours to Mombasa, Zanzibar, Pemba, Mtwara-Lindi
- travel costs to present papers at 4 international conferences
- costs of co-hosting 1 international conference in Tanga
- costs of attending programme management officers training course at Usa River (4 x 1-month modules)
- travel costs for attendance at annual IUCN projects meeting

Foreign Technical Assistance

- salaries and benefits for 4 expatriate technical advisors, resident full-time in Tanga
- 6 expatriate consultants on short-term contract for specific tasks: mariculture assessment, traditional management practices, data base setup, assessment of community development fund, collaborative forest management, reef fisheries management strategies
- IUCN Eastern Africa Regional Office staff, part-time

Community grants and trials

- 24,000 SFr in direct grants to village groups for approved projects
- mariculture trials in 4 villages
- 4,000 SFr to village committees for material inputs

IUCN Management fee

- flat 14% of all expended amounts to cover costs of financial management, overseas procurement, etc.

5. Summary of Progress and Evaluation Findings

5.1 Outcomes of Programme Results

The completion of the Programme's planned activities produced numerous outputs and some important outcomes. These are detailed below in Table 3. This also shows which planned activities were not completed in phase 1.

Table 3. Results, Outputs and Outcomes of Phase 1

RESULT: Proposals for regional, district coordinating agencies
OUTPUTS: Recommendations from technical workshops. Regional and District Steering Committees with TORs. One regional coordinating body and proposed mariculture and enforcement bodies.
OUTCOMES: Heightened awareness of need for coordination. Commitment from RAS for coordination. e.g recommendations on how to handle the Koweï prawn farm development.
NOT DONE: Proposal for legal establishment of regional body: An ad hoc group, the Regional Coastal Environment and Conservation Committee has been formed. Although legally constituted under the RAS chairmanship, it remains to be seen as to how effective it is as a coordinating or regulatory body.

RESULT: Established forum to promote participation of all stakeholders
OUTPUTS: Stakeholders identified through socio-economic study. 3 regional workshops of >100 reps, with specific recommendations. 1 meeting with sisal industry; meetings and monitoring of Tanzania Fertilizer Factory discharge.
OUTCOMES: Regional workshop with representatives of identified stakeholders agreed on priority issues and actions; reviewed progress and agreed actions to overcome problems. Low involvement of commercial stakeholders so far. Some meetings initiated with sisal industry but no 'outcome' yet. "Stop" order to Tan Fertilizer Co issued by Tanga Municipal Health Officer, but discharge still continued.
NOT DONE: Seminars with commercial users: Only one meeting with sisal industry representatives was held. As the Programme focussed on developing collaborative management with village resource users, large-scale commercial users were low priority. The process used with village resource users is not considered appropriate for these users.

RESULT: Regional, district, village personnel running resource management activities, through the Programme.

OUTPUTS: 18 regional and 39 district staff trained in planning; monitoring and evaluation; community based project management; coastal ecology & integrated coastal management.

23 district staff trained to support communities to identify, analyse & solve their priority issues.

10 village committees in 3 villages with balanced representation (gender, occupation, area, age) selected by villagers to organise actions and trained in planning. 10 village action plans.

Technical training for up to 100 villagers in various skills. Study tours to 4 coastal locations.

Village meetings to discuss conflict issues

9 primary school teachers and 11 other education staff trained in coastal ecology.

Draft curriculum for primary schools in coastal ecology; 150 primary school children trained.

CD Fund recipients received business management training.

OUTCOMES: Programme is run by 6 regional and 3 district coordinators using quarterly & annual work plans. District Technical Teams also do work plans but implementation is variable.

Most critical government staff now have a basic understanding of coastal ecology and management. District staff active in reef fisheries management planning.

Extension staff very positive about their role as facilitators, and coastal villagers.

Broad support within pilot villages for committees & their action plans. Information learned on study tours used in village plans.

Committees use micro planning in developing action plans.

RESULT: Streamlined prosecution system for control of illegal use or harvesting of coastal natural resources.

OUTPUTS: 20 district magistrates, prosecutors & inspectors trained in coastal ecology.

Terms of reference for a regional task force on enforcement; but no meeting yet.

No progress on training fisheries prosecutors

OUTCOMES: Fines have increased; 2 boats have been confiscated. No change in duration of prosecution.

RESULT: Pilot villages empowered to control illegal and destructive practices

OUTPUTS: 3 sets of village by-laws approved by districts.

3 villages trialing sea patrols for 10 months.

4 villagers at Kigombe and 10 at Kipumbwi trained in boat handling

Assessment of trial patrols' effectiveness.

Weaknesses of enforcement mechanisms identified

Militia training organised for 3 pilot villages

OUTCOMES: Kipumbwi has used by-laws in at least 4 cases

Patrols have good villager participation. Boats now being driven by villagers. Villagers now collecting fish catch statistics.

Approximately 80% reduction in number of blasts within the patrol areas. Perception in villages that fish catches have increased; supported by analysis of fish statistics that show 10% increase.

Kigombe: 2 vessels with catch, & 1 separate catch confiscated & 1 person arrested.

Kipumbwi: eradicated use of plastic bags on seine nets, 1 dhow arrested with illegally harvested timber.

Mwambani: 2 boats & 1 catch confiscated.

Most fishers (~70%) in pilot villages now have licences.

NOT DONE: Proposal for retraining of dynamite fishers: This activity was deleted as Programme team felt that assisting law breakers should not have priority over assisting those who aide by the law. But this activity may be reconsidered in Phase II.

RESULT: Submissions made to national authorities for policy and legislation to support regional Programme activities
OUTPUTS: Draft coral reef fisheries management plans for 2 villages approved by Districts and submitted to Director of Fisheries with request for regulations to support. Draft operational guidelines for submission to Director of Forestry on establishing collaborative management of mangroves. This activity has been added, because Programme made substantial progress in this area. Draft operational guidelines were requested by the Director of Forestry.
OUTCOMES: No outcomes yet
NOT DONE: <u>Submission to NEMC on a regional development plan and the use of environmental impact assessment:</u> No submission will be possible, as the Programme has not undertaken any activities on use of environmental impact statements in phase I.

RESULT: District governments actively support collaborative management
OUTPUTS: Seminars on collaborative management for regional and district staff and pilot village reps. Variable attendance of DTT at village action planning meetings, and supervisory visits
OUTCOMES: 3 sets of village by-laws approved by their districts. Pangani District review by-laws on environment management Fisheries management plans for Kigombe and Kipumbwi

RESULT: Community Development Fund in place stimulating more sustainable use of resources
OUTPUTS: 3 districts administered fund in 3 ways Contracts signed for all recipients Evaluation of the fund's effectiveness and recommendations for future use of such a fund.
OUTCOMES: 8 village groups received grant aid for income generating activities.

RESULT: Phase 2 implementation plan and funding proposal
OUTPUTS: Recommendations from districts on desired results and inputs (personnel training, funds, equipment and policy); villagers' recommendations on desired results. Strategies developed for fisheries, forestry, training, coordination, and village participatory process.
OUTCOMES: Phase 2 funding proposal to Irish Aid approved
NOT DONE: <u>Needs of regional offices for next 3 years determined:</u> Due to regional government restructure, this is no longer a priority.

RESULT: Participatory appraisals to establish monitoring baselines of coastal resources
OUTPUTS: Govt staff trained in techniques for participatory appraisals, rapid assessment of reef and forest Participatory socio-economic study in 9 coastal villages on stakeholder identification, resource use patterns, traditional management systems, knowledge, attitudes and practices, and previous experience with community projects. Repeat examination of socio-economic indicators in 1997. 93 reefs identified & mapped. 53 reefs assessed for reef health, 85% for fish community structure, and 94 % for coral diversity. Resource use patterns also identified. 11 coastal forests profiled and assessed. Limited forest resource use info from rapid profiles in 26 villages. Information collected on turtles and wader birds. Limited information on sea mammal sightings.

OUTCOMES: Socio-economic baseline for 1995. Information used in identifying priority issues for Programme and in fisheries management process. Remeasured Feb 1997 to measure impacts of activities. Baseline on coral reefs for 1995 established. Information used in fisheries management planning. Limited baseline for coastal forests for 1996. Pilot for collaborative forestry management trial identified. Information passed to Tanzania's Important Bird Areas Project identifying 2 sites meeting RAMSAR criteria.

NOT DONE: Aerial surveys and village-based survey of marine and land-based mammals: Survey arrangements could not be organised for a suitable period. This activity may be rescheduled for Phase II; however, it needs to be backed up by village-based participatory assessments, and a commitment for collaborative management with local resource users, through the Department of Wildlife.

RESULT: Working examples of coral reef management established

OUTPUTS: Reef fisheries management plans developed for Kigombe and Kipumbwi which address illegal fishing, destructive but legal fishing, zoning of reefs, access rights and development of FADs. Fisheries consultants' report.

Investigation on the rate of coral recruitment into damaged areas.

OUTCOMES: Agreements with neighbouring villages on reef closures. Management plans being considered by district committees & councils. Perception that fish catches have increased through enforcement. Reef fisheries management strategy on ways to reduce fishing pressure

NOT DONE: Passive reef restoration trials in one village: No progress was made in phase I, because reef restoration is dependent upon effective protection from destructive practices. This protection was not completely established during phase I. Baseline for monitoring reef restoration has been established. Some experiments on recruitment for restoration have been completed by an university research student.

RESULT: Working examples of management of mangroves established

OUTPUTS: Agreement between MMP and Programme on collaboration. Mwambani village have met 90% of targets for replanting. Kipumbwi & Sange village committees established. Guidelines for collaborative management drafted.

OUTCOMES: Kipumbwi and Mwambani have produced village by-laws.

RESULT: Working examples of coastal forests and wildlife established

OUTPUTS: No progress on coastal forests, except baselines established (see above). Action plans to deal with crop damage by vermin in two villages.

OUTCOMES: No outcome in coastal forests. No effective methods for vermin control yet identified; links being made with other agencies, eg sisal estates, to assist. Woodlot plantation started in Kigombe and villagers making fuel efficient clay stoves.

NOT DONE: Management trials of native forests for fuelwood: This activity was deleted, as only one management trial (in mangroves) could be handled this phase. It may be undertaken in next phase.

RESULT: Working examples of new coastal resources uses for economic diversity
OUTPUTS: Mariculture potential assessed. Trials started. Village and district officers trained. Awareness meetings of mariculture held in villages. Seaweed expansion assessed. TORs for mariculture advisory committee. 8 groups assisted by CD fund. >100 villagers trained in basic management skills
OUTCOMES: High level of interest in mariculture (> 1000 villagers in 35 villages actively farming seaweed). 4 village specialists doing routine maintenance in 2 villages. Village specialists advising on seaweed farming.

RESULT: Working example of beach pollution control in place
OUTPUTS: 2 sanitation plans
OUTCOMES: 3 villages have built 65 cheap latrines; >150 rubbish pits

RESULT: Working examples of coastal erosion control in place
OUTPUTS: 2 villages with action plans; Mwambani planted 59,000 seedlings; Kigombe unsuccessfully planted mangroves, now trying new techniques learned on Zanzibar
OUTCOMES: No effect on coastal erosion; increased awareness of causes of erosion. Mwambani and Kigombe with by-laws on control of use of stones, beach, set-backs

5.2 Evaluation Findings

The Programme was evaluated by an independent external team during February 1997. The membership and methods used are given in their report (Meltzer 1997). They listed a total of 39 findings, and 7 recommendations.

Overall, they found that the Programme's goal and objectives were valid, relevant, realistic and urgent, given the context of Tanzania and the Tanga Region today. The Programme had successfully completed most of its planned activities. These activities have led to some real changes, both in attitudes and behaviour, on the part of both villagers and government officers.

Specifically, the Programme has been able to successfully introduce a participatory, bottom up, community-based and community-led process for establishing coastal resource management. This was done through the use of community animation and participatory planning. Many government staff now have a good appreciation of the issues and practice of coastal management, as well as participatory approaches to decision-making. However, the three district technical teams and pilot villages showed different levels of achievement.

The Programme team is well motivated and managed, practising modern management skills and procedures, such as staff self-appraisal. There is good internal monitoring and review, and the team learns from its weaknesses and makes changes to correct these. The Regional Steering Committee functions well, approving changes in Programme activities and budgets. All partners are enthusiastic and full participants in this committee.

Some tangible inputs are required from the Government of Tanzania to assist the Programme to achieve some of its intended results, e.g. improved enforcement of dynamite fishing.

However, these inputs have not been obtained during phase 1. Although the Programme is consistent with partners' policies, there is a need to provide more specific guidance on some issues, such as providing direct material assistance to villagers. This policy was not clear to all partners or Programme staff, and the mechanism used in phase 1 (Community Development Fund) was not very successful.

Technical support provided on the ground has been good, with back-up support provided by the broader IUCN network. This support has represented more than 50% of the total costs of the Programme. But given the actual results achieved, it was not felt to be excessive.

Gender awareness, participation and motivation were high, resulting in "significant gains for women" (finding 13). There is a need to expand the socio-economic monitoring to cover a wider range of indicators and stakeholders. The initiatives taken demonstrated measurable qualitative and quantitative changes in resource use patterns. But there has been no real changes yet in people taking up alternative resource uses. There is no reduction in the numbers of fishers, and no improvements yet in food security.

6. LESSONS LEARNED from PHASE I

This section sets out the processes used, the information obtained and the numerous lessons that were learned in the first three years of operation. First, an overview is given of the general process used in villages to develop collaborative management action plans and agreements. Then brief summaries of approaches taken, information obtained and lessons learned are presented under each of the Programme's 16 result areas. Section 6.11 contains summaries of the current state of coral reefs and fisheries, coastal forests and socio-economic well-being of coastal villages, obtained through participatory rapid surveys.

6.1 Overview of Action Planning and Collaborative Process

In phase 1 a process was developed to enable effective community participation in collaborative resource management. This included involving the stakeholders (principally coastal villagers and resource users) in identifying and prioritising the issues which the Programme dealt with. It included keeping everyone informed of what was going on and engendering a sense of ownership of the Programme among coastal villagers and local government staff. It also included building a relationship of trust and cooperation between coastal villagers and local government.

A collaborative approach between government agencies and local resource users was taken from the start, with the use of participatory resource assessments. These were done in the coral reef survey, coastal forest survey, and socio-economic survey. These surveys identified issues and possible actions to deal with the issues. Then, a process of action planning, implementing, monitoring and reviewing took place. This was initiated at the village level, but with support and facilitation by government staff. Appendix 4 details the steps taken in this participatory process.

Training was provided to both government staff and villagers. Training was given to whatever sector had an influence on the outcomes of the action plans, including magistrates and police. In villages, not only specific groups like fishermen received training but representatives from all village interest groups. Training and awareness activities were focussed on making both villagers and local government aware that solutions to the issues could only be found by working together, with each party taking up actions within their own responsibilities and capabilities.

The action planning process applied equally well to all the priority environmental issues: coral reefs and fisheries, coastal forests, mangroves, beach pollution and coastal erosion. There were some differences, depending upon the type of enforcement actions required. Where closures of reefs were recommended, or access to long-term use of resources was required (such as access to planted trees in woodlots), then formal, written agreements between government agencies and the resource users are required. In other cases, management actions could be taken and not require any formal agreements between government and resource users, e.g. building pit latrines.

This process can be described in three main stages:

- *Initial training of government staff and identification of priority issues* through rapid appraisal surveys. Regional and district extension staff were reorientated through training in participatory assessments, facilitation skills and coastal culture. They also received training in rapid resource appraisal techniques. Socio-economic, coral reef and fisheries, and coastal forest resource assessments were done in a selection of villages and sites. These surveys were undertaken in a collaborative, participatory way with village resource users. A large regional workshop, with representatives of the major stakeholders prioritised the issues which the Programme would address. Districts then selected one pilot village to test out actions to deal with the priority issues.
- *Detailed investigation of resource use and potential management structures.* Government staff and resource users interactively analysed the causes, impacts of and possible solutions to the issues, and gained a better understanding of the resource use and users. This was done with as many different interest groups as possible so that a broad representation of village interests was ensured. More detailed investigations of traditional management systems was also done. The villagers then decided to form committees among themselves to oversee the actions they were prepared to take about their issues. These committees were facilitated by government extension workers, and received technical support from other staff.
- *Developing and implementing action plans or management agreements.* Village committee members received training in 'micro-planning' - how to formulate action plans with clear achievable objectives, indicators and actions to achieve them. They, along with government technical staff if needed, proposed action plans, or in four cases, management agreements. These plans set out an overall management objective, options for actions, indicators, responsibilities and required inputs. In the case of management agreements, which will become formal legal arrangements, they also include authority, controls and penalties. The proposed plans are acted on by the committee with other participants. In the case of the management agreements they go through a process of receiving formal approval from village, district and central government authorities. Both the plans and agreements are regularly monitored and reviewed every six months.

Throughout this process, an integrated, cross-sectoral approach was taken. Government Programme teams and district technical teams, composed of several sectors, met regularly to plan and take actions to support and facilitate the village initiatives.

Lessons Learned

- Stakeholders should participate in all stages including resource assessments, identifying problems and planning actions to ensure a sense of ownership.
- Participatory resource assessments, done jointly with government and village resource users, has been influential in changing attitudes and building better relationships between villagers and government officers. The resource assessments were the start of participatory dialogues.
- It is important to verify resource users' perceptions of resources; independent observations were made for both coral reefs and coastal forests.
- Village resource users have displayed considerable knowledge and awareness of the state of health of their coastal resources, but they often lack suitable alternatives to harmful practices.
- Focussing on a small number of priority issues is very important in gaining the support of the village and in concentrating on the critical actions to address them. Setting clear objectives for village action plans is critical in ensuring that everyone knows what they are trying to achieve and in focussing activities to reach them.
- As women are considered among the poorest people in coastal villages, they must be targeted if poverty is to be reduced. Specific strategies are needed for targeting women and ensuring their participation.
- Ongoing monitoring and regular evaluations (i.e. every six months) are needed to check how well anticipated impacts match reality. Modifications are needed to actions which do not lead to the desired outcomes.
- Regular feedback meetings have proved very useful in participatory monitoring of progress and in sharing ideas and experiences to solve problems.
- Back-up government support is critical to provide good technical and policy advice and to monitor progress.
- Periodic checks are needed to assess the effectiveness of committees and whether they have the broad support of different interests in the village community.
- It is important to have transparency in decision making and ensure that as many stakeholders as possible are aware of what is happening.
- Collaborative approaches with village resource users can give noticeable results, even in a short time (less than 2 years).

6.2 Proposals developed for regional and district coordinating agencies

The Programme operated within the existing government structure, and not in parallel. The government structures to coordinate activities at the regional level were the Regional Development Committee and the Office of the Regional Administrative Secretary. However, during the course of phase I, there were major changes introduced here. The Regional Development Committee no longer exists. All regional offices face drastic cuts in the number of personnel.

At the district level, coordination occurs through standing committees, such as Finance and Planning Committee, and through meetings of the District Councils. However, the latter

usually only meets twice a year. Environmental issues are not considered by standing committees as a matter of course at this time. Districts have technical staff that meet together to discuss and plan actions.

Programme activities were coordinated by a multi-disciplinary team, work planning sessions between Programme team and district technical teams, Regional Steering Committee and ad hoc task forces as needed (such as the Administrative Task Force). At the end of phase I, a Regional Coastal and Environmental Committee was formed. It has had only one meeting, so its effectiveness cannot be assessed yet.

Much of the success of phase I depended upon the adaptive management that is necessary when testing actions. This required a coordination process that was also flexible. The Regional Steering Committee was the key behind this flexibility. It met at least twice per year, agreed changes in work plans and budgets and Programme procedures. Its members also participated in important planning workshops along with Programme team members, to develop the logical framework and annual work plans.

Lessons Learned

- Programme worked within existing structures, with government officers remaining as members of their own departments. They were responsible for keeping other government officers informed of progress, issues and activities. This was instrumental in preventing a separate "project culture" from developing.
- Clear roles and responsibilities of each government office in the Programme were put into a written agreement with the three District Executive/Municipal Directors and Regional Administrative Secretary. However, reaching this agreement on the details of administrative arrangements took time. It took nearly six months to conclude.
- The recent changes in regional government structure will necessitate central government to develop alternative methods of supplying technical and other support to the districts. This Programme could supply a model for supplying such support.
- There were a number of problems in achieving meaningful collaboration with other agencies in the region. A memorandum of understanding was developed with the Mangrove Management Project. Such written agreements are recommended to ensure clear communications between agencies.
- District coordinating agencies already exist through the District Council and a number of standing committees. It must be ensured that environmental issues are effectively dealt with in these existing structures. This process will be assisted if District Councils have a confirmed role in the Programme, including approving Programme work plans.
- The Regional Steering Committee proved an effective means of coordinating policies and implementation not only between the region and districts, but with the other Programme partners, Irish Aid and IUCN.
- Ad hoc task forces can be effective, as they act on a specific task and disband once the task has been achieved. They are often preferred to establishing a formal coordinating agency (e.g. proposal for regional and district task force to deal with illegal fishing).

6.3 Established forum to promote participation of all key stakeholders

The participatory socio-economic survey identified the main stakeholders in Tanga Region, which are listed in Table 4. Representatives from this list, along with government officers and elected representatives (e.g. district councillors) were invited to annual regional workshops. This workshop has become the main forum for all stakeholder groups to meet together. They have agreed priority environmental issues to be addressed by the Programme, recommended actions and reviewed progress. Members of pilot villages were also invited onto district steering committees, that oversee and approve Programme work plans within the districts.

Lessons Learned

- Programme started with a listening stage based on participatory appraisals, and identifying priority issues and actions. The results of these appraisals confirmed earlier work which had been undertaken to develop the Programme's funding proposal. There is major consensus on priority issues and actions between villagers and government officers.
- Annual regional workshops involved active participation of more than 50 villagers, and almost as many government officers. The participants took the recommendations of the workshop back with them to their villages. This was used as the platform for further actions in the village.
- District steering committees with village representatives and government representatives could prove to be an effective forum to promote broad participation and interaction among the main stakeholders.
- The processes used to date have not been effective in involving large commercial users. They were involved in the first regional workshop, but no Programme activities were planned to deal with their specific issues until very late in phase I. Further testing of procedures will be needed.

6.4 Regional, district, village government running resource management activities

The roles and responsibilities of regional and district staff were defined at the beginning of phase I and a training programme developed based on their roles and responsibilities (Table 5; for more details see Appendix 5). Regional staff provide coordination and technical support to district staff. These in turn develop and implement work plans, as well as directly provide services to the villagers. They received programme planning and management skills as outlined in Table 5. They also received training in specialised technical areas such as mariculture, environmental education, integrated coastal management. Effort has been made to design training courses and seminars for representatives of different government sectors and levels and to stimulate dialogue and cooperation between them.

Table 4. The Major Stakeholders in Tanga Region

Resource	Primary Users	Secondary Users
Ocean / seawater	Seaweed farmers, salt boilers, solar salt producers, sea transport	Exporters & users of sea transport; Tourism operators
Coral reefs	Lime collectors / burners, house builders, tourism operators, trophy collectors	Builders (cement, limestone)
Fisheries	Fishermen - hand lines, traps, nets (seine & dragnets), dynamite, divers, boat owning fishermen, 'Visiting' fishermen, trawlers Fisher women - beach seining, octopus & mollusc collectors, tourism operators (game fishing)	Men & women fish traders, fish processors (fryers, driers, smokers), fish dealers for inland market and for export, tourism operators
Beaches	Fishermen, Fisher women, households (sanitation needs), tourism operators	Traders, processors
Mangroves	Pole cutters, fishermen, salt boilers, solar salt producers, lime burners, boat builders, house builders, traditional healers, crab & other fisheries, mariculture, households	Mangrove pole traders, saw millers
Bare Saline areas	Solar salt producers, brine wells,	Salt traders
Rivers	Households, sisal estates, coconut plantations, transport, industries	
Arable land	Households, farmers, sisal estates, coconut plantations, cashew nut farms	Traders, processors & exporters of agricultural produce
Ground water	Households, farmers, sisal estates, industries	
Coastal forests & woodlands	Households, salt boilers, lime burners, timber cutters, charcoal makers, boat builders, bakeries, house builders, traditional healers, honey gatherers, hunters	Saw millers, fuel wood transporters, fish processors
Wildlife	Hunters, tourism operators, trophy collectors, safari companies	

Table 5. Training needs assessment for government staff and villagers

	Regional staff	District tech. staff	District extension staff	Villagers
Roles and responsibilities	<ul style="list-style-type: none"> - coordination - develop work plans with districts - monitor work performance - provide technical support and training - report to regional steering committee 	<ul style="list-style-type: none"> - develop work plans - monitor work performance and progress and provide on-ground support to field staff - provide technical support and advice - report to district steering committee 	<ul style="list-style-type: none"> - facilitate and assist villagers to analyse problems and solutions, and to plan, implement and monitor actions and progress - provide technical advice in their specialty - link villagers with others 	<ul style="list-style-type: none"> - analyse problems and solutions - take responsibility to plan, implement and monitor actions and progress to solve their priority resource use related issues
Training needs	<ul style="list-style-type: none"> - basic knowledge of coastal ecology - analysing and planning skills - technical knowledge and skills 	<ul style="list-style-type: none"> - basic knowledge of coastal ecology - analysing and planning skills 	<ul style="list-style-type: none"> - communication, facilitation and animation skills. - basic knowledge of coastal ecology, coastal culture and collaborative management, - analysing and planning skills 	<ul style="list-style-type: none"> - planning skills - technical knowledge and skills
Training	<ul style="list-style-type: none"> - coastal ecology - problem analysis and planning. - supervision and monitoring - community based project management. - operation and maintenance of community projects. - participatory monitoring and evaluation. - computer skills - technical training courses 	<ul style="list-style-type: none"> - coastal ecology - problem analysis and planning. - supervision and monitoring - community based project management. - operation and maintenance of community projects. - participatory monitoring and evaluation. 	<ul style="list-style-type: none"> - participatory appraisal techniques (PRA) - communication, facilitation and animation skills - coastal ecology and coastal culture. - analysing and planning skills - training as trainers 	<ul style="list-style-type: none"> - micro planning - village game scouts training, - fuel efficient stoves, - bee keeping, - tree nursery techniques & tree seed handling - cheap latrines in sandy soils. - training as trainers - business management skills
Further training needed	<ul style="list-style-type: none"> - further management training - gender sensitive assessments and planning - participatory monitoring and evaluation 	<ul style="list-style-type: none"> - facilitation skills - management training. - participatory assessments, planning and monitoring techniques. 	<ul style="list-style-type: none"> - refresher in PRA techniques, animation and facilitation skills, planning skills. - Further briefing about community based/collaborative management. 	<ul style="list-style-type: none"> - animation and facilitation - leadership skills - further technical training

District extension workers are the main avenue for delivering government services to villagers. They were provided with the skills to facilitate villagers to analyse and propose actions to help solve their priority issues. First, a training needs assessment for district extension workers was completed. This involved talking with villagers, extension workers and their supervisors about the role and effectiveness of the extension worker. This assessment (Chiwile and Salenge 1994) revealed that lack of technical skills was not a problem, but lack of communication skills was. Paternalistic attitudes and mis-match between tasks of extension workers and expectations of villagers had caused bad or non-existing relationships with villagers. Many of the extension workers are not from the coast and did not understand or appreciate the culture of the coastal people.

The assessment stressed the need to improve the relationship between the extension workers and villagers by a change of attitude and approach. The "animation" approach was suggested to bring about this change. This promotes participatory analysis of problems and solutions and maximum self-reliance in searching for and implementing solutions. It promotes participation of all different community members (men, women, elderly people, youth), and values their own knowledge and experiences.

The districts selected 18 extension workers covering the areas of community development, fisheries, forestry and agriculture. Twelve of them lived and worked in teams of four in the pilot villages. Each district also had two general extension workers who were given specific assignments in non-pilot and sometimes in pilot villages. A training programme for all selected extension workers was developed following the training needs assessment recommendations (Table 5; and Appendix 6).

The training courses were phased. Between courses, the extension worker teams used their new skills and built their relationships with the villagers. Although awareness about critical environmental issues and their causes was present it needed to be channelled into effective actions. Facilitated by the extension workers, villagers were able to analyse their problems and possible solutions. Participatory analysis of consequences helped the villagers to become more aware of the extent of the issues and how problems not only directly affect certain groups in the village (e.g. dynamite fishing affects fishermen, fuelwood shortages affect women), but also indirectly affect other groups, especially families, and even the whole village and neighbouring villages. This awareness stimulated the search for solutions and cooperation beyond their own group. Analysing causes and solutions made people aware of their own knowledge and abilities and stimulated them to take initiatives. Villagers of the pilot villages are now taking the responsibility for the use and management of their resources, supported by government. Although the pilot villages started with trying to solve only two priority issues, eventually villagers took initiatives to deal with other issues as well. For example, Kipumbwi now has a group of women who have organised themselves to start a credit and savings society.

Technical advice and training needs were discussed several times in the pilot villages. Selected villagers were trained in a variety of skills as shown in Table 5 (and Appendix 7). Whenever possible experiential learning methods were used, to build upon their own experiences and knowledge. In addition, about 50 villagers (half of them women), all extension workers, district technical team members and regional coordinators went on study tours to Pemba,

Zanzibar, Mtwara/Lindi or the Kenyan coast. They learned things like how to plant mangroves in rocky areas, running enforcement patrols without police, alternative income generating activities in agriculture, tourism and examples of community based / collaborative resource management.

Seminars were held with government staff at regional and district level to discuss animation and collaborative resource management. Working examples and benefits of these approaches were examined and compared with conventional extension methods and resource management. In study tours examples of community based / collaborative resource management were visited. Attitudes changed from scepticism to willingness to give it a try (seminar evaluations). The relationship between local government and villagers has improved and better collaboration established (see section 6.1).

As well as providing training to village committees, they also received direct material assistance for implementing their action plans to address priority issues. Each village received an allocation of TSh 500,000/=. In deciding how the money should be spent, each committee within the village compiled its requests for assistance. As a group they then prioritised the requests, and estimated the cost of each item. This resulted in a practical assessment of their requirements.

During phase 1 only limited attention was paid to environmental education. Currently, there is no environmental education in the school curriculum. In cooperation with the Mangrove Management Project and the Regional Natural Resources Officer, in June 1996 a 3-day 'Coastal Ecology' course was given to nine primary school teachers of coastal villages and 11 other education staff. A first draft 'coastal ecology' curriculum for primary schools was then developed. It needs further work to develop materials and field practices. The Coral Reef Coordinator also taught 'coastal ecology' classes for school children in the three pilot villages. These children now participate in environmental activities with the village committees.

Village youth are often the ones already involved or about to be involved in unwise use of coastal resources. Recently cooperation has been sought with the 4H project to start environmental youth clubs in the pilot villages. No other attempts have been made to get village youth involved in environmental care. Experimenting with village youth as a special target group could reduce destructive practices such as dynamite fishing, and stimulate further participation of other villagers.

Lessons Learned

- Commitment of government staff appears to be related to the amount of training, back-up support, guidance and direction provided, and adequate remuneration.
- Training and on-the-job feedback has been essential for staff to learn how to work together. Clear, measurable objectives are the key to good work plans.
- Training needs assessments are useful to design an appropriate training programme, based on the functions and needs of the participants. Training needs assessment should not be a simple wish list, but should include an analysis of roles and functions, and missing skills of the participants targeted.

- The cross-sectoral approach in training government staff has resulted in cross-sectoral cooperation at regional and district level. Training of regional and district government staff has improved their management, planning and monitoring skills and practices, but further training or refreshers are needed, especially in facilitation, management, participatory assessment, planning and monitoring techniques.
- Ingredients for effective training courses are: the use of interactive rather than lecturing methods; the use of a variety of training techniques, audio-visual aids and field visits when possible; adaptation of the course to the needs and the level of the participants (make things as simple as possible); the use of participant's own experiences; opportunities to practice what has been learned during and soon after the training course; daily and end of training evaluations; some form of support and feedback after training courses.
- Videos, especially spoken in Swahili, are an attractive and easy way of raising people's interest in resource management issues and of contributing to their knowledge about coastal ecology, coastal resources, their importance and management options.
- Study tours for villagers and government staff were very useful as "eye-openers". All participants considered the study tours very informative and useful, giving them new ideas.
- Coastal ecology, participatory techniques, animation, communication and facilitation skills, analysing and planning skills, and training as trainers were identified by the extension workers as courses that had especially helped them in their work. Extension workers would like to have regular feedback meetings among themselves to exchange experiences and upgrade their skills.
- The coastal ecology courses have proven to be a very effective instrument in raising awareness about the importance of coastal resources for the livelihood of coastal residents, the need for sustainable use and management and the responsibilities of different stakeholders in this process.
- Villagers usually know very well what bad and what good practices are, but other obstacles than lack of awareness prevent them from changing to good practices. Focussing on awareness raising of what people already know will not resolve issues. Awareness raising is a matter of providing people with relevant information so that they can adequately analyse issues and make informed decisions. Awareness raising is most effective when it is directly linked to certain activities, like introduction of collaborative management or mariculture trials.
- Villagers need a lot of support with animation and facilitation in the initial stages of problem analysis and planning. Animation has proved very effective in changing attitudes and improving relationships between extension workers and villagers, in teaching villagers to analyse their problems and possible solutions themselves, to take responsibility for the use and management of their resources, to value their own knowledge and experience, and to take initiatives.
- The contribution of district extension workers from different sectors to the process was highly appreciated by the villagers (Village phase I evaluation report).
- Training villagers as "specialists" in a variety of skills in order to train or advise a larger number of villagers appears to be effective. Most trained villagers are using their skills, practising what they have learned and training/advising other villagers.

- Before sending people to training courses there should be a clear agreement between the Programme and the course participants about the purpose of the training course, how the learned skills will be used afterwards and what kind of feedback is expected.
- Simplicity is essential - once something is found to work it should be simplified to the critical elements only so that it can be easily understood and taken up, e.g. action plans and monitoring indicators should be simple and straightforward.
- To ensure future sustainable use of coastal natural resources, environmental education of children and village youth, the future generation, is considered very important.
- Many of the actions required to achieve the Programme results in the villages are costly and beyond the financial ability of the villagers. Therefore a system of channelling direct material assistance is needed.
- Provision of a lump sum grant to pilot villages for their action plans seems to work well, as village committees had no problem in sharing the resources and deciding priorities across all the committees. The decisions on where the money is spent should lie at village level.

6.5 Streamlined prosecution system

Currently, most of the laws and regulations for protecting coastal resources are not effectively enforced (see section 6.6 below). One of the issues with poor enforcement is a slow prosecution system. Therefore, the Programme aimed to decrease the time it took between arrest and appearance in court and increase the penalties given to convicted offenders. There had been a previous history of offenders not appearing in court and very low fines given to those convicted. Gear used in committing the offence should be confiscated as prescribed by the Fisheries Regulations 1989, but this rarely happened.

There have been two main activities conducted. First, selected police officers and magistrates were given a coastal ecology course. The aim was to raise their awareness of the economic and social importance of coastal resources. Previously, offenders received small fines (TSh 2000 - 4000/=), but in the most recent case three persons convicted of possession of dynamited fish were fined TSh 50,000/= each and the boat confiscated. There is no evidence of a decrease in the time taken for offenders to appear in court.

The second action has been to improve the quality of the prosecution cases. A number of workshops and studies have recommended that the Division of Fisheries should prosecute its own cases. Therefore, attempts have been made to train district fisheries officers as prosecutors, but this was not completed during phase I.

Lessons Learned

- The police and judiciary had limited awareness of the impacts of destructive and illegal fishing. But awareness can be effectively raised with a basic two-day coastal ecology course.
- Initially, it was very difficult to conduct activities with judiciary at local level. Assistance of the Irish Charge d'Affaires was most influential in gaining participation of magistrates in awareness activities.
- At this stage, no effective actions have been found to reduce the time taken between arrest and court appearances.
- An assessment could not be made during phase I, on the effectiveness of training specialised prosecutors.

6.6 Pilot villages empowered to control destructive and illegal practices

Villagers in all three pilot villages formed committees whose mandate was the reduction of destructive fishing. The committees of Kigombe and Kipumbwi were the first to gain a broad level of support amongst users and requested Programme assistance to conduct land and sea patrols. The Programme entered into agreements for collaborative sea patrols with these management committees. Under the agreements, both the village committees and the fisheries officers keep logs of the number of reported incidences (including information on number of dynamite blasts, location, type of boat and number of fishers), what action was taken, what was the outcome and if there was no outcome, what were the reasons. Reports of illegal fishing are given direct to the patrol unit or are communicated to them by using VHF radios supplied by the Programme.

Sea patrols at Kigombe and Kipumbwi were initiated on 1 August 1996 and are still being conducted. These patrols include marine police. Patrols started in Mwambani in February 1997. These patrols are conducted by villagers and a fisheries officer. Police support is available through VHF radio contact with the Kigombe patrol boat.

At all sites the number of blasts recorded initially dropped to zero over a period of two months. In Kigombe and Kipumbwi no fishing with explosives was recorded for a further four months. However, dynamite fishing has resumed at very low levels (Table 6). Reasons for this include lack of commitment of some marine police officers (Kigombe), the withdrawal of marine police during May due to financial constraints and exploitation of legal weaknesses by offenders. Five boats have been confiscated by the patrols (4 in Kigombe and 1 in Mwambani).

This decreased dynamite fishing has already had impacts on fish catches. Evidence from the fish catch statistics in Kigombe indicate an increase in the weight (approximately 10%) of fish caught per fisher in the period October-December 1996 compared to the same period in 1995.

Table 6. Number of dynamite blasts per month at the 3 pilot villages.
 Before data is based on villagers' estimates, and current level from patrol logs.

Village	Before Patrols	Current Level
Mwambani	25	6
Kigombe	20	4
Kipumbwi	5	1

Lessons Learned

- Village-based patrols seem to be effective in reducing incidences of dynamite fishing. However, they can only effectively enforce within approximately 10 km radius of their station. Improved enforcement along the periphery of patrol areas may be realised through the use of radio communication to coordinate the activities of adjacent patrols.
- The experience gained from Mwambani and Kigombe has shown that villagers are more effective in controlling offenders from within their own village (Mwambani) rather than those from other villages (Kigombe).
- The performance of fisheries officers seems to have improved with the payment of allowances and the participation of villagers. To date there have been no complaints about the performance of these officers.
- Villagers have repeatedly stated that they would be prepared to conduct patrols if they receive militia training. Militia training for villagers was organised in phase I, but was not completed.
- Villagers' expectations of what government officers can do are too high. They do not readily recognise the limits on the use of firearms and the detainment of known dynamite fishers without the required evidence.
- There is confusion about what procedures are to be followed when making arrests or when boats refuse to stop. Clear guidelines on arrest procedures for villagers and police as well as training on how to implement those guidelines need to be developed.
- Costs of the patrols that use marine police have to be reduced to ensure long term sustainability.
- A test at Kigombe showed that fish catch records indicate that not all potential revenue from these catches is actually being collected by the District, but that there are possibilities for financial sustainability.
- It appears that only boat owners have licences for fishing, whereas, all fishers are required to have licences. Thus, licences figures cannot be used as accurate guides to monitor the numbers of fishers.

- The use of log books to monitor the effectiveness of patrols seems to have improved the effectiveness of the patrols. This information has been used to check out accusations made about poor performance. Examination of the log books at Kigombe was a key factor in addressing the problems with patrols there in early February. Furthermore, these logs provide a clear record for the use of supervisory government staff (e.g. the District Fisheries Officer and Officer in Charge of Marine Police) who may wish to evaluate the performance of their officers in the field.
- The use of formal agreements has ensured that each of the collaborating parties was clear on their role and responsibility. This has ensured the smooth running of the patrol activities.
- A consistent level of effort needs to be maintained to effectively control illegal fishing activities. Users of illegal fishing methods seem to be able to exploit any weaknesses apparent in the enforcement system.

6.7 District governments actively support collaborative management with village government

District technical teams have reviewed proposed village by-laws and management agreements for reefs and fisheries of Kigombe and Kipumbwi. These then pass through standing committees and finally unto the full District Council. If support is expected for these initiatives, then all these players must have a clear understanding of why these initiatives are necessary. For this reason, training and awareness activities have been undertaken with these players (see section 6.4 above). All three pilot villages have had their by-laws approved by District Councils. The two fisheries management agreements have been approved by the relevant committees and by the District Councils of Muheza and Pangani.

Current district by-laws do not have an adequate coverage of environmental issues. However, their review has not been completed by district technical teams. Programme will need to facilitate these reviews, perhaps by working with other districts who are also undertaking such reviews (e.g. Ulanga District).

Lessons Learned

- Village by-laws are proving to be effective and rapidly implemented ways of publicising and reducing damaging actions.
- District by-laws have to undergo a longer approval process (through central government). An effective means of publicising them will also have to be found.
- Training and awareness activities need to reach all government officers and elected representatives who will have an influence in approving Programme initiatives.
- Government officers have shown keen support and interest in actions and processes which actually show noticeable outcomes. Site visits are critical to show results and to discuss issues with the village resource users.

6.8 Community development fund stimulating more sustainable use of resources

Approximately TSh 10,000,000/= was provided to villages (outside of the pilot villages) through a Community Development Fund, administered separately by the three districts. Two of these gave grants to a small number of groups who had already raised some funds for their own projects. The third district provided loans to a larger number of individuals and groups. The provision of grants proceeded quite quickly but the loan system proved complicated and by May 1997 none of the monies had actually been paid out.

An evaluation of this fund was conducted in January 1997 (Kobb 1997) and concluded that it had not been a very effective means of achieving the Programme's objectives. That evaluation recommended that direct assistance to villages be limited to the following:

- assistance to villages for the implementation of action plans to address priority issues;
- funding trial alternative activities which are innovative and risky;
- assistance to private individuals in developing markets for alternative products such as mariculture;
- exchange programmes for people to change from destructive gears to more environmentally friendly.

The first two of these recommendations were used within phase 1. The third recommendation, assistance in developing markets, cannot readily be added, because the necessary expertise is not present within the Programme. The fourth for gear exchange programmes will be considered as part of an overall fisheries management strategy (see section 8.8).

Lessons Learned

- Credit is difficult and the technical skills required to administer it are not present in the districts. Grants appear to be less difficult to administer in that they do not require chasing after repayments.
- There is some opposition to grants among certain government personnel, on the basis that it is not good to give away money. This could be overcome by linking grants to the completion of certain tasks and contributions by villagers.
- The Community Development Fund was intended to support alternative activities but in reality it was used to support activities that are already on-going. Such a fund cannot promote alternatives until they have been tested for feasibility and have markets for their products.

6.9 Submissions made to national authorities for policies and legislation to support regional Programme activities

Central government agencies have been kept informed of Programme activities, through quarterly progress reports, periodic briefings and annual technical workshops. The latter have been particularly successful in promoting interactive discussions on the issues faced in Tanga Region. A lot of interest and some commitments have been generated in central government

agencies. Further follow-up by Programme staff is needed to ensure adequate responses to Programme's requests for assistance.

Submissions will be made on the Programme's experiences with establishing collaborative management in coral reef fisheries and mangrove management. A third submission to National Environment Management Council (NEMC) on establishment of a regional development plan and use of environmental impact assessments was originally planned. However, the Programme did not develop any expertise in this subject during phase 1.

The submissions include both proposed management plans and recommended guidelines for how to develop such plans. Drafts only of these submissions are available at the end of phase 1, as they still await further refinement (in the case of the mangrove plan) or approval through the districts (in the case of the reef fisheries plans). Actual submissions will have to be made in the first quarter of phase 2.

Lessons Learned

- Government policies can be strengthened by looking at what is working in pilot villages. Technical workshops with field days are an effective way of bringing field examples to attention of central government departments.
- Regional staff need to closely follow-up on actions requested of central government agencies. Regular briefing sessions with them are also required.
- Lack of a confirmed policy at central government level need not prevent the development of new approaches. If successful, they can indeed form the basis of a new policy (e.g. gazettement of artisanal fishing zone).
- Secure access to resources is a crucial issue in collaborative management of mangroves, forests or woodlots. Current policies or practices often do not provide adequate security for village resource users.

6.10 Phase 2 implementation plan and integrated strategies for improved coastal management

The Programme did not attempt to develop a fully integrated management plan for the Tanga Region. Recognising the limited experience and skills of existing government staff in coastal management, a simplified approach was taken. Only a limited number of critical issues were dealt with, and in only a few pilot locations. In this way, participants' skills, experience and confidence were developed during the three years of phase I. A further three years may still be needed to continue this work, bringing in more government staff and local resource users, and refining processes developed in phase 1. A fully integrated management plan for the Tanga Region may eventually grow out of this process. If it does, then that plan is likely to truly be a product of local players, rather than a product primarily by expatriate advisors. If a regional plan does not evolve, many coastal management issues will still be effectively addressed.

Phase 2 will have the same basis as phase 1, establishing collaborative management between local government and villages. It will refine the procedures and processes tested in phase 1 and complete those that were not finished (e.g. mangrove management agreement approved by Director of Forestry). It will also expand into more villages. This may also mean expanding into new environmental issues, as it is the villagers themselves that determine which issues they are prepared to act on. Cost-sharing mechanisms will be tested out for activities such as law enforcement. More district technical staff will be trained in the basics of programme planning, facilitation and animation. The objective is to improve upon and build upon the number of government staff with improved technical and professional know-how, and to make the Programme more efficient, as well as effective. Full details of phase 2 are presented in section 7.

Lessons Learned

- Phase 2 will build upon the strengths of phase 1, completing unfinished agreements, dealing with unresolved issues, and improving efficiency of existing procedures.
- It will expand into new villages.
- Details of phase 2 were compiled by a planning team, with representatives of all Programme partners. The team used the results which were developed by districts and the region. These included the results of discussions and workshops of villagers and district field workers and included their recommendations.
- The phase 2 proposal was reviewed by the annual regional workshop and regional steering committee and received their approval.

6.11 Participatory appraisals to establish monitoring baselines of coastal resources

Some government staff were trained in participatory techniques and others were trained in rapid resource appraisal techniques. Separate teams then surveyed all 93 coral reefs, 11 coastal forests, and nearby villages to determine state of health of coral reefs and forests, and the uses made of these areas by nearby villages. A further team visited 9 coastal villages to establish socio-economic status of these villages. Their findings are given below.

1) Coral reefs and fisheries

A new rapid assessment procedure, orientated for management, was designed for this activity (Horrell 1995). Information to be collected was identified through an analysis of management priorities. Identified indicators were grouped under:

1. the names, location, type and size of reefs including local names;
2. health of reefs;
3. estimates of target species densities;
4. types and levels of use, e.g. what resources are used, who uses them, how important are the resources to the user and what are the use trends;
5. identification of issues and potential solutions as perceived by resource users;
6. indirect impacts, e.g. land and sea pollution sources, sedimentation;

7. legal and policy framework, including whether management specifically addresses any of the issues found in 4 and 5 above;
8. indigenous management systems, including whether they address issues identified in 4 and 5;
9. indigenous knowledge.

Collection of this information required the use of participatory appraisals as well as more conventional bio-physical observational techniques. Two teams of personnel were used. Six government officers were trained in bio-physical survey techniques and two in participatory rural appraisal. The participatory appraisals were conducted before the bio-physical survey to enable the participation of key informants in the latter. The use of two teams often proved to be cumbersome and created problems with communication.

Ninety-three reefs were identified and mapped including 14 which had not previously been charted (Fig. 3). Fifty-four per cent of reefs were surveyed to assess health, 85% were surveyed for fish community structure and 94% for coral diversity. Reef formations found were coastal fringing reefs, inner and outer (adjacent to continental shelf) patch reefs. The placement of the reefs indicates a barrier reef system. Approximately 686 km of reef edge was mapped. This figure is the combination of the total coastline (407 km including coastal reefs) and the inner (53 km) and outer patch reefs (226 km). Of the 407 km of mainland coast, 97 km is living coral reef with 111 km of non-living reef. Full details are in Horrill (1997).

Approximately 10% of reefs are completely destroyed, 20% in "good" condition, with the remaining 70% in poor-moderate condition. Fish densities in all but 10% of reefs are relatively low (see Fig. 4). Coral diversity is highest on outer patch reefs (median value 27 genera, maximum 39); coastal fringing reefs and inner patch reefs have about the same number of genera. Both coastal and inner patch reefs are influenced by high sediment loads. Highly damaged reefs have very few genera, e.g. Nyuli (8) and Ras Nyamakuu (4) (see Fig. 5).

A well developed local naming system exists for reefs or sections of reefs. All reefs are exploited by local communities. Main activities are fishing for finfish, octopus and lobster collection. Some reefs are extremely important for all types of resource use. Others vary in their importance to different types of resource use. No system of indigenous management was found, although knowledge of the reefs is high. For example, some villagers know that coral is living and is often called *matumbawe* not *mawe* (stones). One villager had transplanted corals. Important areas for different fish species are known. Use trends are driven by market forces, e.g. the development of tourism in Kenya has increased the demand and price for lobster. Many fishers now dive to capture lobster rather than fish with handlines or madema traps.

All communities recognise that dynamite and seine net fishing are destroying the reefs. There is considerable agreement between villagers as to major issues, i.e. destructive fishing (dynamite, poisons, juya and kigumi), too many fishermen for too few fish and lack of alternative income sources. There is a similar consensus about management solutions, especially for strict enforcement against destructive fishing techniques and development of alternative gears and income sources.

2) ***Coastal forests***

Appraisals were made to provide an overview of coastal forests in Tanga Region (full details are in Nurse 1997a). Rapid assessments were made of the forest resources in 11 forest patches and their adjacent communities. Key issues for the management of coastal forests and information elements needed for addressing these issues were identified during a one-day workshop with regional government staff. The key issues are:

- There is no specific programme for collaborative (community-based) management of coastal forests;
- Government has limited capacity to effectively police coastal forests;
- There are no resources identified for habitat restoration or development (e.g. plantation activities ceased in 1992);
- There are severe threats to coastal forests from uncontrolled wild fires, encroachment, charcoal production, evaporative salt production, lime production, fish smoking and illegal commercial harvesting of timber products.

Key information elements needed to address these issues, with their indicators are:

- *Collaborative forest management status:* indigenous management system functioning now or in the past, forest boundary status, status of use rights, level of disputes, impact of use on forest, level of interest in joint management.
- *Habitat status:* location, main vegetation type, forest condition, catchment condition, conservation status, threats.

Eleven forests were visited along with their adjacent communities. Examples of completed assessment forms are given in Appendix 8. Summary of results for seven forests are given below in Table 7.

These surveys showed evidence of some form of indigenous management system in five forests. The organisational basis for this management varied. For instance, in one case (Kwadilomba) it is based on protection as a sacred grove for spiritual worship. In several other cases (Bwitini, Bwiti Movovo, Mwanyumba), management has been founded by village government, complete with recognised boundaries, membership and rules. Most villages indicated a willingness and capability to take responsibility and authority to manage their nearby forests, in partnership with government.

Many of the forests visited (especially Kilulu, Bwitini and Kwadilomba) were in very good condition and large enough to provide viable habitat areas for regional and local endemic species. They are also not under severe threat from commercial use or encroachment. One forest (Kibubu) is under severe pressure and is considered as high priority for improved management action.

Figure 3. Reefs of Tanga Region

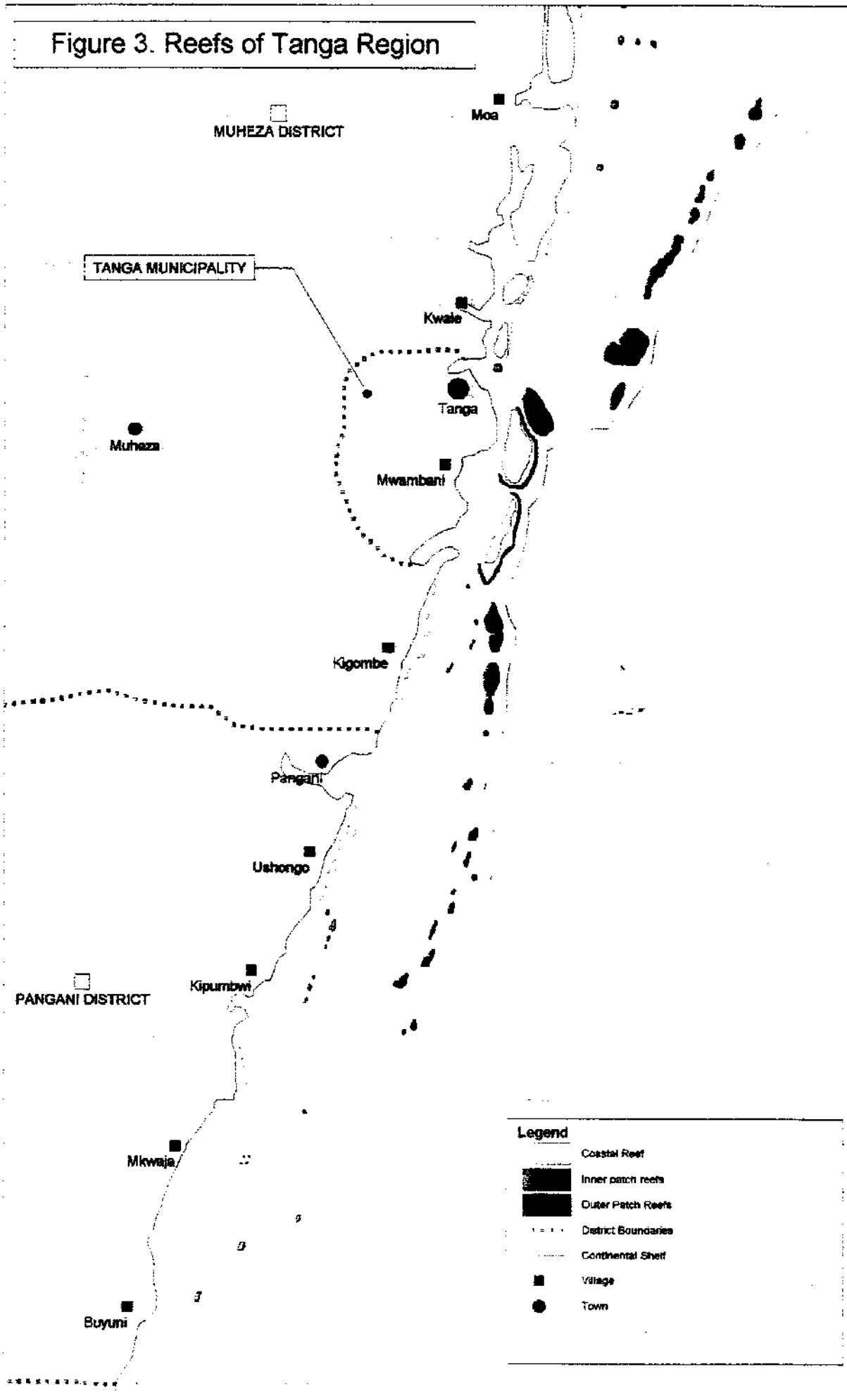
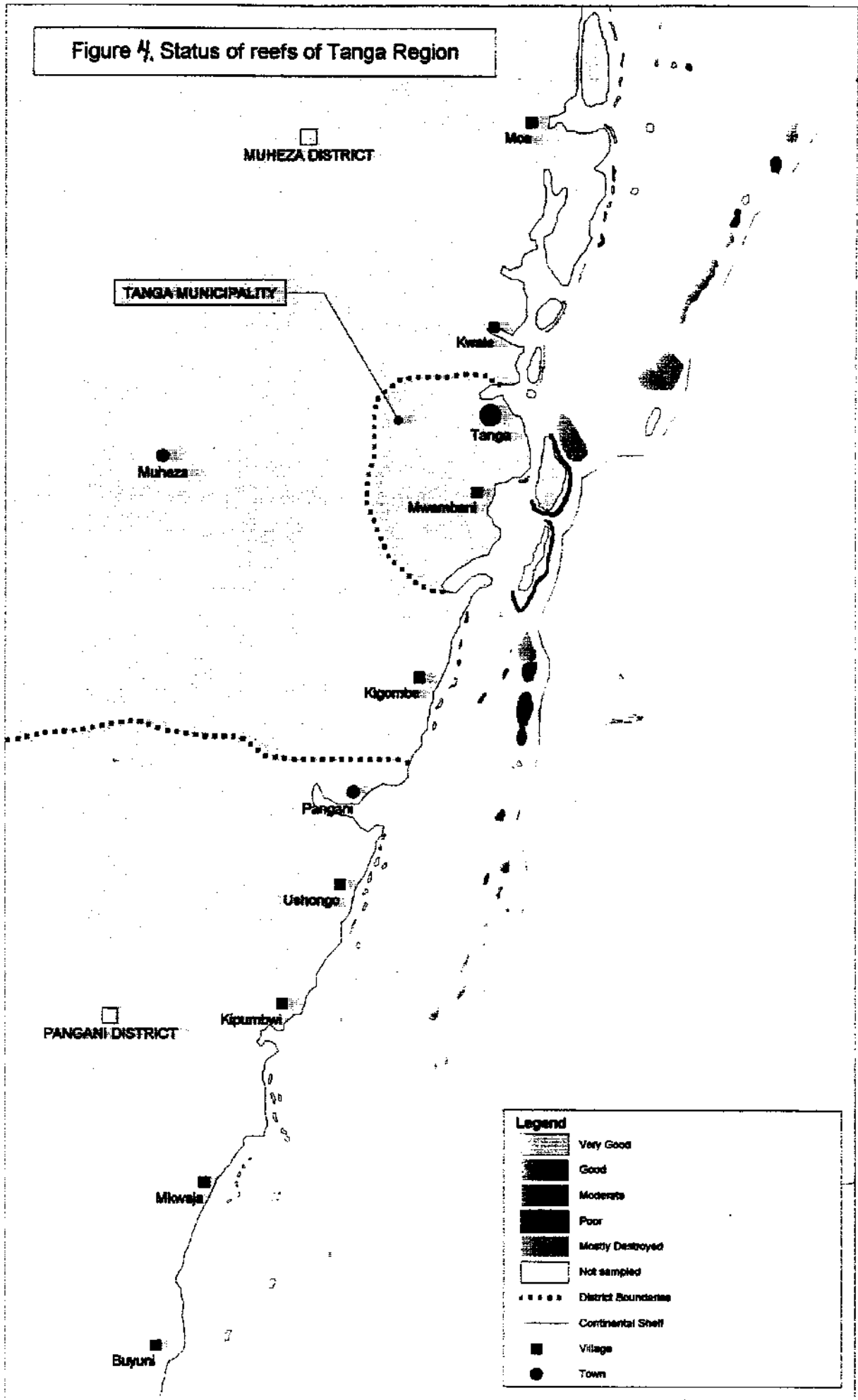




Figure 4. Status of reefs of Tanga Region



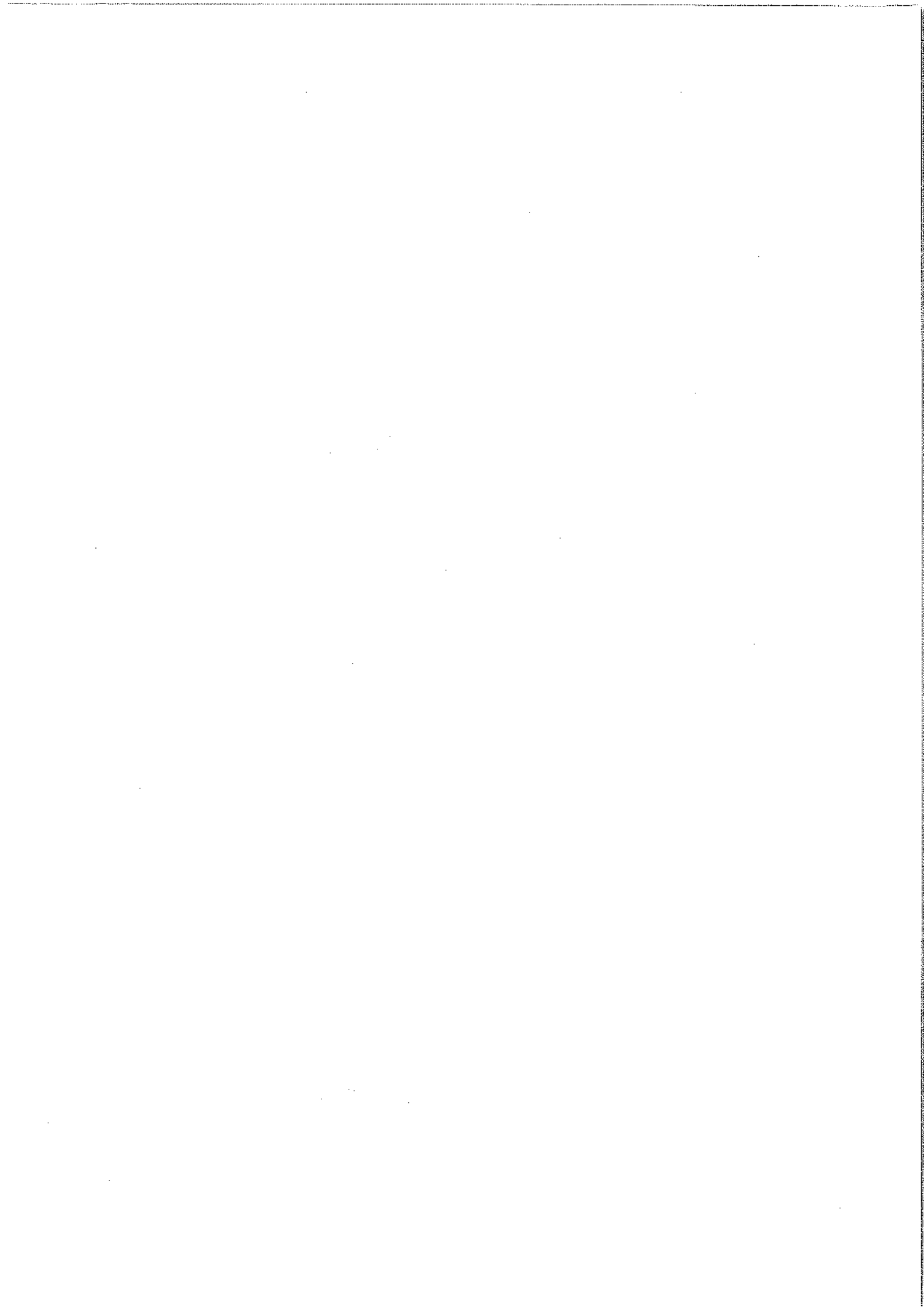
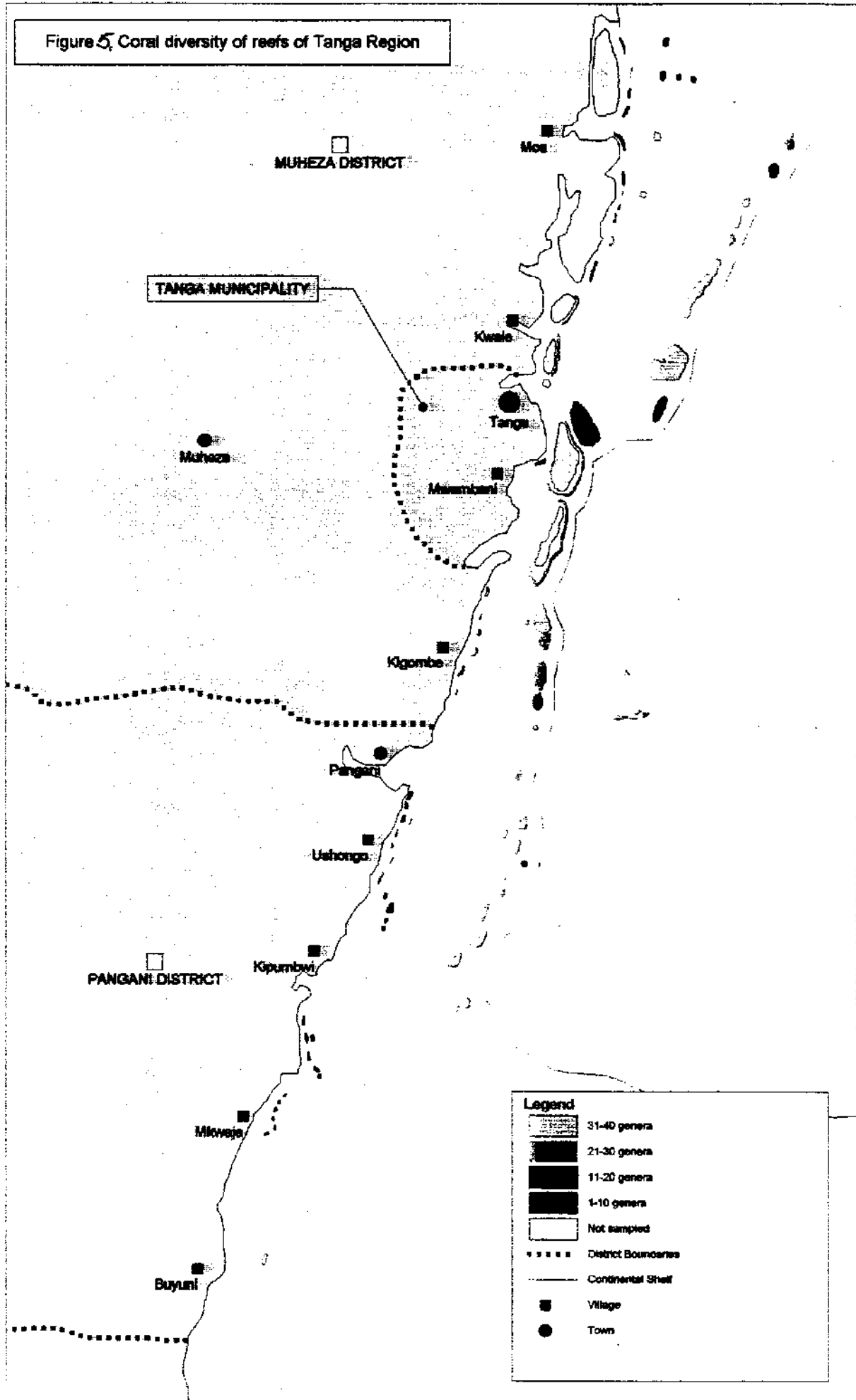


Figure 5. Coral diversity of reefs of Tanga Region



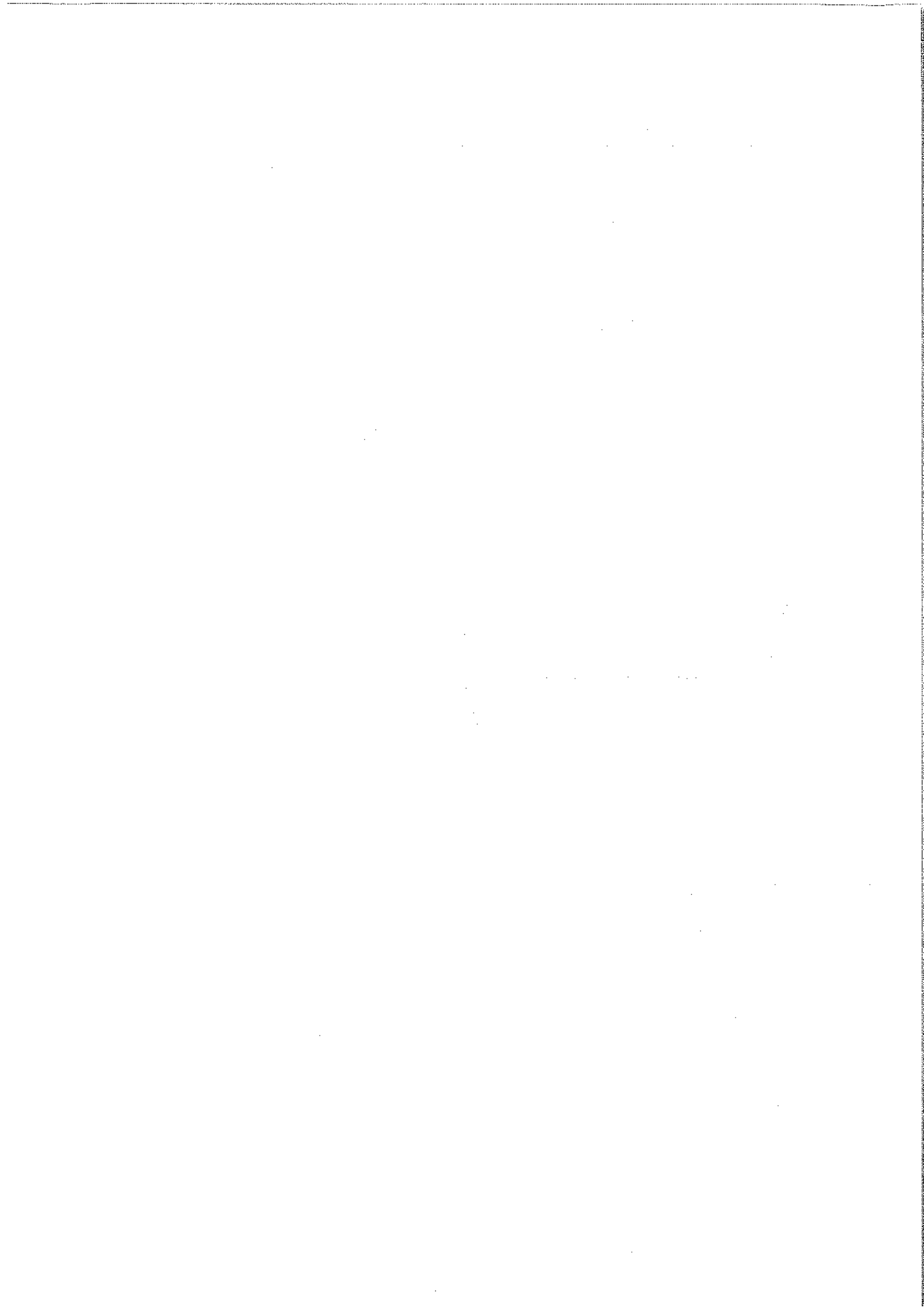


Table 7. Summary of the Key Elements from the Case Studies

Forest name area (ha)	Information from village profile					Information from forest profile						
	Indigenous management system ?	Boundary conflicts?	Domestic use?	Commercial use?	Interest in joint management	Main habitat type	Forest condition	Conservation value	Threats	Future management	Priority for further work (reason)	
Kilulu 100-200	yes (weak)	no	yes	low	medium	forest + shrub	v. good - average	high	medium (encroachment)	conservation reserve or community forest	high (conservation status)	
Kole Kole 300	no	no	yes	yes	medium	plantation + forest	v. good	low - high	low	Production reserve or community forest	low (plantation)	
Kibubu 4806	no	no	yes	very high	high (scarce resources)	forest	v. good	high	high (commercial use)	community forest	high (threats)	
Bwiti	yes (strong)	no	yes	no	high (indigenous system)	forest	very good - poor	high	low	community forest	medium	
Bwiti Movovo 12000	yes (strong)	no	yes	very high	very high (indigenous system)	degraded forest	poor	low	high (commercial use)	community forest	high (indigenous system)	
Kwadi-lomba	yes (very strong)	no	no	no	very high (traditional system)	forest	very good	high	low	traditional forest	low (threats)	
Mwan-yambo 9900	yes (strong)	no	yes	very high	very high (indigenous system)	degraded forest	poor	low	high (commercial use)	community forest	high (indigenous system)	

The information obtained from the surveys was compiled together into three district registers. This will allow district staff to monitor progress in resource assessment, collaborative forest management and other work activities in the districts. It can also be used as the basis for developing district strategic programmes for forest management in phase 2.

3) Socio-economic baseline

The Programme conducted a participatory socio-economic study in early 1995 to learn about the stakeholders of Tanga's three coastal districts, what their resource use patterns were, and particularly to learn what the priority environmental issues were (Gorman 1995). This study helped to direct the priority issues which the Programme dealt with in phase 1. It also highlighted indicators which were re-examined in early 1997 within the three pilot villages to monitor changes in these priority issues. While it was too early to expect any major changes, this re-examination did reveal some positive trends. Table 8 below shows the comparison of indicators from 1995 and 1997.

Artisanal fishing in Tanga is coral reef based and mostly occurs near to shore. The majority of fishing vessels are ngalawas (dug outs with outriggers) which limit the effective range of the fishermen. The most common fishing gears are hand lines, traps and gill nets. A smaller number of seine nets are also used with the larger boats (mashua and madau). The incidence of illegal fishing with dynamite was very common in 1995 although the number of people involved were a minority. Most fishing boats are owner operated. For the larger seine net operations crews of about 20 fishermen are required. In such cases the income is divided half and half between the boat owner and the fishermen. Fishing is mostly carried out by men although a small number of women do fish in the shallow water for shrimp (uduvi), as well as collecting octopus and molluscs at low tide. In 1995 many fishermen commented that while fish catches had markedly declined fish prices had increased greatly. A number of commercial trawlers are licensed to operate in Tanga's waters. There were reports from local fishermen that these trawlers often fish inside of the 15 km limit and, as well as depleting the fish stocks, have caused damage to local nets.

In early 1995 mariculture had not really developed along Tanga's coast. However seaweed farming had recently been introduced on a trial basis and the indications for its success were good. About 4 villages were involved at that stage, in cooperation with a commercial company which buys and markets the product. Mostly women were involved. In early 1997 seaweed farming had spread to 35 villages and while women comprised the majority involved, there was a significant number of men also involved.

The mangroves of Tanga's coast have been subjected to severe depletion in recent years. In the 1995 assessment concern was expressed at the erosion threat to settlements which no longer have adequate mangrove protection. Salt boiling had been a very heavy consumer of firewood and was blamed as the main cause of this depletion. Foreign pole cutters from Zanzibar were also reported to be heavy consumers. Indications in early 1995 were that the number of salt boilers was reducing and this trend continued in early 1997. A lot of concern was expressed over the lack of regulation on tree cutting. In early 1997 within the pilot

Table 8. Summary Table of Socio-Economic Indicators and their changes from 1995 to 1997 in pilot villages

Result	SES Indicator	1995 status	1997 status
A3: Regional, district and village personnel running resource management activities through the Programme.	<ol style="list-style-type: none"> 1. Community perceptions about cooperation with government 2. Perceptions of elders on their authority to deal with destruction 3. Level of community organisation 	<ol style="list-style-type: none"> 1. Perception that resource management is govt responsibility & that govt does not assist them 2. Perception that elders have lost authority 3. Community organisations weak <p>History of failed projects</p>	<ol style="list-style-type: none"> 1. Improved relationships but still some problems 2. No perceived change in authority of elders 3. Good community organisation but room for improvement
A4: Streamlined prosecution system for control of illegal use or harvesting of coastal natural resources	<ol style="list-style-type: none"> 1. Prosecutions for destructive practices 	<ol style="list-style-type: none"> 1. Poor prosecution record. Many cases progressing slowly 	<ol style="list-style-type: none"> 1. Improvements but still slow. Increase in recent fines
A5: Pilot villages empowered to control destructive and illegal practices	<ol style="list-style-type: none"> 1. Community perceptions about levels of destruction 	<ol style="list-style-type: none"> 1. High levels of destruction and increasing 	<ol style="list-style-type: none"> 1. Perception that levels of destruction are decreasing since Programme started
B2: Working examples of coral reef management established	<ol style="list-style-type: none"> 1. Fish Catch Statistics 2. No. of fish mongers (men & women) 3. Fishing gear statistics 4. No.s of fishermen 	<ol style="list-style-type: none"> 1. Declining 2. Large no. of women especially. 3. Seine nets prevalent 4. Large no. fishermen in each pilot village (few alternative occupations) 	<ol style="list-style-type: none"> 1. Kigombe shows increased catch per landing. Some data unreliable 2. No apparent change 3. No apparent change 4. No reliable data to indicate change
B3: Working examples of management of mangroves established	<ol style="list-style-type: none"> 1. Forest department statistics for mangrove poles 	<ol style="list-style-type: none"> 1. Stats for Mheza and Pangani show Pangani with high pole cutting. 	<ol style="list-style-type: none"> 1. Reliable data now available but unable to compare with old figures

Tanga Coastal Zone Conservation and Development Programme - Phase 1

Result	SES Indicator	1995 status	1997 status
<p>B4: Working examples of management of coastal forests and wildlife established.</p>	<p>1. Village perceptions of vermin problem 2. Statistics for charcoal and timber 3. Source of domestic fuel wood 4. Time collecting fuel wood 5. Existence of woodlots for fuel</p>	<p>1. Problem is serious and no action being taken 2. For Muheza and Pangani 3. Exclusively farm & bush land 4. Frequency 2-3 days 5. Study villages had no woodlots</p>	<p>1. Actions have been taken but with little effect 2. Reliable data not easily available 3. No change yet 4. No change (fuel efficient stoves being introduced) 5. Womens woodlot to start Kigombe</p>
<p>B5: Working examples of new coastal resource uses for economic diversity</p>	<p>1. Ranking of village economic activities (men & women) 2. No. involved in seaweed farming 3. No. & area of solar salt pans 4. No. salt boilers</p>	<p>1. Fishing is most nb activity. Non-sustainable activities quite common. Womens opportunities limited to small numbers in few villages 2. Seaweed farming limited to increase. 3. Area has and is continuing to increase. 4. 1993 figures show decrease from 1989</p>	<p>1. Only notable change in Mwambani where seaweed farming now very important 2. 35 villages and 1075 farmers now involved 3. 6 new solar salt pans 4. No. salt boilers still decreasing - now 79</p>
<p>B6: Working examples of beach pollution control in place.</p>	<p>1. No. latrines in villages 2. Incidence of diarrhoeal disease</p>	<p>1. No.s for Kipumbwi & Tanga. Low coverage 2. 10-25% of diseases treated in health centres</p>	<p>1. Small increase as cheap latrine technology is introduced 2. No notable change.</p>

villages, people felt that unregulated cutting of mangroves had stopped.

In 1995 discussions were held with groups of elders in each of the study villages about traditional systems of resource access and management to see whether aspects of traditional management still operate and whether there might be scope to strengthen certain aspects to improve sustainable resource management. Traditional leadership is vested in the elders of the various clans or kinship groups. This role has been eroded gradually under various government administrations. Ownership of land is still related to ownership of permanent trees such as coconuts. Islamic inheritance laws still operate. There is no apparent tenure system for the sea or marine resources. There were many examples of traditional beliefs in spirit protection being used to protect natural resources such as forests, but elders lamented that the young people no longer hold the old beliefs.

A separate consultancy was conducted on traditional management in early 1996 (Scheinman and Mabrook 1996). It concluded that while there is a lot of traditional knowledge applied to the extraction of resources, there is no traditional strategies applied for their management. It attributed this to the low population density of the coast allied to a rich endowment of natural resources. However it highlighted that traditional forms of social organisation exist, and that aspects of these could be strengthened to enable coastal communities to manage their own resources. To do this, government would be required to provide a supportive legal framework, and assist with law enforcement.

The 1995 study showed a very clear understanding among the coastal villagers of the inter-relationships between users and the different coastal resources. They were very aware of the pertinent issues and the causes of the problems they faced. They had very practical ideas about what needed to be done but in early 1995 felt unable to overcome the obstacles. As the coastal economy is highly dependent on fishing, many people felt that the future for their children was very uncertain if the present levels of destruction continued.

The early 1997 study in the Programme's pilot villages showed a strong perception that there has been a decrease in the level of environmental destruction over the past two years. This has come about through community organisation to plan and implement solutions to their problems, and also due to improved cooperation with government authorities. The establishment of patrols was considered a major factor in stopping destructive practices.

The 1995 study tried to determine the factors which might influence any future development of alternative activities in the coastal villages through analysis of previous projects which these villages had experience of. A number of critical factors were thus identified and included leadership / accountability; control and ownership; trust and cooperation between those involved; planning and preparation; supervision and follow-up; availability of inputs; markets for products; technical and managerial knowledge and skills.

Lessons Learned

- Reorientation of government staff is important in enabling them to build rapport with villagers. Training government staff in participatory rural appraisal so that they could conduct the socio-economic study was a very useful step in improving relations between them and the villagers. This training took one week. By learning from and with villagers their respect for the knowledge of the villagers was increased and villagers likewise were heartened that these government staff wanted to listen to them and learn from them.
- Forestry and fishery staff require training and reorientation in participatory methods.
- Participatory socio-economic and resource assessments at the beginning form a good foundation for starting work in a particular village as they help people clarify the critical issues, and identify their priorities.
- The population within any coastal village is not homogenous. While very few people could be considered 'wealthy' there are those whose livelihood is more secure, and there are vulnerable groups and people who depend on the charity of others. Often it is the better-off who become active in development projects as they may have more time, or be more confident. The priority issues of those who are very poor may differ from those who are better off. The use of wealth ranking and poverty profiling can help identify the poorest and what their priorities are.
- Socio-economic and resource assessments need to be gender sensitive and recognise that the resource uses and activities of men and women differ as do their access to and control over resources. Their capacities and vulnerabilities also differ. Assessments should profile these differences. Gender disaggregation of data will enable the impact of actions on both men and women to be monitored.
- Participatory surveys provide a means to fully involve interest groups. Survey is the initial stage of the planning process. Community members who participated in surveys advised other users and village management committees on reef status during the planning process. This has also stimulated villagers to establish their own resource assessment teams and their own enforcement systems.
- Rapid appraisals produce critical and sufficient information for management, but require calibration with long term studies.
- Management issues identified at community level do not differ markedly from those given by government or technical specialists. Community-perceived issues, their causes and solutions have been used to define overall objectives, results and activities for management action planning in pilot villages.
- In the coral reefs and forests surveys, the team was split between those investigating the villagers and those investigating the resource. But to facilitate validation of information obtained, these two aspects should be done by the same team.
- Semi-structured interviews, focus group discussions, participatory mapping, and ranking proved to be the most useful tools. It was necessary to continuously monitor and modify these tools during the assessment to check that they were yielding the required information.

- In using rapid assessment techniques it is necessary to validate findings by triangulation, i.e. using different methods to corroborate findings. Secondary sources of information, statistics and direct observations are very useful and independent of villagers' perceptions.
- Selecting useful socio-economic and biophysical indicators which can be reliably measured at a later stage is difficult. To be really useful indicators need to be closely linked to the objectives of management.
- Some form of indigenous management system was found in several forest areas. This contrasts with the lack of management systems found for marine areas.
- Village boundaries often correspond to forest use boundaries. Therefore, conflicts with village boundaries need to be resolved early when attempting to establish management systems.
- Accurate positioning of forest boundaries was difficult without recent aerial photographs. (These were made available too late to be used in the surveys.) Because of the size and poor accessibility, GPS units were not efficient for the larger forests.

6.12 Working examples of coral reef management established

Information on reef health, target species status, importance of reefs to different users and target species was collected in the baseline surveys. This information was used to formulate reef and fisheries management in two villages. Management actions include enforcement of regulations against destructive fishing, reduce legal but destructive gears, closure of reefs to all extractive use, reduce fishing pressure and development of alternative fisheries.

Fisheries management plans were formulated for Kipumbwi and Kigombe. The process used is summarised in Box 1. These steps were achieved through a series of meetings with the resource users in the village. Minutes of all meetings including attendance were recorded. Overall attendance in meetings was high although many more men than women attended. A separate study showed that most villagers in Kigombe and Kipumbwi are aware of and support the action plans (Gorman *et al.* 1996a).

An example of the Kigombe plan is given in Box 2. Both plans address declining income from fisheries which was the major concern of villagers. The overall objective reflects this concern, i.e. increased income from higher fish catches. Each plan also recognised the need to increase reef fish stocks. This is expected to be achieved through conservation measures and reduction of fishing pressure on reef stocks through the diversification of fishing activities and the reduction of the numbers of fishers. Key result areas are:

- 1) the reduction of illegal fishing (enforcement of existing regulations);
- 2) reduction of legal but destructive techniques;
- 3) closure of reef(s);
- 4) trials of fish attracting devices; and
- 5) reduction in fishing pressure through control of the numbers of visiting fishers.

The objective, purpose and all results have objectively verifiable indicators.

Box 1. Collaborative Fisheries Management: A Summary of the Process

The process leading to the formation of a management partnership between local communities and government in the management of common property fisheries are as follows:

Stage one: Initial training of staff and rapid appraisal surveys (covered in section 6.11)

Stage two: Detailed resource assessment and investigation of management organisation

- Further work was undertaken in pilot villages, where extension workers had already established their presence and role in facilitating villagers.
- Coral reef survey information was fed back to all users. Information included reef status, fish population status, coral diversity, which villages use the reef, importance of reef for different fisheries, fishing gears and fish species. Users discussed, modified, and/or agreed the presented information.
- Users formed a management committee to deal with their main issue of fish scarcity. This committee developed management proposals, but need to discuss any proposals with all fishers and fish traders in own village and all fishers in adjacent villages. All revised proposals must pass through village assembly.

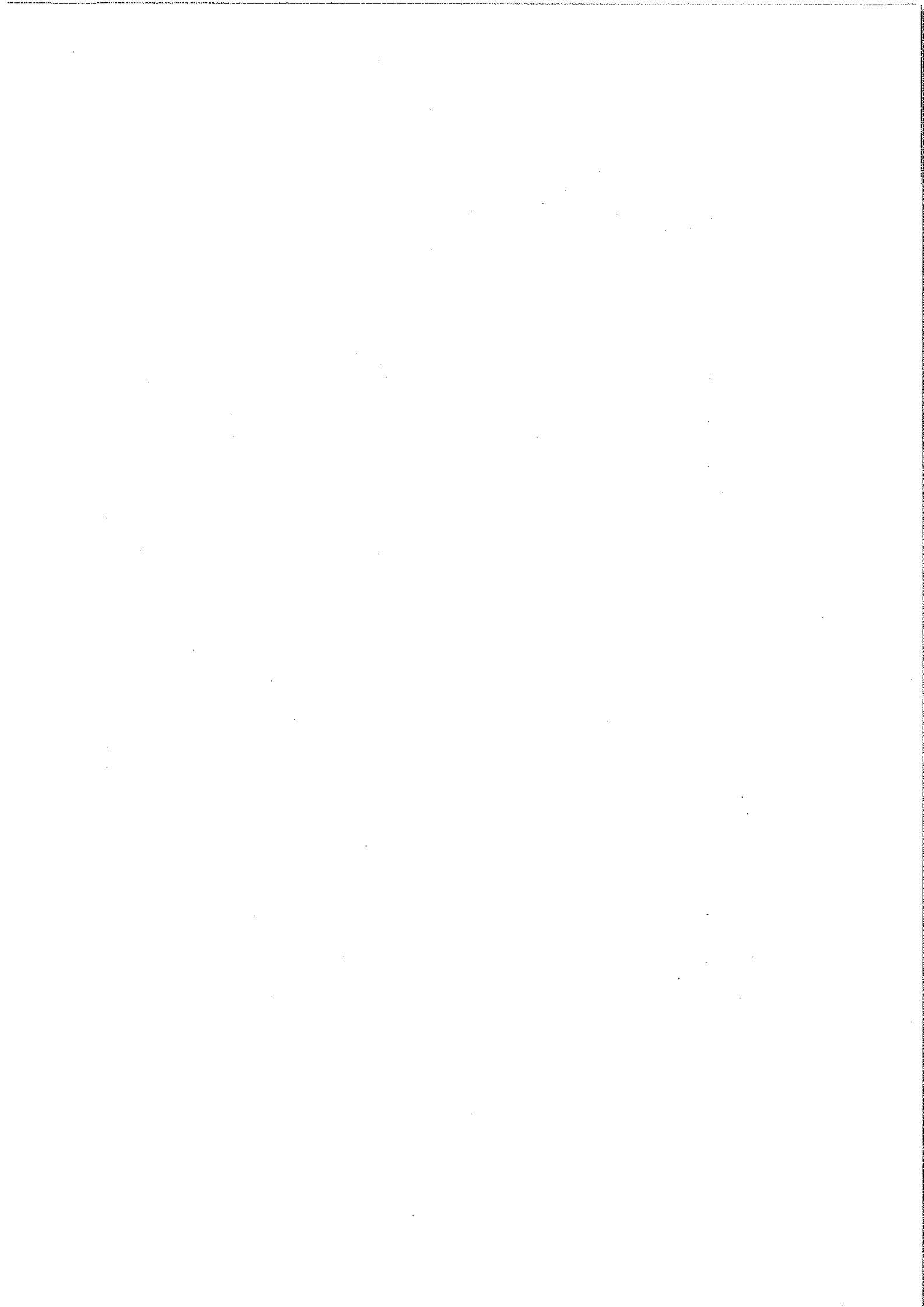
Stage three: Negotiation and implementation of management agreement

- Committee developed the principles of management, overall management objective, purpose of the action plan, results and indicators.
- Users defined the area in which management action will be implemented and who needed to be involved.
- Users identified, analysed and agreed actions to be taken to meet results. Actions discussed and agreed included: reef closure; special rules to apply to closed area(s); general rules to apply to the larger area; and other actions to support management objectives, i.e. trial of fish aggregating devices, trial of exchange of seine nets, and identification of future actions for control of trawlers.
- Committee defined how rules will be enforced, who will do what, what are the penalties, and what training is required for effective enforcement.
- Committee defined a programme for monitoring and review including who will do what and what training is required.
- Committee identified who should be informed and how this will be done. In meetings with the villagers and village governments of adjacent villages, the village committees presented their management objective, results and actions (particularly the closure of reefs). All surrounding villages approved and supported the closure of these reefs.
- Draft plans presented to meetings of all users and village governments for final approval before submission to the districts.

At Kipumbwi the villagers have decided to close Dambwe reef which is a large reef in good condition adjacent to the continental shelf. Kigombe villagers decided to close two reefs, Upangu and Kitanga. The former is an inner patch reef whilst the latter is a coastal reef. Reefs were selected for closure using pair wise ranking. Criteria identified by villagers and government officers included reef condition, number of fish species, fish density, ease to patrol, accessibility for older fishers and position relative to currents and other reefs.

Box 2. Objective, purpose and results from Kigombe fisheries management plan

Overall Objective	Indicator: Income and catch of resident fishers increased	Verification: Monitor fish catches for catch per gear per fisher, income earned
Purpose of Plan	Resident fishers income increased through increased fish catch.	Indicator: Increased stocks on all reefs within management area.
Results	1. Illegal fishing reduced	Verification: 1) Simple stock assessments of key species from catch statistics which record type and number of gears, area fished, species caught, number of fish per size class, weight of catch. 2) Visual assessment
Indicators	-Reduced number of incidences of legal but destructive fishing.	3. One reef closed to extractive use
Verification	-Reduced number of incidences of illegal fishing e.g. dynamic seine nets and sticks (Kigami), poison, spears and spear guns. -All vessels and fishers using area licensed. -Patrol logs which record number and type of complaints/reports of illegal fishing and action taken.	4. Trial of fish aggregating devices initiated
Assumptions	-Management controls in place. -Patrol logs recording number of reported instances and what action taken. -By-laws, regulations	5. Fishing pressure reduced by decreased numbers of visiting fishers
	-Exchange of small mesh nets for larger size mesh nets economically feasible (Killer) -Trawlers are a significant problem -Govt has political will to control activities of trawlers.	-No extractive use of closed reef -FAIDs in place -Catch information recorded -Reduced number of visiting vessels.
	-District Fisheries Licensing records. -Sufficient funds to continue patrols	-Site visit -Catch statistics -Catch statistics recording fishing effort of residents & visitors
		-Agreement on areas of use, use rights, maintenance and monitoring of effectiveness reached
		-Management measures approved by District Government (and Director of Fisheries)



Roles and responsibilities of villagers and government personnel are defined for each activity as well as the time frame in which they are to be achieved. Activities related to several results (1, 2 and 5) are ongoing. It is envisaged that legislation from the central Division of Fisheries to support the reef closures may come into effect after 30 June 1997. Each of the plans will be reviewed every six months. A monitoring and evaluation system has been defined to assist in the review process.

Part of the review included an assessment by fisheries management specialists, the Oceanographic Research Institute, Durban, South Africa (Beckley *et al.* 1997). They also recommended monitoring indicators, potential fisheries enhancement techniques suitable for Tanga, options for degraded areas and the feasibility of gear replacement.

Their main recommendations which the Programme is attempting to implement are:

- The collaborative route for coastal fisheries that has commenced in the pilot villages of the Programme should be actively pursued in Tanga Region.
- Fisheries reserves (areas permanently closed to fishing) should be used as the primary management tool in Tanga, so that at least 10% of the coral reefs are included. Reefs that are in good condition with some adjacent seagrass beds should have higher priority for closure.
- To reduce fishing effort on reef stocks the targeting of pelagic, migratory species should be promoted by assisting with the development and maintenance of experimental fish aggregating devices off the pilot villages.
- In the long term, alternative sources of income such as mariculture, agriculture and tourism should be developed by the people living along the coast, as it is likely that fishing will not be able to support increasing numbers.
- The Tanzanian government should be lobbied to legislate against the use of small mesh nets for demersal fish species.
- Detailed analysis of the data produced from the fisheries monitoring presents an excellent post-graduate training opportunity for a suitably qualified fisheries officer to pursue.
- Artificial reefs are not recommended for fisheries enhancement.
- Active restoration of degraded coral reefs is not recommended as an economically feasible option given the widespread degradation of reefs and prevailing economic conditions.
- The dangerous impression amongst villagers and government staff that gear replacement is a way of catching more fish rather than to fish in a more sustainable way should be dispelled before any attempt is made at gear replacement.
- Gear replacement as a management technique must be used with great caution especially if the costs are not internalised within the fishery.

Lessons Learned

- Process to develop fisheries management agreements is lengthy and requires many meetings with well defined agendas.
- Gazettement of closed areas may take considerable time as it has to obtain several approvals (village assemblies of most nearby villages, district standing committees, District Council, Director of Fisheries).
- Attendance of women at meetings was low especially in Kigombe. This may reflect the relatively low number of women involved in the fishery or be indicative of cultural practices. In Kigombe, women tend not to attend meetings with men. Some fishing groups are antagonistic to the presence of women.
- Despite some problems (e.g. the participation of women in Kigombe), the village committees provided a good starting point for the participation of users in the management process.
- Input of women to process was very practical and realistic.
- Timely technical input is required to assess available and best options.
- District staff require substantial technical support, as they are inexperienced in dealing with many of the management issues.
- Knowledge of reef and fisheries resources of villagers is high and exceeds that of some government officers.
- Villagers are prepared to deal with issues and implement solutions.

6.13 Working example of management of mangroves established

Kipumbwi has a large area of mangroves adjacent to it, which it shares with the nearby Sange village. All mangroves are under central government protection and are gazetted as forest reserves. Their management is controlled by the Mangrove Management Plan (Ministry of Tourism, Natural Resources and Environment 1991). Use is strictly controlled by forestry officers who issue permits to take products in a few defined blocks within the reserve. With the participation of the Mangrove Management Project in the Tanga Region, a pilot was commenced to manage some of this reserve collaboratively between government offices and the villagers of Kipumbwi and Sange.

The process to establish the collaborative management followed that outlined in Box 3 and detailed in coastal forest assessment consultancy report (Nurse 1997a). Kipumbwi was an existing pilot village under the Programme, so was familiar with participatory appraisals, action planning and collaborative management. However, Sange was not. Therefore, some time was spent in discussing these issues with Sange villagers. They elected to form a committee similar to that already in action at Kipumbwi. They also agreed that members from these two villages' committees should regularly meet together and possibly even form a coordinating committee.

Detailed resource and resource use assessments were undertaken with both Kipumbwi and Sange villagers. The procedure for collecting this information is summarised in Box 4. The results are mapped in Fig. 6 and Table 9. Up to 13 different locations were named, with users

Box 3. Collaborative Forest Management: A Summary of the Process

The process leading to the formation of a management partnership between local communities and government in the management of a common property forest resource are as follows:

Stage one: Initial training of staff and rapid appraisal surveys

- Initial reorientation and training of staff to introduce the concepts, reorient and provide skills to staff involved in collaborative management activities.
- Rapid resource assessment (forest and village profiles) to identify priority sites.

Stage two: Detailed resource assessment and investigation of management institutions

- Building rapport To build trust in a partnership of information exchange, a new field worker should spend time contacting village elites to inform them of the information gathering agenda, then take time to meet people informally so that the information gathering can be done in a non-threatening environment. During this stage appropriate partners are identified that may include the local community of forest users, clan elders, village and/or district government.
- Investigation of the institutional context for forest management Through Venn diagramming, time lines and open questioning in large and small (focus) groups, investigations can yield the nature and status of existing local institutional and/or organisational structures of relevance for natural resource management. These groups, together with the indigenous management system, can form the basis for a new sponsored institution for collaborative forest management. Indigenous management systems describe the social and technical arrangements whereby local communities achieve the management of their natural resources. These arrangements have emerged from within the village community and contrast with externally imposed, or sponsored, management systems. If no indigenous structures have been found and new institutional arrangements are proposed, careful checking will be required of the equity in representation in the group, through wealth ranking, household interviews and focus group discussions.
- Forest resource use assessment Through a number of participatory rural appraisal tools (e.g. participatory mapping, time line, semi-structured interviews in large groups and focus groups, field observation) patterns of resource use; resource needs and priorities; and the nature and status of technical arrangements in indigenous management systems, can be understood. This knowledge can form the basis for management options which will be reviewed and decided by the group.

Stage three: Negotiation and implementation of management agreement

- Negotiation of a management agreement The roles, responsibilities, accountability and authority (rights) of each partner is defined in consultation with them, through the negotiation of a management agreement for the forest. The management arrangements are also defined in this agreement. Other community development activities may also be specified.
- Implementation of the plan Consistent support will be provided by district and regional advisors in the technical aspects of forest management (harvesting and protection) and the institutional aspects (equity and self-reliance in decision-making, financial management and product distribution).
- Monitoring and review of the management agreement, by the forest management group with support from district and regional staff. Bi-annual review of progress and impacts of activities.

Source: adapted from Nurse (1997)

Box 4. Procedure for Mangrove Resource Use Assessment

1. Prepare an outline topographic map on a large sheet with some key geographical features that can be used for a participatory mapping exercise (Jackson *et al.* 1994).
2. Divide large group of users into interest/focus groups, e.g. women, elites, elders, young men).
3. Within each focus group ask the following:
 - What are the resources that you use or would like to use from the mangroves (sacred sites, honey, medicines, goat grazing, household polewood, household firewood, commercial firewood, commercial polewood, salt boiling, fish smoking, household timber, commercial timber)?

For each resource, describe the following (start with less damaging resource uses, e.g. sacred sites, honey, medicines):

- Of all the uses of mangrove, is this one the most, simply important, or least important of them?
- What species are exploited for this use (most to least important)?
- What is the abundance of the favoured species?
- Please show on the (participatory) map where you would collect this product?
- What is the method of collection?
- Who uses the resource (interest group/village)?
- What is the level of use (high, medium, low)?
- What is the level of damage sustained by the resource with this use?
- What are the control options related to this level of damage (e.g. block rotation, seasonal use, type of use)?

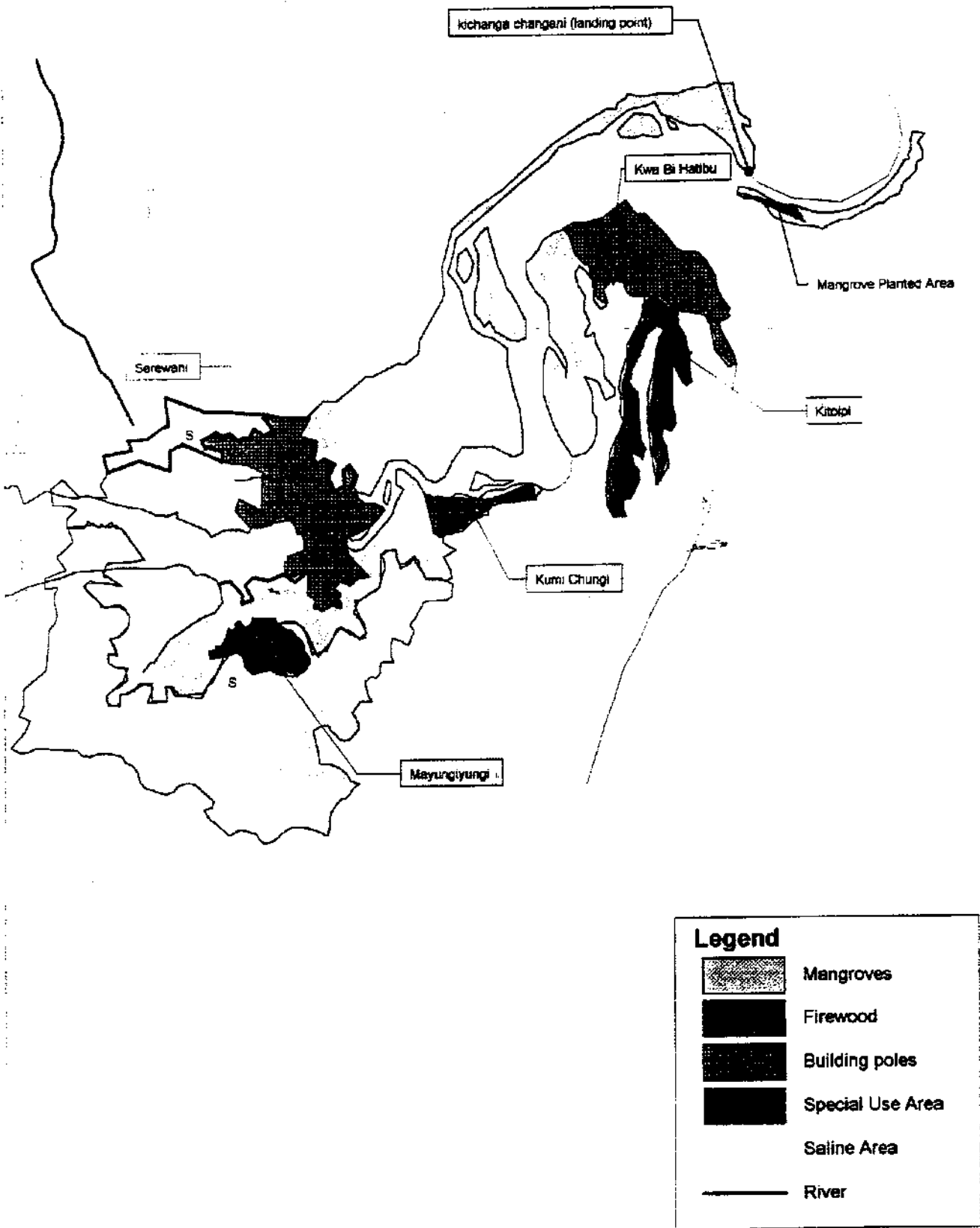
Note: responses to these last two questions can also be facilitated using a matrix rank.

4. Check results through informal survey.
5. Conduct a forest profile. A group of forest users can accompany the Programme staff into the forest and describe their sub-area, the intensity of use in each sub-area, the species/resources used, and the value or importance of the sub-area, again to guide future management. A participatory map may also complement this activity.

Source: Nurse (1997); Source for open questions: adapted from Scott (1994)

coming from not only Kipumbwi and Sange, but at least two other villages. At least one location (Jangwa la Serewani) was used by all four villages. The main uses nominated were building poles, boat building materials and fuelwood, all with preferred species for use. On a scale of 1-5, with 1 being very good and 5 being very poor, the condition of the mangroves in 7 locations were either very good or good. Those uses not investigated in detail, but mentioned by informants included honey collecting and fuelwood for salt boiling. These uses will be investigated with other key informants at a later stage.

Figure 6. Resource use areas of Kipumbwi/Sange mangroves



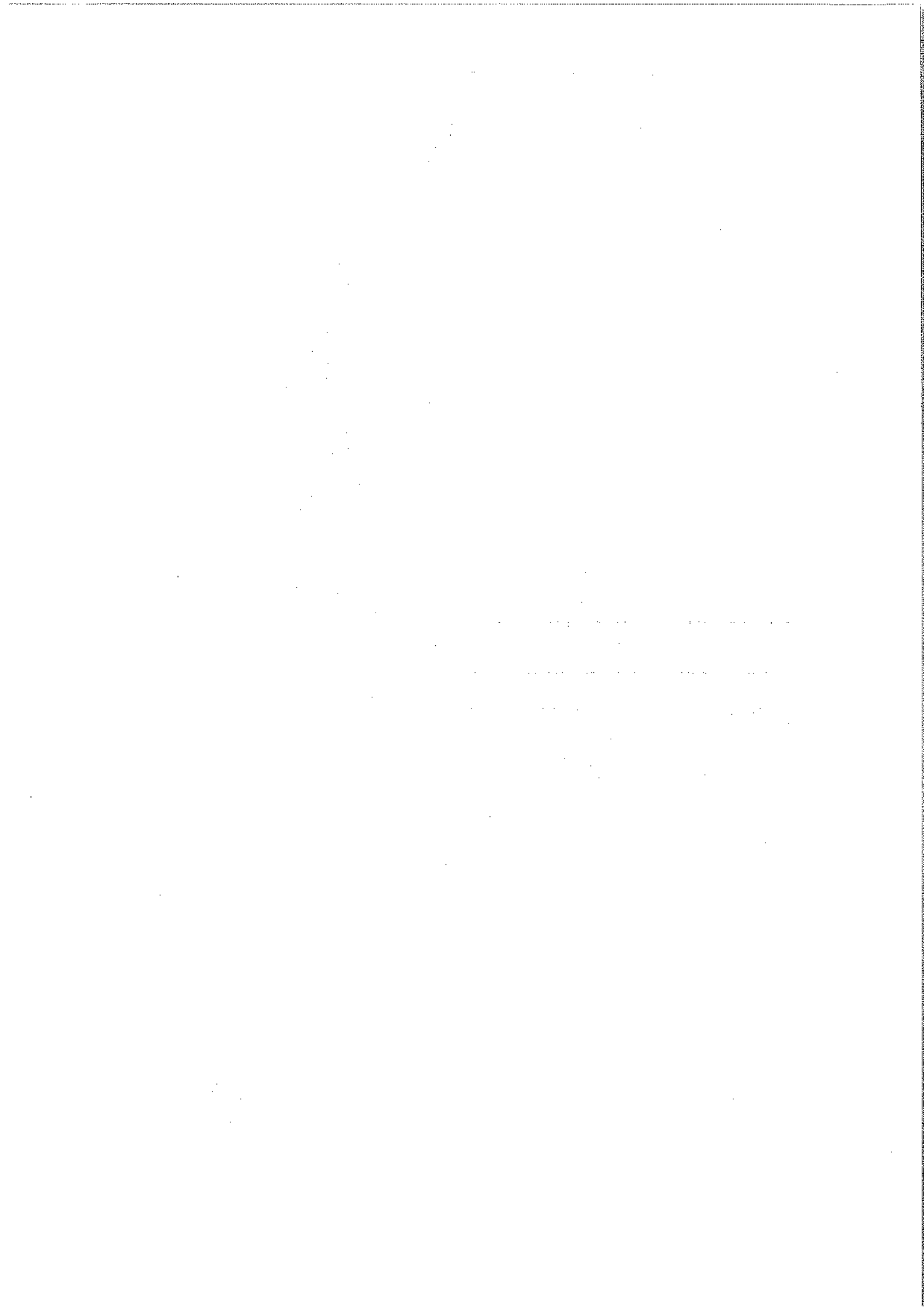


Table 9. Resource Assessment of Mangroves at Kipumbwi/Sange

Location	Uses	Preferred Species	Users From	Level of Use	Condition
Jangwa la Serewani	Building houses Poles Boat building	Ceriops tagal, Xylocarpus granatum	Serewani Sange Kipumbwi	Medium	2
Dindi la Papa	Poles	C. tagal, X. granatum	Sange Serewani	Medium	2
Mayungiyungi	Fuelwood	Avicennia marina, C. tagal	Sange	High	3
Mzingi	Poles	C. tagal X. granatum Av. marina	Kipumbwi	Medium	2
Visiwa Vitatu	kwa faraji (proposed for recreation, tourism)				1
Mafuta	Poles	Bruguiera gymnorhiza	Kipumbwi	Medium	2
Haberani	Poles	B. gymnorhiza C. tagal	Kipumbwi	Medium	3
Bandari Kipumbwi	Fuelwood (domestic)	A. marina C. tagal	Kipumbwi Mtoni	Low	1
Kichanga changani	Fuelwood	C. tagal	Kipumbwi	Medium	3
Mibuyuni	Poles Fuelwood for salt boiling	C. tagal, X. granatum	Sange	Medium	2
kwa Bihatibu	Poles	Rhizophora mucronata X. granatum	Sange	Medium	3
Kitoipi	Poles	R. mucronata	Kipumbwi	Medium	1
Ras Mwangombe	Boat building	B. gymnorhiza	Kipumbwi	Medium	2

Following the process outlined in Box 3, a draft management plan has been produced (see Appendix 9). This plan will undergo further refinement and negotiation with central government forestry staff and finally, approval by the Director of Forestry in the early part of phase 2. The main sections of this draft plan include (Nurse 1997b):

- descriptions, including management objectives;
- roles, authority, responsibilities, accountability of each partner organisation;
- prescriptions for harvesting and distribution of forest products, protection arrangements and sanctions, financial procedures, development activities.

Lessons Learned

- Border disputes between neighbouring villages over who has rights of access to resources of an area need to be resolved. Resolution of the dispute does not have to mean reaching agreement on village boundaries. In this case, agreement was reached for access for both villages and joint management by the two villages and government.
- Committees may often not have the support of the majority of resource users. For example, an assessment of the Kipumbwi mangrove committee revealed that it was not widely heard of within the village; few understood its purpose and few participated in its replanting activities. This problem was solved by incorporating this committee into the Lands and Environment Committee which did have wide levels of support in the village (Nurse 1997a). Committees' representativeness of actual resource users need to be periodically checked.
- Consequences of poor support for committee actions is that only a few people share the burden of undertaking the actions. They may soon be unable to continue their efforts because of this burden.
- Resource use assessments collected through key informants is not necessarily accurate. This information needs to be verified through further meetings (with other informants) and site visits.
- Multiple GPS readings for each site should be taken to improve accuracy of resource use maps.
- The basis of a management agreement can be developed fairly quickly, with 2-3 days of meetings, once villagers are organised and detailed resource use assessments are completed.
- A draft management agreement prepared with key resource users should be checked and agreed with smaller groups that still have legitimate interests in the area (e.g. salt boilers, honey collectors).

6.14 Working examples of management of coastal forests and wildlife established

In both Kipumbwi and Kigombe, villagers wanted to address the problem of scarcity of fuelwood and building materials. In both villages, they organised committees to take actions. Initially in Kigombe, teak was planted, on the advice of forestry staff. However, poor survival rates led to reassessment of the process used there. It was found that the soils where the teak were planted were inappropriate for this species.

To determine the most appropriate species for the available site, a participatory evaluation of preferred tree species was done. First, the women decided that they wanted to do their own plantation. So the evaluation was first done by them. They did pair-wise rankings of available and known species according to their uses. The results (Table 10, full details in Nurse 1997a) were used to determine the percentage of each species to be planted at the site.

A formal management agreement is required to ensure that those who put in the effort of establishing and maintaining the plantation, also receive the benefit of the resources. Roles, responsibilities and authority need to be decided now, before the resources become valuable.

The elements of this management agreement are similar to that given in the draft Kipumbwi/Sange mangroves agreement (section 6.13), with the addition of parts dealing with maintenance of the plantation, harvesting and distribution of tree products and revenue sharing. This same process has been repeated for the men's planting committee.

Table 10. Matrix Ranking for Women's Plantation Site

USES	SPECIES				
	Albizzia lebeck (mkingu)	mkwaja	Senna samea (mjohoro)	Terminalia catalpa (mkingu)	Azadirachta indica (muarubaini, neem)
firewood (kuni)	0	0	23	0	0
poles (jengo)	0	0	8	0	0
timber (mbao)	23	0	0	23	0
Overall Preference	10%	0	56%	34%	0

Lessons Learned

- Forestry staff need more technical training in site assessment, and in participatory methods.
- There is limited knowledge among existing forestry staff on the propagation and use of native species.
- Training for villagers is required on the preparation of ground for planting and seed handling techniques. Small home nurseries may be more viable than a larger village nursery.
- Enforcement of a village by-law restricting goat grazing has had benefits for most villagers; however, those disadvantaged by the by-law appear to have taken revenge by vandalising plantings.
- Programme staff have had difficulties in facilitating villagers to develop the level of detail necessary for the management agreement. Closer supervision is required in these first attempts.

6.15 Working examples of new coastal resource uses for economic diversity

The development of alternative activities to reduce pressure on coastal resources and increase the income security of coastal residents was part of the proposal for the Programme in phase 1. Achievements were limited. By their nature coastal villagers avoid risk, and risk is a large part of developing alternative economic activities. New alternative enterprises require testing for feasibility and also need markets for their products. The Programme's Community Development Fund was intended to support alternative activities but in reality it was used to support activities that are already on-going.

However progress was made in establishing trials for mariculture. Since 1989 the Regional Fisheries Office had initiated trials on seaweed production in conjunction with private investors. In 1995 and 1996 commercial production was starting and seaweed farming was spreading along Tanga's coast. The risk to the producers/farmers was very low as the purchasing companies supplied all the necessary materials.

In early 1996, the programme conducted an assessment of the potential for developing mariculture in Tanga Region (Katz and Zuberi 1996). It identified potential areas along the three districts, identified suitable species for cultivation based on their compatibility with the biological and socio-economic conditions in Tanga region, proposed an implementation plan and a specific monitoring framework. Field observations were made of the ecological characteristics and suitability of environmental conditions for each species at 16 villages, the Pangani Fisheries Training Centre and one private company - Koweï prawn farm. Villagers were also interviewed to learn about their perceptions and attitudes towards mariculture.

Several indigenous species were considered potentially suitable but with differences in technical, management and marketing constraints. For phase 1 the team selected those species with the most simple technical production and harvesting requirements; which were already familiar along the coast, or in neighbouring Kenya; had ready markets, and which villagers were aware of and interested in. They proposed that in the phase 2, other species should be trialed including those requiring careful planning and design to minimise environmental impacts, or requiring more complex technology or skilled labour.

Following the assessment, meetings were held in all coastal villages to inform people of the outcome of the assessment. Then a three-week training course on mariculture was conducted for 26 extension workers and villagers who would act as mariculture site specialists for conducting trials. The Regional Coordinator for Mariculture also attended a one-month training course in aquaculture management in the Philippines in early 1997.

A number of trials or demonstration sites were established following the recommendations of the assessment. The development of the trials and results to date are summarised below.

(a) **Seaweed farming using raft method at Kigombe:** In some areas of the coast such as Kigombe and Boma, the substrate is rocky and not suitable for rope and peg method of seaweed farming. Also as more and more people take up seaweed farming the available intertidal area is getting smaller. This trial tests the use of rafts which are anchored to grow seaweed. The raft method, if successful would allow people to grow seaweed off-shore. A village site specialist is responsible for day-to-day management with routine visits from the

Mariculture Coordinator. A simple monitoring system has been established. So far the trial is going well with good growth rates comparable to those with rope and peg method.

(b) Oyster culture at Mwandusi: Oysters are not grown commercially in Tanga so far but there is a ready market available in the tourist hotels of Kenya's coast. Oysters are technically easy to grow and are particularly suitable for women. The disadvantage is that it takes nearly two years for them to reach harvest size. Twenty women in Mwandusi village have agreed to be involved in this trial. One of them has received mariculture training and is the site specialist. Racks and tiles have been prepared and hung. The spats and a number of other organisms have settled on the tiles. At low tides the women remove these organisms and excess spats. They are monitoring the amount of time and labour required as well as the condition of the tiles and spats.

(c) Prawn farming at Kowe Farm, Manza Bay: A small trial prawn farm (4.66 ha) was to be started by a private company, and to be monitored by the Programme. The start of this project was delayed due to unresolved issues with the Mangrove Management Project (MMP), which claimed that the area obtained by the company was within the mangrove forest reserve. Various meetings were held and recommendations sent to the Regional Commissioner resulting in permission being granted for the company to use the area provided it fulfills certain conditions, i.e. conduct an environmental impact assessment, replant mangroves, and seek advice from the MMP on the proper use of a water spring adjacent to the site.

(d) Cage culture of tilapia at Kipumbwi: Cage culture of fish is a system of mariculture which can give very good growth rates for different species of fin fish. There is potential for growing fish such as tilapia in these cages, as they have high salt tolerance in the rivers and estuaries. A trial is planned at Kipumbwi to test this technology. The start of this trial was delayed because of problems procuring the materials.

If they prove feasible (environmentally, economically and socially), then the Programme needs to develop a strategy to promote their uptake, especially with poorer people and also with people presently using the reef fishery so that pressure on that resource is reduced. All costs for these trials have been met by the Programme.

The mariculture assessment consultancy recommended the formation of an advisory committee to advise the Region and the three coastal districts on how to promote and manage environmentally sustainable mariculture. Draft terms of reference were drawn up for the committee. It was later agreed that this committee would be a sub-committee of the Regional Coastal and Environment Committee.

Lessons Learned

- In piloting and establishing alternative activities there is a high risk involved, which villagers are not able or willing to take. A financial security net needs to be provided during the initial phase of introducing new technologies such as mariculture.
- New alternative enterprises require testing for feasibility and also need markets for their products. Villagers will not adopt risky or untested activities which might hinder their livelihood.
- Most mariculture systems have potential problems with sea tenure. Rope and peg method of seaweed farming is expanding rapidly and there have been many problems with fishing boats and with beach seines. Tenure problems may also affect systems such as cage culture or fish attracting devices. These issues need to be addressed through agreements between different interest groups. Mapping can assist in reaching agreements on what activities can take place in what areas.
- Pilot trials for prawn production and oyster farming were delayed due to unresolved issues with the Mangrove Management Project. The proposed sites were within or adjacent to mangrove forests. The existing Mangrove Management Plan does not provide for the passive use of mangroves for mariculture techniques such as oysters or cages. Frameworks are needed for resolving such issues and agreeing procedures for mariculture development within mangrove areas. The policy of Fisheries Division on prawn farming also needs to be clarified.
- Establishing trials took longer than envisaged. Delays included procuring materials and logistics. The time required from initiation of trials to promotion of a production system on a wide scale is long. The first seaweed farming trials started in Tanga about six years ago and it took five years of development before there was widespread uptake of the system.

6.16 Working example of beach pollution control in place

Beach pollution was raised as a priority issue in a number of villages. The causes of this problem included the use of beaches for human defecation. Within the pilot villages the number of households with latrines was low and also usage of latrines was low. The incidence of diarrhoeal diseases was high. In each pilot village a participatory assessment of sanitation was conducted. Most of the coastal villages have very sandy soil which poses problems for latrine construction.

Following this assessment contact was made with a government technician in Pangani with expertise in building cheap latrines using coconut husks to line and strengthen the pit. He was invited to Kipumbwi village where he built a demonstration latrine and taught villagers the technology. The committees in Kipumbwi were particularly keen on improving sanitation and encouraging people to use latrines. Health workers in the village also assisted. As a result more than 60 latrines have been built using this technology in Kipumbwi. The technology was also taught to villagers in Kigombe and Mwambani but the uptake has not been so enthusiastic and only few latrines have been built there so far.

Pollution by sisal effluent has also been raised as an issue but no progress has been made to date.

Lessons Learned

- The use of coconut husks for pit lining can be successfully used for strengthening the walls of pit latrines in areas with sandy soil.
- The enthusiasm of the villagers was the most critical factor in the success of latrine building in Kipumbwi. Unless an issue is perceived as a priority by villagers it is difficult to succeed.
- The cooperation of different departments (health and community development) was another important factor in the success of sanitation activities in Kipumbwi village.

6.17 Working example of coastal erosion control in place

At Kigombe and Kipumbwi, village committees have been planting mangroves and shoreline species to protect and stabilise eroded areas. Mangrove planting at Kigombe has had limited success, as most seedlings have died. Forestry officers believe the area's hard reef pan to be unsuitable for mangroves. However, during a study tour to Zanzibar, villagers saw that mangroves can be successfully planted in such situations. They are therefore continuing their plantings.

Kigombe has planted cactus *Opuntia* sp., *Diospora mespeliformis* (mikadi), *Leucaena leucocephala* and *Casuarina cunninghamiana* on the strand and foreshore areas and within a nearby gully. An agricultural officer visited the site but did not give very detailed recommendations on how to combat the erosion. Villagers were generally very dissatisfied with his advice. Goats are eating many of the seedlings and protection fences have been put around some seedlings. A by-law was also passed aimed at restricting goat grazing. Much of the gully erosion is caused by poor drainage from the main Pangani-Tanga road. Simple diversion drains could reduce this problem. More permanent alterations should also be made on the existing road drain. This will require the cooperation of the Regional Roads Engineer.

Lessons Learned

- Follow-ups with villagers on technical advice have generally been very poor. This would be improved if technical staff are required to feed their information back to villagers directly.
- Simple gabion structures may be needed to reduce sea erosion, especially as mangrove planting is a long-term solution.
- More technical advice is required on the planting of mangroves and other indigenous species for soil stabilisation.
- Some of the beach erosion problems are due to land-based run-off. More attention needs to be paid to improving run-off drains from nearby roads.

7. Phase 2 Recommended Objectives and Indicators

Following the evaluation of Phase 1, the planning for Phase 2 began. A planning team, with representatives from each of the partners, had the task of producing a logical framework and funding proposal for a further three years, for approval by Irish Aid and the other partners. These were prepared by the planning team which spent two weeks in Tanga in May 1997. Before the planning team arrived, preparatory planning had taken place at village, district and regional level as outlined in Box 5.

Box 5. Preparations for Planning of Phase 2

Village Level: In each pilot village a participatory evaluation of phase 1 took place. Villagers (committee and non-committee members) reviewed their achievements and the elements of the process which they felt had gone well or needed improvement. They made recommendations on what they felt were critical for expansion to other villages in phase 2. They also outlined what they would like to achieve in a further three years. (See Appendix 10 for details.)

Extension Workers: A workshop was conducted with all the extension workers in which they made their recommendations for the expansion of the Programme in their districts in phase 2. (See Appendix 11 for details.)

District Level: The members of each district technical team, along with representatives of the village committees and extension workers, developed their own logical framework for phase 2 with the results they want to achieve and the activities necessary to achieve these.

Regional Level: The Programme team developed results which it felt were needed to support the districts' proposals. The Administration Task Force also met to discuss how the Programme should be structured and administered in phase 2.

The planning team reviewed the recommendations made by the pilot villages, districts and Programme team, and held meetings with the different partners. It also addressed the recommendations and issues highlighted by the evaluation team (see Appendix 12). From these discussions, it developed the logical framework for phase 2. This was then presented to a workshop where all the partners attended to discuss it and make revisions before agreeing to it. The proposal was then reviewed and approved by both the annual regional workshop and the Regional Steering Committee. The full logical framework for phase 2 is in Appendix 13.

The Programme has one objective that is considered achievable in the next three year phase:

Three coastal Districts with established programmes of collaborative resource management (communities and government working together) that improve the well-being of the coastal communities and their environment in the Programme villages.

This objective is more specific than the two objectives of phase 1. Institutional capacity strengthening and sustainable resource use by the communities are defined within the context of establishing collaborative management.

The purpose of phase 2 will be to consolidate and build upon the successes of phase 1; refining, improving and expanding on phase 1 outcomes and processes. It is the demonstration stage of Piccotto and Weaving's (1994) model (see section 3). More government staff will be trained, especially at the district level. There will be less dependence upon outside technical assistance. Funding for this aspect will reduce from nearly 50% in phase 1, to about 25% for phase 2. Again, there will be no attempt to develop overall integrated coastal management plans, at either the regional or district level at this time.

In phase 2 it is envisaged that the Programme will expand to cover a total of about 12 villages, including the three pilot villages of phase 1. In addition, some activities such as enforcement and fisheries management plans, will be done in cooperation with neighbouring villages. Although these will not have the full range of activities as the Programme villages. Therefore the spread effect would cover as much as 50% of the coastal villages for some key activities.

The principal beneficiaries will be the residents of the coastal villages in the three Programme districts: Muheza, Pangani and Tanga Municipality, especially those who depend on fishing and subsistence agriculture for their livelihoods. The secondary beneficiaries will be the district and regional government officers who are responsible for providing supportive services to these communities.

Results

There are ten results which should be achieved in the three years of phase 2 if the Programme objective is to be met. These are the key areas that either led to phase 1 successes or impeded progress. These are:

1. Three coastal districts coordinating and implementing coastal resource management.
2. Tanga Region facilitates and supports the three coastal districts to implement sustainable coastal resources management and links them to central government, IUCN and donors.
3. Regional and district staff working to professional standards.
4. Effective system of enforcement operating in all Programme villages.
5. Communities empowered to undertake collaborative management of coastal resources in Programme villages.
6. Gender considerations integrated at all levels of Programme planning, management and implementation.
7. Monitoring, evaluation and reporting procedures defined and being implemented at all Programme levels.
8. Livelihoods of coastal communities improved through use of sustainable fishery practices in Programme villages.
9. Improved and sustainable agricultural practices promoted as an alternative coastal resource use in Programme villages.
10. Conservation, equitable access to, and sustainable use of, forest resources secured for Programme villages.

8. RECOMMENDED STRATEGIES and GUIDELINES for PHASE 2

Phase 2 has ten results which need to be achieved if the Programme's objective is to be met. Based on the lessons learned during phase 1, the Programme recommends the following strategies for the best way of achieving these results. Guidelines are also provided to assist in the implementation of these strategies.

8.1. Three districts coordinating and implementing coastal resource management.

The districts have the role of implementor of government policies and programmes. Therefore, phase 2 will emphasise this role. The districts will do work plans and implement Programme activities according to those work plans. The regional team will support and guide the districts.

The key district players are the technical staff and extension workers in the departments of Natural Resources (Forestry and Beekeeping, Fisheries and Wildlife), Community Development, Planning and Agriculture and Livestock. These work under the direction of the District Executive/ Municipal Director. In addition Programme activities will be reviewed by various standing committees; ward development committees and the District Councils. Each of these players should have an agreed role in the Programme, and participate in relevant activities.

Districts will develop their criteria and methods for expanding into new villages. Extension workers will facilitate village action planning and district technical teams will supply technical and limited financial support.

Guidelines

Role and membership of district technical teams, district steering committees and ward development committees

- Roles, responsibilities and specific tasks of the different committees should be clearly defined and agreed by the Administrative Task Force, early in phase 2.
- District technical teams and district steering committees should decide on composition and/or expansion of their respective membership, considering recommendations of the evaluation report and the results to be achieved in phase 2.
- New district technical team members should be selected if necessary and trained in required skills (see section 8.3 for details).
- District technical teams should report to its District Council on a quarterly basis through the appropriate committees.

Selection of and expansion to new Programme villages

- Each district should decide criteria for selection of new village(s) (or sites). Recommended criteria include:
 - demonstrated interest of the villagers themselves;
 - proximity to other villages which are participating in enforcement activities;
 - possibilities for cooperation; and
 - likely difficulties for the district to provide the required backup support.(See section 8.8 for recommendations on selecting new villages for fisheries management).
- Districts should decide on a realistic method and time-frame to expand to other villages, based on their available human and other resources, and taking into account the recommendations and options put forward by the extension workers and the pilot villages (see Appendices 10 and 11).
- Districts should decide on the number of new extension workers needed to expand to other villages, taking into account the recommendations of the regional team. Options are given in Appendix 14.
- District's proposal for expansion is submitted to its district steering committee and any other relevant committee for approval.
- New extension workers should be selected. Important selection criteria should include proven communication and organisational skills and no previous history of misconduct.

Implement activities in the Programme villages

- District technical team members should produce quarterly work plans, with assistance of regional advisors. They should ensure these work plans are reviewed by district steering committees.
- They should provide technical assistance to village action planning through regular field visits.
- They should conduct quarterly monitoring of process and impact of agreed actions, along with villagers.
- They should organise regular feedback meetings with village committees, to monitor progress, discuss problems encountered and keep each other informed.
- They should advise on and facilitate the establishment of collaborative management agreements. They should review and facilitate the approval of necessary regulations and formal agreements through district committees and District Councils.
- They should review their existing environmental by-laws, and revise or propose new by-laws to support village initiatives.

8.2 Tanga Region facilitates and supports the coastal districts to implement sustainable coastal resource management and links them to central government, IUCN and donors.

The regional team, composed of local and expatriate technical advisors, is responsible to the Tanga Regional Administrative Secretary and the Regional Steering Committee for the overall management of the Programme. This team supports the districts with technical advice, policy advice and finances. They will monitor the progress of activities and their intended impacts, and suggest changes in work plans when necessary. They will facilitate regional-based workshops, meetings and task forces to ensure coordination among the three coastal districts and with central government. They will actively work for changes in legislation and policies where these are needed to ensure the successful completion of Programme results and objective. They will also link Programme activities to the wider Eastern Africa network of practitioners and donors involved in coastal resources management.

Guidelines

Oversee management of the Programme and provide technical support

- The regional team should develop, produce and distribute guidelines for establishing collaborative management in Programme villages, and for administrative and financial procedures.
- They should facilitate the preparation of annual work plans and budgets, and their approval by Regional Steering Committee.
- They should provide annual and quarterly reports and work plans to Programme partners, and ensure these are completed on time.
- They should ensure all Programme procedures and decisions are appropriately documented and followed.
- They should facilitate the working of the Regional Coastal and Environment Committee (plus Enforcement and Mariculture sub-committees) to promote coordination of advice on environmental issues. The effectiveness of these committees should be assessed periodically.
- They should facilitate annual regional workshops of key stakeholders to agree priority environmental issues and actions, and review Programme progress.
- They should provide technical advice and support to districts as agreed in quarterly work plans.
- They should monitor progress of work plans according to agreed indicators and criteria.
- They should provide ongoing financial administration according to government and IUCN standards. Separate Programme accounts will be kept by the region and districts. Full financial reporting on all Programme funds will be made available to all Programme partners.
- They should organise and provide secretariat to six-monthly meetings of Regional Steering Committee.

Provide links to central government and others

- Annual technical workshops should be organised to promote involvement of central government and Programme partners, and to facilitate implementing lessons learned. These workshops should include field visits and problem-solving sessions.
- Inputs should be provided to the National Environment Management Council's integrated coastal management project and Department of Environment's policy initiatives.
- Regular briefings and policy advice should be provided to central government, donors (through Irish Aid), and IUCN on Programme's progress and issues.
- The Programme should facilitate approval of management agreements and coastal resources management regulations through central government agencies.
- The Programme should facilitate a high-level national conference on the elimination of destructive fishing practices, to be held in Tanga early in phase 2.

8.3 Regional and district staff working to professional standards

As outlined above, districts will be the implementors of Programme activities, supported by regional staff. Therefore a revision of tasks and responsibilities of these staff is necessary. Position descriptions, work standards and guidelines will be developed for staff positions and regularly evaluated. Incentives for good performance and correction of poor performance will be based on annual staff appraisals. Training needs will be identified according to roles, responsibilities and results to be achieved. The aim will be to upgrade skills needed to undertake the job they are given to do.

Guidelines

Develop work standards and guidelines for each position, including terms of reference and staff appraisals

- A review should be conducted of positions needed at regional and district level to achieve phase 2 results, especially district coordinators and regional advisors for new results areas.
- Roles, responsibilities, specific tasks and qualifications needed for the different positions should be agreed. Staff should be selected for vacant positions based on open competition and according to selection criteria.
- Staff and their supervisor should agree on annual objectives. Annual appraisals should be conducted for all positions. Training or corrective actions required should be agreed.
- Administrative Task Force should decide on the remuneration and incentive package for the different positions corresponding with role, responsibilities and grade.
- Regional advisors and district technical teams should conduct annual evaluation of changes in regional and district institutions, analysing strengths and weaknesses and using an agreed institutional organisation index.

Upgrade skills of regional and district staff to professional standards

- Training and resource needs assessments should be conducted for staff according to roles, responsibilities, results to be achieved and present capabilities.
- New regional advisors and district technical team members should be trained in basics of coastal ecology, collaborative resource management, problem analysis, programme planning and community-based project management.
- As a priority, district technical team members should be trained in programme management, animation and facilitation skills, gender analysis, participatory assessments, planning and monitoring techniques.
- Technical training for regional advisors and district staff should be organised over the three years in reef management, environmental impact assessment, advanced mariculture techniques, agro-forestry, and environmentally friendly agriculture.
- New extension workers should be trained in animation, communication and facilitation skills, basics of coastal ecology, collaborative resource management, participatory appraisal techniques, analysing and planning skills, coastal culture and training of trainers.
- Refresher courses should be organised for extension workers in gender sensitive and participatory assessment, planning and monitoring techniques.
- Feedback meetings for extension workers should be held every six months to discuss progress, problems and upgrade skills.
- Study tours and exchange visits should be undertaken along with village participants to visit other collaborative resource management examples and alternative income generating and resource use trials.
- All training courses and study tours should be evaluated for their effectiveness at end of course/tour and periodically throughout the phase.

8.4 Effective enforcement of environmental regulations operating in Programme villages

Enforcement is a key issue in the proposed coastal resource management agreements, which were developed in phase 1. Without it, many of the measures proposed will be ineffective. The Programme will continue to develop village based patrols, which have proven to be reasonably effective. Less costly means of enforcement are required for long-term sustainability. Therefore, there will be less dependence on full-time marine police presence. More emphasis will be given to building the villagers' capacity to deal with enforcement problems, e.g. training of militia and/or special constables. More cost effective means will need to be found for supplying support from police and government agencies. This will include the establishment of a radio communication network between villages, government and police. It could also include the establishment of police posts at key villages along the coast.

The effectiveness of each option that is trialed will be assessed using the monitoring systems set up during phase 1. Monitoring activities will also examine the cost effectiveness of the different options. A trial of cost sharing will be established at one of the phase 1 pilot villages.

Expansion to other villages will be in stages dependant upon staff availability and the successful establishment of representative village committees. Strategically, it is recommended that the first stage of expansion include Ushongo, the second stage Moa and Tongoni, with a possible third stage to Mkwaja. The rationale for these villages is that:

- Ushongo has already established its village forum.
- Expansion to Tongoni would enable more effective control of dynamite fishing from Tongoni and Mwarongo and thus consolidate the efforts of Mwambani and Kigombe.
- Expansion to Moa could provide a further case study of integrating mangrove and fisheries management.

Government support to village based enforcement is critical to its success. This support should include:

- the training of prosecutors at district level;
- modification of existing legislation to reflect the seriousness of the offence. For example, there should be minimum as well as maximum sentences;
- finance;
- provision of training and advice;
- prompt and appropriate action to be taken when government officers do not perform their duties satisfactorily.

Support from government is dependant upon the effectiveness of the regional advisory bodies (the Regional Coastal and Environment Committee and its Enforcement sub-committee) in influencing government policy and actions. The latter sub-committee has the mandate to advise central, regional and district governments on enforcement issues.

Guidelines

Village-based enforcement expanded

- Each district should select one staff member to be trained as a prosecutor. This person can be selected from fisheries, forestry or community development. The effectiveness of these trained prosecutors should be monitored on indicators such as prosecution time, cases won and sentences given.
- To make patrols more village based, villagers should receive training in:
 - power boat handling and maintenance (for operating the patrol boats);
 - militia training. Monitor impact of training on success of villagers in apprehending suspected offenders, formulation of cases, impact on costs.
 - VHF radio communication systems to be established in pilot villages.
- Clear guidelines should be developed on arrest procedures for villagers and police and training should be provided on how to implement those guidelines.
- Patrol logs should be continued in existing trial sites and established in other pilot villages as an effective means of isolating causes of problems. Reports should be made available to supervisory government officers on a regular basis (monthly or quarterly) or when action needs to be taken. Disciplinary action should be taken against government officers who do not fulfill their required responsibilities.

- Any expansion of patrol activities should be preceded by further formal agreements between villagers, government and police which clearly state the roles and responsibilities of the different parties. If there are to be any changes in the roles and responsibilities of the parties, then those changes should be reflected in new formal agreements.
- Mechanisms should be determined for government support to villagers, which minimise dependence in the day-to-day running of the patrols. Options include the use of one fisheries officer to cover several villages; and the establishment of police posts at key areas.

Cost sharing for enforcement investigated

- A trial cost sharing scheme should be established, with the contributions of the various players dependant on the proportion of their total revenue gained from fisheries taxes. Districts receive a small proportion of their total income from fisheries taxes so could probably contribute a high proportion of this (80%) to enforcement. Village government income is largely received from fisheries taxes so they could contribute a smaller proportion as this income is needed to cover their other expenses also. The contribution of the villagers in terms of time and personnel should also be set against their cash contribution.
- Villages without a landing station, should establish one so that catch levies can be collected.
- A catch recording system should be established which will record value of catches sold. The catch data collection system which has already been piloted in Kigombe could be used in other villages.
- A more accountable receipting system for fisheries revenue should be established, to overcome the present problem of "leakages".
- Licensing of fishers should be improved. Currently the number of licensed fishers is similar to the number of boats implying that there could be large number of fishers which use these boats to fish but do not have licences.
- Structured incentive schemes should be developed for villagers who participate in the patrol activities on a more full-time basis and to ensure the continued improved performance of fisheries officers. These could include the payment of performance related bonuses.

8.5 Communities empowered to undertake collaborative management of coastal resources in Programme villages.

The Programme aims to improve the well-being of Tanga's coastal people through empowering them to use and manage their coastal resources in a sustainable manner. The population of Tanga's coastal villages is mostly dependant on the natural resources for their livelihood. Those livelihoods are already precarious as population increases and the natural resource base deteriorates. At present many coastal residents do not feel they can arrest this situation. Authority for resource management has largely been seen as a government

responsibility and because of government's limited capacity, very little effective management has been happening.

Coastal villages need empowerment and support to enable them to manage resources with only limited inputs by government - through building their confidence in their own abilities, providing them with competent technical advice so that they can make good decisions, providing a strong policy and legislation framework, effective enforcement of government regulations, providing clear guidelines on use and management of those resources and through transparent agreements. Phase 1 tested how this could be achieved. Phase 2 will refine and strengthen it and expand the process to cover a greater number of villages. New villages will be able to learn from the experiences of phase 1 villages, and will modify the lessons learned to suit their particular situation.

Education and training are critical in terms of building the skills, knowledge and confidence of the villagers. As well as working with the present generation of resource users, the younger generations need to be brought into the process to ensure long-term sustainability. Phase 2 will also include environmental education for youth. Young people are often the most likely to become involved in destructive practices. This will be addressed through education starting at primary school level and through positive involvement of young people in environmental youth clubs.

Many of the actions required to achieve the Programme results in the villages are costly and beyond the financial ability of the villagers. Therefore a system of channelling direct material assistance is needed. This will continue in the form of a lump sum grant to villages for their action plans. The decisions on where the money is spent will lie at village level.

The strategy for phase 2 will be to expand collaborative management using the elements which proved effective in phase 1; principally, participatory socio-economic and resource assessments, animation and problem analysis, village action plans and management agreements, direct material assistance and environmental education for youth.

Guidelines

Participatory assessments completed in new Programme villages

- District technical teams and extension staff should introduce themselves and process to the new pilot villages. Roles and expectations of all parties should be discussed. The role of animators should be explained.
- Participatory socio-economic and resource assessments should be undertaken based on Programme village or a larger area. These assessments should identify and involve all key stakeholders. They should include gender analysis and poverty profiling to ensure that vulnerable groups are not neglected.
- The extent of existing traditional management practices should be determined (see Appendix 15).
- Results of resource assessments should be fed back to village. The programme should test use of 'Barometer of Sustainability' for villagers to indicate how well off they and their environment are (see Appendix 16).

Animation and problem analysis undertaken

- New extension workers and two villagers (1 man, 1 woman) from each of the phase 1 pilot villages should be trained as animators. Assistance can be obtained from Village Development Programme for animation training (Mr. Kallabaka). Animation training for villagers should also include facilitation, problem analysis, micro-planning, monitoring and 'leadership' skills.
- Information from participatory appraisals should be used to ensure all key groups are represented in the setting of village priorities and analyses of consequences, causes and options for actions. Meetings with different sub-groups should take place with outcomes fed back to the village assembly.
- Provisions should be made for keeping most villagers informed of what is going on and involving those that have an interest in the issue. Innovative methods of communications and promotion could be developed with villagers including drama, video and art. Environmental videos have proven to be popular awareness and education tools in the villages in phase 1 and should continue to be used.

Action planning undertaken

- Animators should promote discussion/debate over what is the best way to plan and implement solutions to problems, i.e. should village government oversee? Should they select committees or should they encourage small groups of interested people? Or combinations as appropriate? Committees (or other groups) which implement solutions should be representative of the interests of those affected by the problem, those causing the problem and those who are part of the solution.
- Villagers (committee members) should receive basic training in micro-planning from extension workers.
- Committees should decide the long-term purpose, short-term results, actions to be taken, who should do what and when. These plans should be clear about what the problem is that the committee/group is trying to solve, and what the causes of the problem are.
- When developing action plans, committees should consider what level of participation is required from other villagers - they may only need to be informed or their labour may be required or they may need to be part of the decision making. The plan can then reflect how other villagers should participate.
- District technical team members and regional advisors should participate in developing action plans, by providing technical and policy advice on options for actions. Village or district animator should facilitate the process.
- If a number of different groups/committees are implementing solutions some coordination between them will be needed. Perhaps a coordinating environmental committee is needed or perhaps this role could be done by village government.
- Self-evaluation by the committees on how they operate and problems they have with participation and support, should be encouraged by village animators and through feedback meetings.

- The village government should be kept fully informed of action plans and their progress and problems.
- Regular feedback meetings with district and regional advisors, and other village committees should be held, to monitor progress, keep everybody informed, and promote evaluation of problems encountered.
- If regulations or controls over access to resources is needed, then district technical team members and regional advisors should advise on how to develop a formal written agreement (see sections 8.8 and 8.10).
- Village assembly should pass any recommended regulations or controls. Other villages may also have to be consulted and agree to regulations and controls, if they are also resource users in the area.
- District technical team, committees and District Council should approve any village by-laws or formal management agreements.
- A forum should be established for ensuring that experiences and lessons learned are shared between villages within one district and between districts.

Direct material assistance provided to Programme villages

- Direct material assistance should only be provided to Programme villages which have an animator present and which have undergone the process of problem-analysis and planning.
- Direct material assistance should only be provided in the second year of a village's involvement in action planning. This will ensure that initial action plans are based on maximum self-reliance and that the confidence of the villagers to solve their own problems is built.
- A set amount of money should be made available to the village for its action plans, so that the committees and other bodies go through a process of identifying the needs, analysing their options and prioritising their requirements. The process should ensure that the village assembly is made aware of the proposal and is given the opportunity to approve or disapprove it.
- Administering credit by district technical teams is not considered appropriate because of difficulties in phase 1. An alternative system might be to assist the establishment of savings and credit societies in target villages (starting with Kipumbwi) and once established and members trained, funds for credit could be channelled through the society. As it would be within the village, the monitoring would be internal and the costs of administration would be minimal also. Technical assistance would be required in setting up such a system.

Environmental education for primary schools and youth provided in Programme villages

- A Regional Education Advisor should be recruited to the Programme team, and a member of the district education departments to the district technical teams.
- Advice should be sought (e.g. from Kenya Wildlife Service) on the development of primary school curriculum for coastal environmental education.
- Regional Education Advisor should cooperate with Mangrove Management Project and other education projects to develop a coastal ecology curriculum, and to develop and test training materials.
- Training in coastal environmental education should be provided to key education staff in region and districts and primary school teachers from Programme villages.
- Regional Education Advisor and district technical team should provide back-up support and advice to teachers through regular visits to schools and through organising inter-school activities.
- The Programme should cooperate with 4H clubs, Mali hai clubs and the Pemba Environmental Education Unit to find ways of promoting and supporting youth environmental clubs in Programme villages.

8.6. Gender considerations integrated at all levels of Programme planning, management and implementation.

The roles of men and women in coastal communities are different. Both sexes play important but different productive / economic roles. Both play important but different social roles as members of their community. Women also play a vital reproductive role as the bearers and rearers of children. There are differences in their activities and resource use patterns. There are differences in their access to land, natural resources, equipment, labour, capital, outside income, education, etc. There are differences in the control which both sexes can exert over these resources. A wealth ranking exercise conducted in the pilot villages in late 1996 showed that women are considered among the poorest people in coastal villages, because they own and control very limited resources (Gorman *et al.* 1996a).

The Programme aims to identify and recognise these differences between men and women so that greater equity can be achieved in well-being, access to resources, self awareness and identity, participation in decision making and control over resources.

In phase 1 progress was made in raising awareness and support among women and men of the importance of the participation of both sexes; and in achieving more equitable representation of women and men in committees and decision making, in training and on study tours. Women's confidence has increased through their successful participation in these activities. Where specific problems occurred with low participation of women, steps were taken to address these in the form of special women's meetings.

The strategy for phase 2 is to build on these achievements. Gender profiling will be done in each village to understand the activities of women and men and their access to and control

over resources as related to primary environment care (meeting basic needs through empowerment to manage resources sustainably). This will form the basis for identifying the priority issues of women and men and ensuring greater equity in action planning, implementing activities and the provision of direct material assistance. To achieve this, training in gender sensitive appraisal and planning will be needed at village, district and regional level. The Programme will form and strengthen links with other organisations and groups working on gender issues in Tanzania.

Guidelines

Training in gender sensitive appraisal and planning

- One regional advisor should be formally trained as a trainer in gender sensitive appraisal and planning.
- Staff at all levels (village, district and region) should be trained in gender sensitive appraisal and planning by the regional advisor, using the Oxfam Gender Training Manual (Williams *et al.* 1994) and other training materials as available.
- Districts should recruit more women into district technical teams and steering committees as possible (e.g. the Pangani District Beekeeping Officer and the Muheza District Village Development Programme Facilitator).

Gender profiling undertaken in Programme villages

- Participatory socio-economic study in new villages should include gender profiles which examine the different activities of women and men in resource use and management, and different access to and control over resources and identifies the practical and strategic needs of women. (See Appendix 17 and the Oxfam Gender Training Manual for guidance.)
- Gender profiling should be conducted in the phase 1 pilot villages to check if practical or strategic needs have been overlooked.

Equity in village action planning monitored

- Women on Programme village committees should be trained in leadership and animation to enable them to 'mobilise' less confident women.
- Separate meetings should be organised with women where there are problems with their participation in general or mixed meetings.
- Meetings should be conducted at times which suit the schedules of women (using information from gender profiles).
- Districts should continue to encourage committees to have a gender balanced composition, and encourage gender balance in training programmes, study tours, etc.

Equity in provision of direct material assistance monitored

- Where material assistance is given for implementation of action plans, regional advisor should develop a format for analysing the benefits to men and women which can be used by the villagers when prioritising their needs (see appendix 18).
- Where material assistance is given for starting up mariculture or agricultural activities, at least 50% of such assistance should be given to women.

Develop monitoring system for Programme's gender impact

- Regional advisor should identify indicators and warning flags with village women which will show whether activities are addressing their needs (both practical welfare and empowerment).
- Gender impact should be continuously monitored through feedback meetings.
- A mid-term assessment of gender impact should be conducted after 1.5 years. A local gender expert should be engaged to assist with this.

Programme links with other organisations and groups working on gender issues

- Regional advisor should develop stronger links with Village Development Programme which has a strong gender component.
- The programme should develop links with Tanzania Gender Network Programme and similar organisations to exchange experience and to access expertise.

8.7 Monitoring, evaluation and reporting procedures defined and being implemented at all Programme levels

The Programme's monitoring and evaluation system must determine if its activities are having the desired impacts upon the well-being of its beneficiaries and the coastal environment. This is the ultimate purpose of monitoring, and is based on the indicators specified in the Programme's logical framework. Progress to meeting this overall objective is also measured by indicators for the individual results of the logical framework (see section 7 and Appendix 13). General progress, processes and procedures are monitored to ensure that the Programme will stay on track and meet expected professional standards (see section 8.3).

Monitoring procedures must be practical so that:

- information collected is relevant to the Programme's management priorities and needs;
- methods used are within the technical capacity of the players (i.e. not reliant on highly qualified personnel);
- interest groups (stakeholders) can participate;
- techniques are based on those accepted elsewhere;
- techniques used are rapid and inexpensive.

As many of the Programme's activities centre around village action plans, most of the monitoring will be based in the villages. Villagers themselves will undertake regular checks on

the impacts their actions are having on the desired outcomes. They will be assisted by government staff, who will also undertake additional monitoring. They will facilitate the monitoring of the process used in villages for representativeness and participation of all interest groups. For some aspects, simple techniques will have to be compared to more rigorous methods to assess their accuracy. This may require the training of more qualified staff in rigorous techniques, or enlisting the cooperation of regional institutions to conduct more rigorous monitoring.

Regional and district staff will have the responsibility of monitoring adherence to Programme and government procedures, including the degree of transparency, improvement in institutions and financial accounting.

Guidelines

Village action plans or management agreements monitored for impacts

- Each specific village action plan or management agreement should determine its own indicators and methods for monitoring. These indicators and methods should be identified through a participatory process involving government staff and villagers.
- Government staff and villagers should be trained in these selected methods, data compilation and simple analysis.
- Periodic checks should be made on village-based monitoring systems to ensure procedures are being conducted as originally designed and not being subjected to biased sampling. For example:
 - a record of zero fish catches is kept as well as recording those catches sent for sale;
 - only monitoring areas where no activities are taking place, i.e there can be a tendency for users to avoid permanent plots in forests. This can lead to an over-optimistic status rating.
- Monitoring and assessment of participation and support within villages should be carried out periodically by the regional advisors. The Social Policy Group of IUCN in Gland or Eastern Africa Regional Office could be requested for assistance with this.
- District technical teams should monitor their progress with commitments to actions through monthly meetings and quarterly work plans.
- Quarterly feedback meetings between district technical teams, regional advisors, extension workers and village committees should be held to keep everybody informed and evaluate problems encountered.
- Annual reviews should be made of impact of actions as perceived by Programme villages, using "Barometer of sustainability" (see Appendix 16).
- Annual reviews should be made of impact of activities on coastal environment and its resources.
- An agreement should be established with a regional research agency for rigorous monitoring to run parallel and to calibrate the village monitoring system, for impacts on coastal environment.
- A database which is simple to use should be established for handling monitoring data and district staff trained to use it.

Monitoring and reporting of Programme procedures

- Regional advisors should monitor progress towards annual and quarterly work plans. They should facilitate a quarterly assessment of progress and problems faced.
- IUCN should train district and regional staff in correct financial procedures.
- Regional accountant should monitor quarterly budgets and ensure correct financial procedures are followed.
- IUCN Eastern Africa Regional Office should conduct annual audit on Programme's financial accounts. This office should also organise end-of-phase external audit. Results of these audits should be reported to all Programme partners.
- Programme Coordinator should report to Regional Administrative Secretary on at least a quarterly basis, highlighting issues and actions needed to address these.
- Regional Steering Committee should meet at least every six months to monitor progress and agree on key issues.

8.8 Livelihoods of coastal communities improved through use of sustainable fishery practices in Programme villages

The results of the coral reef survey (Horrill, 1997) and the fisheries consultancy (Beckley *et al.* 1997) clearly show that the reef fisheries are being overfished. Moreover, many of the reefs supporting the reef fishery are in poor condition through the use of destructive fishing techniques.

Overfishing occurs when fish catches fall but fishing pressure is kept constant or increased. This often leads to the use of more destructive fishing gears in an attempt to maintain catch levels. Although the use of these gears maintain catches in the short-term, the problem of overfishing becomes much worse as fish stocks decline further. Thus, in order to establish sustainable fisheries practices, the Programme actions must address the recovery of low fish stocks, the reduction or elimination of legal but destructive fishing techniques and reduce fishing pressure on reef fisheries. General strategies to be employed will be:

- 1) action plans that address the recovery of reef fish stocks and the reduction of legal but destructive gears; and
- 2) the development of alternatives to reef fishing/collecting activities, i.e. mariculture and pelagic fisheries.

Guidelines

Management action plans that address recovery of reef fish stocks and destructive gears

- Results of the reef survey and fisheries consultancy should be fed back to the communities that use the resources. This should not just be confined to the pilot villages but also should include other villagers that also utilise the reef used by the pilot villagers.
- These plans should have a clear purpose, principles, results, indicators, actions to achieve results and a monitoring programme to evaluate impact of actions. The latter two includes who will do what, when.
- Plans that address the recovery of fish stocks should include long term reef closures (Beckley *et al.* 1997).
- Reefs to be closed should be in good condition with better than average standing fish stocks to increase the rate of recovery (Beckley *et al.* 1997).
- Agreed priority actions which do not require new legislation should be implemented. Like the planning stage, this should also involve resource users from other villages using the reefs and not just the pilot villagers.
- District should seek agreement of District Councils and central government for any changes in legislation required to support priority actions. This would include the formulation of village and district by-laws as well as central government regulations.
- Regional advisor should be trained in coral reef management to lessen reliance on outside expertise. Training should include basic reef ecology, monitoring and evaluation techniques, strengths and weaknesses of different management options, data handling and analysis, results presentation and feed back.
- Six district staff (two for each district) should be trained in basic fisheries management including monitoring.
- One Programme team member should be given overall responsibility for monitoring fisheries management activities and trained to Master of Science (MSc) level to be able to accomplish this role. The MSc work should be by research in a fisheries management topic reflecting the priorities of the Programme and be conducted in Tanga.

- Plans should also address the reduction of legal but destructive gears. Currently there are two main gear types that are destructive but not covered by current legislation. These are the use of small mesh beach seines and fishing by trawlers. Actions required to deal with each of these techniques are different and are presented separately.

Seine Nets Identify information required to assess feasibility of exchanging small mesh nets for larger mesh nets.
Collect information identified above and evaluate feasibility of net exchange.
Initiate trial of net exchange and monitor impact on users and resources.
Report information and recommend actions to District Council and Director of Fisheries.

Trawlers Villagers and local government staff should record numbers of trawlers, their position and activity. Special note should be taken of fish dumping and trawling close to reefs.
This monitoring should be periodically evaluated by the region along with the villagers and district staff.
Information and recommended actions reported to District Council and Director of Fisheries.

Reduce fishing pressure of reef fisheries through developing pelagic fisheries

- Trials of fish attracting devices should be established for small pelagic fishes, such as skipjack tuna and bonito.
- Appropriate fish aggregating devices should be identified through participatory analysis of different options.
- Users should identify and agree areas of use, use rights, maintenance and monitoring of effectiveness for any devices installed.
- Districts should facilitate the negotiation and signing of formal agreement between different villages and villager groups.
- Trials should be implemented under the conditions of the agreement. Their impacts on users, effort, catch rates, fish stocks should be monitored.
- Trials should be evaluated and future management actions identified based on the above information.

Reduce fishing pressure on reef fisheries through developing mariculture alternatives

- The trials for seaweed raft method, oysters, cage culture and prawn farming should be evaluated and results written and distributed.
- Field days should be conducted at each site to explain the trials to other interested villagers. Target groups for each trial will be different, e.g. women for oysters and seaweed raft, cage culture for fishermen to help reduce fishing pressure on the reef.
- People from villages with similar biophysical environment should be invited to the field days (see Katz and Zuberi 1995).
- 'Early adopters' should be assisted with advice and funds to prepare plans, provide them with the necessary materials, and monitor their progress. Again the Programme should target the poor, women, and fishermen who may reduce their reef fishing if mariculture is successful.
- The adoption of tested trials should be assessed to see if they are reducing reef fishing and reducing poverty, and whether new trials will be of benefit.
- Mariculture advisory committee should review the assessments of trials and advise and assist on expanding successful trials.

8.9. Improved and sustainable agricultural practices promoted as an alternative coastal resource use in Programme villages.

The development of alternative economic activities to reduce pressure on coastal resources (specifically the coral reef fishery and the mangroves) and increase income security is necessary. Achievements in phase 1 were limited. Risk is a large part of developing alternative economic activities. Coastal villagers cannot afford to gamble their already precarious livelihoods. New alternative enterprises require testing for feasibility and also need markets for their products. For these reasons, phase 2 will focus only on mariculture (as outlined above in section 8.8) and agriculture.

Agriculture is the second most important economic activity on Tanga's coast and one which people are familiar with. Production is low but some of the constraints to production are well understood. Dealing with these should be relatively risk free. Technical expertise is available locally through the government agriculture department and through other development programmes. The promotion of environmentally sound agricultural practices is also vital in reducing threats to coastal resources from chemical pollutants and soil erosion and run-off. Markets for agricultural produce are also available locally.

The Programme's strategy will be to assess the potential for improving existing farming systems (vermin control, timely advice on sound practices) and for developing alternative systems using locally available expertise. Systems which will be looked into include horticulture, dairy production and agro-forestry. Stronger links will be forged with the Agriculture Department and an Agricultural Regional Advisor will be recruited to provide technical advice to the districts. The Programme will make grant funds available for trials.

Guidelines

Improving existing farming systems

- A Regional Agricultural Advisor should be recruited to the Programme team.
- The Regional Agricultural Advisor should consult regularly with the National Agriculture and Livestock Extension and Research Programme (NALERP) for advice on best, environmentally sound practices and ensure this information is passed on to districts and villages.
- The action plans of phase 1 villages relating to vermin control should be reviewed to determine what has been achieved and what problems are outstanding. New action plans should be formulated with agriculture staff (vermin control officers) providing technical advice on options for actions.
- The district staff and regional advisor should facilitate village committee with interested farmers to put in place a monitoring system to assess crop damage by vermin, i.e. where crop damage is occurring, area affected, extent of the damage and critical periods.

Assessing potential and trials for new systems

- A team of local agricultural experts should be contracted to conduct a participatory assessment of the potential in Phase 1 villages for development of horticulture, agro-forestry and dairy farming. This assessment should look at technical and environmental as well as social and economic feasibility, and should propose how these activities might be pilot tested.
- The results of this assessment should be fed back to the districts and the participating villages.
- Using the results of the assessment, interested villagers should be identified to conduct trials. Action plans should be developed with them which include how the trial will be monitored. Selection of villagers to conduct trials should ensure that participants include those currently using the coral reef fishery or mangroves. This will help to assess the suitability of agriculture as an alternative to fishing and use of the mangroves.
- Grants should be provided to cover specific costs for establishing trials.
- Field days should be organised for other farmers to learn about the trial activities. These field days should be organised periodically so that interested villagers can learn about the different stages.
- Study tours should be organised so that farmers can visit the Zanzibar Cash Crop Project or similar projects.

8.10 Conservation, equitable access and sustainable use of forest resources secured for Programme villages.

Coastal forests and mangroves are used to provide coastal villagers with fuelwood, household building materials, boat materials, honey and medicines. They also supply commercial quantities of fuelwood and building materials. In phase 2, the Programme will complete several trials started in phase 1, to establish and monitor formal management agreements which set out use rights and limits for coastal villagers, in collaboration with district and regional government authorities.

Kipumbwi and nearby Sange villages in Pangani district will finalise their draft management agreement with Department of Forestry and Beekeeping. Management blocks and silviculture practices will be agreed and monitored. Different methods of regenerating used blocks will also be explored. This management agreement, and the process used to establish it, could prove to be a useful model for establishing others throughout Tanzania.

At Kigombe, in Muheza district, agreements to establish woodlots were drafted. One was agreed with a women's group, another with a men's group. These will be established and monitored for their impact on the villagers' socio-economic well-being and that of their environment.

In addition, the rapid appraisal of coastal forests started in phase 1 should be continued. Once completed, they can be used for developing an overall strategic programme for coastal forest use and management. This programme should be developed in cooperation with the Catchment Forestry Project.

Guidelines

Collaborative mangrove management agreement established

- Regional advisor and Mangrove Management Project should determine silviculture and rehabilitation regimes for individual management blocks. Baselines to monitor ecological health of mangroves should be established for each block.
- Negotiations on management agreement should be finalised between villages and government which include controlled resource rights to identified blocks with agreed silvicultural systems, roles and responsibilities of parties, benefits, distribution arrangements, revenue sharing arrangements, regulations for control, enforcement procedures.
- Regional advisor should seek formal approval from Director of Forestry for the management agreement.
- Regional advisor, along with district staff, should ensure that silvicultural regimes are followed and monitored.
- Village users and district staff should be trained to undertake ongoing monitoring of resource use, state of mangrove blocks, equity in resource access and self-reliance in forest management organisation.
- Rehabilitation of degraded blocks should commence and be monitored.

- Regional advisor should facilitate annual review of monitoring results with village users and district staff. Details of management agreement should be adjusted if required.
- Regional advisor should arrange for a Masters student from a Tanzanian university to undertake study on sustainable management practices for mangroves.
- Student and regional advisor should agree silviculture options with users.
- Student should undertake ecological baselines.
- Results of study should be reviewed by users and compiled into management guidelines.
- Guidelines should be refined for establishing collaborative mangrove management and presented to Director of Forestry.
- Training modules and materials should be prepared for field workers on establishing collaborative mangrove management.

Woodlot plantation agreements established

- District technical team should assist Kigombe committees to finalise management agreements on woodlots. It should also provide ongoing technical advice on any problems encountered.
- Extension workers should assist any Programme village groups or individuals that want to establish woodlots or plantations, using pair-wise ranking and matrix approach. Groups should be assisted to develop a management agreement.
- Regional advisor with district technical teams should conduct annual review of monitoring results with village users and adjust details of management agreement, if required.

Coastal forest assessments completed

- All district forestry (and natural resources) staff should be trained in participatory appraisal techniques and collaborative management process.
- District technical teams should complete rapid forest assessment for each district.
- Rapid assessments should be used to establish village-based management information system for district and region.
- District technical teams should develop overall vision and strategies, and three-year priorities for management of coastal forests in their district.
- District Councils should agree on priority work programmes.

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APPENDICES



List of Appendices

		Page
1	List of Staff in Phase 1	A1
2	Changes to Programme Results	A3
3	Logical Framework for Phase 1	A7
4	Steps of the Participatory Process	A16
5	Training Programme for Regional and District Staff	A18
6	Training Programme for Extension Workers	A19
7	Training Programme for Villagers and Extension Workers	A20
8	Example of a completed Forest Assessment Form	A21
9	Draft Kipumbwi Mangrove Management Plan	A27
10	Pilot Village Evaluation of Phase 1 and Recommendations for Phase 2	A32
11	Recommendations from Extension Workers for Phase 2	A34
12	Recommendations for Phase 2 Planning	A35
13	Logical Framework for Phase 2	A41
14	Discussion Paper on Selection of Extension Workers	A49
15	Outline of Information Needs for Socio Economic Assessment	A51
16	Barometer of Sustainability	A52
17	Frameworks for Gender Analysis	A53
18	Format for Assessing Gender Equity of Direct Material Assistance	A54



Appendix 1 (ref. Chap 2.2)

Programme and Key Government Staff in Phase 1 (June 1997)

A. Regional Coordinators

Programme Coordinator	Mr. Solomon Makoloweka
Community Development	Mr. George Uronu
Awareness, Education and Training	Ms. Claudia Kawau
Coral Reef and Fisheries	Mr. Hassan Kalombo
Mariculture	Mr. Lugazo Zuberi
Coastal Forests and Mangroves	Mr. Lucien Massawe

B. Technical Advisors

Chief Technical Advisor	Ms. Kath Shureliff
Community Development	Ms. Monica Gorman
Awareness Education and Training	Ms. Trudy van Ingen
Coral Reef & Fisheries	Dr. Chris Horill

C. District Technical Teams

(i) Pangani

District Executive Director	Mr. C. Msoffe
District Planning Officer	Mr. E. Kimaro
District Natural Resources Officer	Mr. A. Amin
District Community Development Officer	Mr. H.H. Lukuta
District Agriculture	Mr. A.R. Sarai
District Coordinator	Mr. E. Mgongo
Ward Executive Officer Kipumbwi	Mr. A. Kipanga

(ii) Tanga

Municipal Director	Mr. H. Seif
Municipal Planning Officer	Ms. Malange
Municipal Natural Resources Officer	Mr. M. Dengo
Municipal Community Development Officer	Ms. L. Wickama
Municipal Agriculture and Livestock Officer	Ms. Bahunda
Municipal Coordinator	Mr. M. Dengo
Ward Executive Officer Tangazisi	Ms. M. Hamza

(iii) Muheza

District Executive Director	Ms. T. Mshakangoto
District Planning Officer	Mr. L. Shauri
District Natural Resources Officer	Mr. F. Makumba
District Community Development Officer	Mr. A. Hatibu
District Agriculture and Livestock Officer	Dr. I. Mwezimpya
District Coordinator	Mr. L. Kuziwa
Ward Executive Officer	Mr. L. Kassanda

D. Extension Workers

(i) Pangani

General Extension Worker	Ms. A. Mfiko
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(ii) Tanga

General Extension Worker	Mr. A. Mfiko
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(iii) Tanga

General Extension Worker	Ms. H. Kwalloh
General Extension Worker	Mr. M. Mahanyu
Village Extension Worker - community development	Mr. Y. Seumber
Village Extension Worker - agriculture	Mr. Mtera
Fisheries Officer (patrols)	Mr. A.M. Yasin

(iii) Muheza

General Extension Worker	Ms. R. Mowha
General Extension Worker	Mr. M. Mfuko
Village Extension Worker - community development	Mr. L. Challenge
Village Extension Worker- beekeeping	Mr. J. Kabamba
Fisheries Officer	Mr. D. Mdoe

E. Support Staff

Administrator	Mr. A. Mshote
Accountant	Mr. W. Karia
Assistant Accountant	Ms. A. Abdulahi
Secretary	Ms. S. Salum
Secretary	Ms. Z. Mhando
Officer Attendant	Mr. H. Mbwana

F. Short Term Consultants

(i) Technical Advice

Mariculture	Dr. A. Katz
Traditional Management	Mr. D. Scheinman and Ms. A. Mabrook
Coastal Forests	Mr. M. Nurse of LTS International, Edinburg, Scotland
Fisheries Management	Dr. L. Beckley, Dr. B. Mann, Dr. A. Govender and Dr. R. van der Elst of Oceanographic Research Institute, Durban, South Africa
Community Development Fund and Databases	Mr. D. Kobb
Soil Analysis	Mr. Mbogoni of National Soil Service, Mlingano, Tanga, Tanzania.

(ii) Training

Training Needs Assessment	Mr. P.V. Chiwile and Mr. H. Salenge
Communications skills	Mr. J. Kallabaka and Mr. J. Kidunda
Animation and Training of Trainers	Mr. J. Kallabaka
Coastal Culture	Mr. E.L. Siagi Kassim
Facilitation of Regional Workshops	Ms. E. Ngido and Mr. D. Massawe
Business Management	Mr. H. Mwadzaya of Kenyan Wildlife Service
Community Based Project Management	Mr. B. Mutie and Mr. Ngundo of TRAUDS-AFRICA, Nairobi, Kenya
Mariculture	Dr. Y. Mgaya and Mr. Tanahtamah, Of University of Dar es Salaam
Swahili Language Training for Technical Advisors	Mr. O.B. Kopoka

Changes to Programme's Results (order follows that in the approved Logical Framework)

Original Proposal 1993 (approved by Irish Aid)	Internal Review 11/95 (interim working version)	Logical Framework 1/96 (approved by Reg Steer Ctee)	Reasons for Changes
Strengthen institutional capacity and coordination mechanisms		Proposals developed for regional and district coordinating agencies	Original objective was too broad Need for regional-based mechanisms; ongoing reviews of national legislation considered in technical workshops
Organisation of at least 1 C/M workshop each year Foster 2-way communication		Established forum to promote participation of all key stakeholders	As well as regional wkshp, have added seminars for commercial users
-Enhance awareness of need for management of reef fisheries, (and supply support to promote sustainable fishery and management practices and restore degraded environments) -Enhance awareness of need for management of mangroves, forests, wildlife, and enhance capacity for sustainable forestry, management and restore degraded environments -Increase awareness and understanding among coastal residents of relevant ... -Promote community participation in coastal development and resource plans -Strengthen capacity of extension officers to promote participatory management	-Tanga regional & 3 district government agencies with sufficient number of trained officers who can produce, implement and review an integrated coastal management plan -Primary school children from pilots have awareness to support village actions -At least 3 community groups with organisation to coordinate actions -District extension staff trained and able to facilitate villagers of pilot villages	Regional, district, village government running resource management activities, through the programme	Original objectives too broad
		Streamlined prosecution system for control of illegal use or harvesting of coastal natural resources	Poor enforcement identified as critical issue in socio-economic baseline, traditional management report
		Pilot villages empowered to control destructive and illegal practices	Poor enforcement identified as critical issue in socio-economic baseline, traditional management report

<p>Strengthen institutional capacity and coordination mechanisms</p>	<p>-At least one district with revised by-laws to deal more effectively with environmental issues -Regional, district and community authorities from different sectors actively supporting collaborative management of coastal resources</p>	<p>District governments actively support collaborative management with village government</p>	<p>Original objective too broad</p>
<p>Diversity range of income-generating opportunities</p>		<p>Community development fund in place, stimulating more sustainable use of resources throughout the coastal area</p>	<p>Two main methods used: CD fund and mariculture trials</p>
<p>Strengthen institutional capacity and coordination mechanisms</p>	<p>-Political will and commitment to successfully implement the plan during phase II -Regional, district and community authorities from different sectors actively supporting collaborative management of coastal resources</p>	<p>Submissions made to national authorities for policies and legislation to support regional programme activities</p>	<p>Original objective too broad Mechanisms or strategies should be based upon experience of what works</p>
<p>Integrated coastal zone management plan</p>	<p>-Completed integrated management plan which addresses the top priority environmental issues by setting out strategies that can be implemented in phase II -Means to implement and review the plan in phase II of the programme -Strategies in place to ensure programme activities are sustainable long-term -Proposed strategies for promoting community organisations</p>	<p>Phase II implementation plan and integrated strategies for improved coastal management</p>	<p>Internal review recommended that plan be practical and implementable Strategies developed for further testing in phase II; a final "plan" developed on the basis of outcomes of phase II</p>

<ul style="list-style-type: none"> -Reef mapping, classification and management -Determine uses, degradation, structure extent of coastal forests -Determine fuelwood sources for fish makers -Determine distribution status, management needs of wildlife -Collect socio-economic information 	<p>All coral reefs in the region mapped and classified</p> <p>Updated information on the uses, degree of degradation, structure and extent of coastal forests and mangroves</p> <p>Updated information on fuelwood requirements and supply strategies for key users</p> <p>Updated information on uses, distribution status and management needs of wildlife</p> <p>Updated socio-economic information</p>	<p>Baselines established for monitoring status of coastal resources and their uses</p> <p>Targets marine mammals, shorebirds, priority land vertebrates</p>	<p>Need to focus on important groups of species, cannot be done in Phase I for logistical reasons</p>
<p>Conserve viable remnants of coastal forests</p>			<p>Dropped as outcome for Phase I, only basic participatory assessment done</p>
<p>Restore damaged reefs and monitor recovery</p>	<p>Restoration of damaged reefs initiated and recovery monitoring in place</p>	<p>Working examples of coral reef management programme established</p>	<p>Deleted, not possible until effective enforcement is established</p>
<ul style="list-style-type: none"> -Enhance awareness of need for management of reef fisheries, and supply support to promote sustainable fishery and management practices and restore degraded environments -Formulate overall strategy for reef management including fishery management plan and management plan for Tanga Coral Gardens Reserve 	<ul style="list-style-type: none"> -Agreed reef management strategy, including a reef fisheries strategy and recommendations for areas to be proclaimed under the Marine Parks and Reserves Act 1994 -Detailed reef management proposal for implementation in phase II 		<p>Experience from the working examples being used to develop strategy. Management plan for Tanga Coral Gardens Reserve dropped, as never gazetted, and now in poor condition, so not suitable as Marine Reserve (Reg SI Ctee 3/95)</p>
<p>Restore degraded mangroves by ... Develop management for optimisation of products</p>	<p>Mangrove Management Project and other relevant projects' activities integrated into coastal management plan</p>	<p>Working examples of management of mangroves by coastal communities in collaboration with government</p>	<p>MM Plan used as basis for mangrove management trials; 3 trials being developed; 2 replanting; 1 collaborative management</p>

<p>Develop fuelwood strategy based on plantations, trial plots</p>	<ul style="list-style-type: none"> -At least 1 example of user group establishing sustainable fuel supply -At least 1 example of user group dealing with an important wildlife issue -Proposed strategies to manage, rehabilitate forests and wildlife in integrated management plan 	<p>Working examples of management of coastal forests and wildlife by coastal communities in collaboration with government; fuelwood plots being established; vermin control in shambas</p>	<p>Experience from the working examples being used to develop strategy</p>
<p>Diversity range of income-generating opportunities</p>	<ul style="list-style-type: none"> -Coastal communities informed about resource use alternatives -Updated information & advice to communities for diversified range of income-generating opportunities -At least 3 groups involved in alternative income producing activities 	<p>Increased economic opportunities and alternative resource uses made available in the coastal area; through CD fund and mariculture trials</p>	
		<p>Working example of beach pollution control in place</p>	<p>Identified as important issues by socio-economic baseline & in pilot village</p>
		<p>Working examples of villagers controlling coastal erosion</p>	<p>Identified as important issues by socio-economic baseline & in pilot village</p>

LOGICAL FRAMEWORK FOR PHASE I

Overall Objective

To safeguard the resources of the Tanga Region coastal environment for the benefit of present and future generations of residents, through a series of integrated activities aimed at protection, sustainable use and management of coastal zone resources

Indicators

- improved health of coral reefs, fisheries used on sustainable basis
- improved health of mangroves, forests and wildlife: used on sustainable basis
- increased diversity of economic uses of coastal resources
- all sectors with increased access to resources

Verification

- monitoring state of reefs, mangroves, forests;
- govt figures on fish catches, harvest permits
- socio-economic measures

Programme Purpose

Regional, district and village institutions undertaking integrated management of the coastal zone.

Assumptions

- targeted institutions have the political, legal mandate to manage resources
- governments will actively support community decision-making

Programme Purpose

Coastal communities implementing effective management of coral reefs, mangroves, coastal forests and wildlife, including restoring degraded environments.

- 3 village plans, that deal with 2 priority environment issues;
- > 80% of targets met
- integrated coastal zone strategies for phase II demonstration
- increase in environment issues covered by laws, management plans

Assumptions

- written plans; monitoring reports
- check written by laws
- evaluation mission
- repeat PAR baseline
- check action plans
- village monitoring
- village meeting minutes
- evaluation mission
- villagers willing and able to take actions
- alternative uses can be found with suitable markets
- enforcement can be effective

- 3 village action plans that deal with the priority issues
- > 30% pilot villagers working on action plans
- > 3 new types of resource uses being practised
- at least 3 eggs of degraded coral reefs, coastal forests being restored
- all pilot villages feel empowered to manage their own resources

RESULTS and ACTIVITIES

A. Enhanced institutional capacity

1-Proposals for regional, district coordinating agencies

- 1 Regional steering committee strengthened by expanded membership and terms of reference.
- 2 Future composition of coordinating agency determined and agreed.
- 3 A proposal submitted to central government for the legal establishment of a regional coordinating body.
- 4 District steering committees strengthened through expanded membership and terms of reference.
- 5 Proposals submitted for the establishment of permanent steering committees.

2- Established forum to promote participation of all stakeholders

- 1 Identify key stakeholders, particularly those who have major impact on uses of coastal resources
- 2 Seminars to raise issues and discuss options for action.
- 3 Regional workshop of all stakeholders held each year to recommend and review implementation of management actions.

Indicators	Verification	Assumptions
<ul style="list-style-type: none"> -new terms of reference approved -meetings & decisions made -agreement documented -submission made -new terms of reference approved -agreement documented -submissions made 	<ul style="list-style-type: none"> -check documents -minutes of meetings 	<ul style="list-style-type: none"> -coordinating agencies have the mandate -coordinating agencies have resources and expertise to achieve coordination.
<ul style="list-style-type: none"> -list of stakeholders & report on impacts - number of seminars held, action plans -workshops held with recommendations; action plans 	<ul style="list-style-type: none"> -socio-economic baseline -records of seminars -workshop records 	<ul style="list-style-type: none"> -key users willing to participate

Results and Activities

3- Regional, district, village personnel running resource management activities, through the programme

- 1 Relevant regional staff trained in planning, supervision, basics of coastal ecology and integrated coastal zone management.
- 2 Relevant district staff trained in programme planning, supervision, basics of coastal ecology and integrated coastal zone management.
- 3 Proposal submitted for the improvement of the supervision of fisheries inspection officers produced.
- 4 Extension workers of different departments trained in skills to support coastal communities to identify, analyse and manage their resource-use issues.
- 5 Members of pilot villages able to identify, analyse, manage and monitor solutions for their resource-use related issues.
- 6 Members of pilot villages trained in specific skills to plan and implement solutions which solve their specific issues.
- 7 Committees in pilot villages dealing with resource-use related issues and resolving resource use conflicts.
- 8 Primary school children of pilot villages aware of coastal environmental issues and actively supporting village activities.

Indicators	Verification	Assumptions
-regional heads NR,ALD,CD, Plan,IG,For,Fish,Wild -district heads For,Fish,Wild, CD,Plan	-evaluation reports of training course -staff appraisals	-suitable people identified & willing to learn new skills -staff, once trained, stay with the programme
-work plans and reports completed by region, districts	-check reports	
-proposal written & plan for Phase II	-check document	
-20 extension workers trained and using skills	-evaluation reports of training course	
-action plans & progress reports from each pilot villages; 80% achieved	-quarterly feedback mtgs.	-villagers willing to act on issues
-100 villagers trained in basic business skills & micro-plan; other training as determined -2 eggs. of conflicts identified & brought before each committee	-minutes of mtgs; quarterly feedback meetings	-villagers willing & able to participate in training -committee members skilled in conflict resolution -villagers willing to bring issues to committees
-2 teachers/village trained; 1 class per village taught		-villagers & non-villagers accept authority of committees

Results and Activities	Indicators	Verification	Assumptions
<p>4 - Streamlined prosecution system for control of illegal use or harvesting of coastal natural resources</p> <p>1 Agreement reached with magistrates and police for higher priority for destructive fishing cases.</p> <p>2 Two candidates for prosecutor role identified and trained.</p> <p>3 Weaknesses of enforcement mechanisms identified.</p>	<p>-cases heard within set time limit; increase % prosecutions successful</p> <p>-2 people successfully trained</p> <p>-report</p>	<p>-police & court records</p> <p>-prosecutors in place</p> <p>-check report</p>	<p>-magistrates & police willing to make agreement</p> <p>-resources available for police to complete cases</p> <p>-suitable candidates in place</p>
<p>5- Pilot villages empowered to control destructive and illegal practices.</p> <p>1 At least one pilot village has formulated and implemented by-laws.</p> <p>2 Trials to control destructive practices in at least 1 pilot village.</p> <p>3 Training needs for enforcement identified.</p> <p>4 Weaknesses of enforcement mechanisms identified.</p> <p>5 Proposal for retraining of dynamite fishermen.</p>	<p>-by-laws in place in 1 village</p> <p>-action plans & implemented</p> <p>-report</p> <p>-proposal</p>	<p>-check by-laws</p> <p>-monitoring & evaluation reports</p> <p>-check report</p> <p>-check report</p>	<p>-villages willing & able to formulate by-laws; control destructive practices</p> <p>-dynamiters willing to be involved legally</p>
<p>6 - Submissions made to national authorities for policies and legislation to support regional programme activities</p> <p>1 Submission made to Division of Fisheries & NEMC for policy on coral reef management based on programme experiences.</p> <p>2 Submission made to Division of Fisheries & NEMC on need for zoning system to manage shipping, commercial fishing and artisanal fisheries, based on programme's experiences.</p>	<p>-3 submissions made</p>	<p>-check documents</p>	<p>-sufficient experience is obtained to make good submissions</p> <p>-national authorities prepared to respond to programme submissions</p>

Results and Activities	Indicators	Verification	Assumptions
<p>3 Submission made to NEMC on a regional development plan and use of environmental impact assessments for tourism and industrial developments based on programme's experiences.</p>			
<p>7- District governments actively support collaborative management</p>			
<p>1 District by-laws concerning management of coastal natural resources reviewed, formulated and implemented by the District Councils.</p>	<p>-1 district with environment by-laws approved by central govt & being enforced</p>	<p>-check by-laws & enforcement</p>	<p>-districts have priority to review by-laws; central govt deal with proposals promptly</p>
<p>2 By-laws for pilot villages approved by District Councils.</p>	<p>-3 pilot villages with by-laws approved</p>	<p>-check records</p>	<p>-district technical teams have expertise to advise on management effectiveness of by-laws; districts accept by-laws</p>
<p>3 Proposed land/sea-use plan including titles developed for at least one pilot village, in collaboration with relevant government authorities.</p>	<p>- plan written in 1 village</p>	<p>-check document</p>	<p>-districts support collaborative sea titles feasible</p> <p>-sufficient progress made in 1 village to develop plan</p>
<p>8 - Community development fund in place, stimulating more sustainable use of resources</p>			
<p>1 Community development fund effectively administered by district authorities.</p>	<p>-100% funds disbursed; -6 projects completed</p>	<p>-district technical teams' monitoring reports</p>	<p>-district teams have access to skills to administer fund; e.g. budgeting</p>
<p>2 Community development fund in operation in at least two villages in each district.</p>	<p>-progress reports on projects</p>	<p>-evaluation report</p>	<p>-reasonable project proposals developed by villages</p>

Results and Activities

9- Phase II implementation plan and funding proposal

- 1 Further needs on regional offices' personnel training, funds, equipment and policy for next three years (1997-2000) identified and a proposal produced for acquiring these needs.
- 2 Further needs on district offices; personnel training, funds, equipment and policy for next three years (1997-2000) identified and proposals produced for acquiring these needs.
- 3 Future training needs at village level identified and training plan for next phase formulated.
- 4 Strategies to apply pilot lessons in the demonstration phase II

B - Coastal communities implementing effective management

1- Participatory appraisals to establish monitoring baselines of coastal resources

- 1 Reefs surveyed, mapped and status assessed.
- 2 All coastal forests identified and mapped with management status and responsibilities.
- 3 Areas, indicator species composition, users, levels of use, social values, sustainable levels of harvesting of coastal forests assessed.
- 4 Important areas mapped and identified for turtles.
- 5 Two aerial surveys done and discussions with villagers on presence of marine mammals and seagrass patches
- 6 Monitor seabirds and waders and identify important

Indicators

-needs assessment reports

Verification

-check reports

Assumptions

-sufficient experience obtained to develop strategies

-phase II proposal

-documents

-maps & summary reports of current status of coral reefs, coastal forests, coastal & marine vertebrates, socio-economic

-check reports

-suitable plane available

Results and Activities	Indicators	Verification	Assumptions
7 Socio-economic baseline, including traditional sites, management practices.			
2 - Working examples of coral reef management established			
1 Coral reef and fisheries management trials established in at least 1 pilot village.	-action plans & implementation in 1 village	-monitoring & evaluation reports	-villagers willing & able to try management
2 Feasibility determined for reef zoning and access rights.	-report	-check report	-need for zoning established
3 Passive reef restoration trials initiated in at least one village.	- action plans & implementation	-monitoring & evaluation reports	-reefs can be effectively protected from destructive practices
3 - Working examples of management of mangroves established			
1 Areas of large-scale degradation identified and 20% replanted.	-50% degraded areas replanted in pilot villages	-field visits: village monitoring reports	-agreement can be reached with Mangrove Management Project on objectives and approaches
2 Sustainable harvest levels estimated.	-report	-check report	-key users willing to participate
3 Key users of mangroves identified and hold at least 1 seminar with them.	-seminars held, action plans	-records of seminars	
4 Trials of collaborative management for use of mangroves in 1 pilot village.	-action plans & implementation	-monitoring & evaluation reports	-villagers willing & able to control mangrove use
5 1 pilot village establishes by-laws to help control use of mangroves.	-by-laws in place in 1 village	-check by-laws	

Results and Activities	Indicators	Verification	Assumptions
4- Working examples of management of coastal forests and wildlife established 1 Proposed programme of reforestation of woodlots for poles and fuel in 1 pilot village. 2 Trials of collaborative management of native forests for fuelwood and building material in 1 pilot village. 3 Two pilot villages test control of vermin through shamba clearing, trapping and shooting.	-action plans & implementation -action plans & implementation -action plans & implementation	-monitoring & evaluation reports -monitoring & evaluation reports	-villagers willing & able to conduct trials -govt willing to do collaborative management
5- Working examples of new coastal resources uses for economic diversity 1 Potential for mariculture in Tanga's coastal zone assessed and potential sites identified. 2 At least 1 trial of an alternative activity carried out in each pilot village. 3 At least 2 groups assisted by the community development fund to conduct trial alternatives outside the pilot villages. 4 Basic business management training provided to those involved in 2 and 3 above.	-sites mapped, report -action plans & implementation for 5 examples -100 villagers trained & using skills	-check reports -monitoring & evaluation reports -evaluation of training	-suitable consultant available -suitable alternatives & sufficient time available to conduct trials -Com Develop Fund administration in place -suitable trainer available, trainers have skills to train
6- Working example of beach pollution control in place 1 Participatory assessment of sanitation needs and problems in pilot villages. 2 Sanitation plans developed for 1 pilot village through liaison with district health authorities.	-assessment report & agreement in 3 pilots -action plans in 1 village	-check report -monitoring & evaluation reports	-health officials available to assist -villagers prepared to act on issues

Appendix 4 (ref. Chap 6.1)

Phase I: Steps in the Village Participatory Process

1. ***Training of staff and identification of priority issues***

Training of extension workers was preceded by a

 - December 1994: Conduct of a training needs assessment for the extension workers of the coastal zone.
 - January/February 1995: Training of extension staff in participatory rural appraisal skills.
 - March/April 1995: participatory socio-economic assessment in 9 coastal villages to look at resource use patterns and priority issues.
 - May 1995: Feedback of the results of the study to participating villages.
 - June 1995: First Regional Workshop which prioritised the issues which the programme should deal with in Phase I. Participants included village representatives, staff from regional and district levels of government, and some representatives of other development projects and commercial interests.
 - July 1995: Feedback of the outcome of the Regional Workshop to all coastal villages.
 - July 1995: Selection by each district of one pilot village from those involved in the socio-economic study. Selection criteria included the interest and willingness of the villagers to tackle problems of environmental destruction, and level of dependance on coastal resources.
 - July 1995: Selection of extension workers from the departments of community development, natural resources (fisheries, forestry & beekeeping), and agriculture. A multi-disciplinary team of 4 was selected for each village. It was recognised that in the long term it would not be possible for 4 extension workers to be placed in one village but it was justified for the pilot phase as the approach they were using (animation) was new and the mutual support would be beneficial. It would also enable more extension workers to develop their skills and experience so that they could later move to other villages.
 - August 1995: Training of extension workers as 'animators' to enable them to facilitate villagers rather than the traditional directive role of government staff.
2. ***Detailed investigation of the issues and organisation to act.***

September/October 1995: Placement of the extension workers in the pilot villages and their facilitation of villagers to analyse the causes and consequences of their problems and possible solutions. They did this with as many different groups as possible so that a broad representation of village interests was ensured.

 - November 1995: Formation of village committees to oversee action planning and implementation. The villagers themselves decided that committees were necessary.
 - November/December 1995: Training of extension workers and village committee members in 'micro-planning' - how to formulate action plans with clear achievable objectives and actions to achieve them.
3. ***Developing and Implementing Plans***
 - December 1995/January 1996: Village action planning - plans were formulated on a 6 monthly basis. At the end of each 6 months progress was reviewed and new action plans were formulated for the next 6 months.
 - From November 1995: Follow-up Visits by Regional Coordinators and members of District Technical Teams were conducted regularly to supervise and support the extension workers and committees and provide specific technical advice. These

Results and Activities

7- Working examples of coastal erosion control in place

- 1 Simple, alternative ways of controlling erosion assessed.
- 2 Erosion control trials conducted in 2 pilot villages, using different plant species.
- 3 Village by-laws in at least 1 village to control collection of sand and stones, and set-backs.

Indicators

- information available
- action plans & implementation
- by-laws in place

Verification

- documents
- monitoring & evaluation reports
- check by-laws

Assumptions

- suitable alternatives available
- villagers willing & able to act
- by-laws can be enforced

included attendance at meetings in the villages to develop fisheries management plans; and visits by specific technical officers for advice on vermin control, planting of mangroves, etc.

- From December 1995: Feedback meetings were held to review progress and discuss problems. These meetings started with the extension workers and were held every two months in Tanga. Gradually more and more villagers were involved, until it was agreed that separate feedback meetings be held in each pilot village enabling all committee members to participate and ensuring that their specific problems were dealt with. Self evaluation by the committees is encouraged in these meetings. The District Technical Teams and some of the Regional Coordinators participate also. They are now held quarterly.

- Study Tours and Village Exchanges: In 1996 a number of villagers went on study tours to Zanzibar, Pemba and Kenya to see how people there are tackling similar issues to Tanga. They found the study tours very useful both for learning new ideas and building confidence. A number of exchange visits also took place between people from the pilot villages. When the feedback meetings were shifted to take place in the villages, 2 representatives from each other pilot village would attend these meetings. These exchanges enabled villagers to learn from each other and helped build solidarity between them.

- Technical Training for villagers: From mid 1996 to early 1997 a number of villagers were trained in specific technical skills in response to their requests. These skills included making fuel efficient stoves, building cheap latrines, tree seed handling and nursery skills, village game scout, beekeeping and basic business management.

- October/November 1996: An assessment was carried out in each pilot village to evaluate awareness of and support for the activities of the environmental committees, as well as the participation of different groups in the committees and their activities. The aim was to come up with firm recommendations for the committees to overcome recurring problems with public participation. The conclusion was that generally most villagers are aware of what the committees are doing and are generally in agreement with it. However most people have not actually attended meetings, and few have participated in actual activities. Women generally felt that the issues the committees are dealing with are priorities for them. At the next feedback meeting committee members discussed the conclusions and came up with their own firm proposals for improving participation. e.g. hold more public meetings, and have schedules with the 10 cell leaders for participation in activities such as patrols or mangrove planting. In some villages they felt they ought to 'mobilise' the youth to form environmental clubs, something they had learned of from study tours.

- May 1997: A participatory assessment was conducted in the 3 pilot villages to find out what villagers (non-committee members also) felt had been the most important steps in the first phase and their recommendations for how the programme should develop in phase 2. This exercise took place before the planning mission for phase 2 and the results fed into it

Appendix 5 (ref. Chap 6.4)

Training Course Programme for Regional and District Government staff

When	Course	Participants*	Instructors/ facilitators*
February & May 1995 (3 and 4 days)	Problem analysis and programme planning and time-management	Programme coordinators and Technical Advisors	Trudy van Ingen (+ Kath Shurcliff)
18 - 19 May 1995	Coastal ecology & Integrated coastal zone management	Programme coordinators and TA's + 3 Regional Natural Resources officers	Chris Horrill (+ Massawe and Kath Shurcliff)
July - Dec. 1995 (1 hour every day)	Computer skills (Intr. in PC's & MSDOS; Windows; WP; Lotus and Database)	Regional & District Coordinators adm. staff	JK Computer centre, Tanga
June 1995 (3 days)	Facilitation skills (to facilitate Regional Workshop)	5 Programme coordinators and 5 extension officers)	Ms. Nguido (Reg. planning officer)
Feb. - March 1996 (4 x 2 days)	Coastal ecology & Integrated coastal zone management	11 Regional staff; 12 District staff from Tanga, 12 from Muheza and 14 from Pangani	Chris Horrill
March - April 1996 (4 x 3 days)	Pilot village approach & comm. based/collaborative management	14 Regional staff; 13 District staff from Tanga, 16 from Muheza and 19 from Pangani	AET; Dc's; villagers; GE's
March - May 1996 (4 x 5 days)	Programme planning; monitoring & supervision	12 Regional staff; 10 District staff from Tanga; 12 from Muheza and 12 from Pangani	Trudy van Ingen + Claudia Kawau
April 1996 (3 days)	Coastal ecology & Integrated coastal zone management	9 primary school teachers + 11 other ward, district & regional education officers	Trudy van Ingen, Nashanda (MMP) + RNRO
4 - 16 November 1996	Community based project management; Operation and Management of comm. projects; Monitoring and evaluation of community projects (see annex)	District Technical Team members of Tanga, Muheza and Pangani + District and Regional Coordinators	TRAUDS training institute from Nairobi
22 - 23 Nov. 1996	Coastal ecology & Integrated coastal zone management	DC's + District magistrates; public prosecutors, inspectors and other staff (total of 26)	Chris Horrill and Hassan Kalombo

TA	Technical Advisor	Do	District Coordinator
Rc	Regional Coordinator	GE	General extension workers
MMP	Mangrove Management Project		
RNRO	Regional Natural Resources Officer	DC	District Commissioner
TRAUDS	Trans Rural and Urban Development Services		

- Most Regional Coordinators have done a Training of Trainers course.
- The Programme Coordinator went to a one month course in Integrated Coastal Zone Management in the US, and to a Programme Officer's Course (5 x 4 weeks) in Arusha.
- The Regional Coral Reef & Fisheries Management Coordinator went to a one month course in Coral Reef and Coastal Zone Management in the Philippines.
- The Regional Mariculture Coordinator went to a 5 weeks "Aquaculture Management" course in the Philippines
- The Regional Awareness, Education and the Awareness, Education and Training Coordinator went to a marine education course for field guides in South Africa.

Training Course Programme for extension workers

Date	Course	Participants*	Instructors/ facilitators
13-17/2/95	Participatory Rural Appraisal Skills	10 EW (SES surveyors)	Gorman, van Ingen, Uronu, Kawau
11-12/7/95	Coastal Ecology	All + CRT	Horill
14-15/8/95	Communication skills	All + IT	Kawau, Gorman, Uronu, Van Ingen
16-18/8/95	Animation & facilitation	All + IT	Kallabaka
22-24/8/95	Analysing skills	All + IT	Van Ingen, Kawau, Uronu, Gorman
25/8/95	Develop work plans	All	Van Ingen, Kawau, Uronu, Gorman
11-12/9/95	Coastal Culture	All + IT	Siagi Kassim
13-15/9/95	Feedback + Planning skills	All	Van Ingen, Kawau, Uronu
17-20/10/95	Feedback on facilitation skills; Collaborative resource management	All	Kallabaka, Van Ingen, Kawau, Gorman + others

EW: Extension Workers
 All: 12 Village extension workers (VEW) from: Community Development (CD), Natural Resources (NR, Forestry & Fisheries), Agriculture & Livestock (A&L) + 6 General extension workers (GE) + 3 District Coordinators (DC)
 CRT: Coral Reef Team (10)
 IT: Interviewing Team (of CR team) (2)

Training Course Programme for villagers and extension workers

Date	Course	Participants*	Instructors/ facilitators
25-27/10/95	Micro-planning	6 GEW, 3 VEW, 3 villagers	Van Ingen, Kawau, Gorman
30/10 - 9/11/95	Training of Trainers	6 GEW, 3 VEW, 3 villagers	Kallabaka
Nov. 1995 (5 days)	Micro-planning in each pilot-village	About 100 villagers	6 GE, 3 VEW, 3 villagers
19/1 - 1/2/96	Training of Trainers	6 villagers, 6 VEW	Kallabaka
5/2 - 2/3/96	Trainers in Business Management skills	6 GEW, 6 VEW, 6 villagers	Mwadzaya
8-17/7/96	Training of Trainers	12 villagers, 11 FEW	Kawau
22/7-8/9/96	Mariculture techniques	8 EW, 18 villagers	Mgaya, Tamatamah
Oct. 1996	Business management skills	Tanga CD Fund recipients	2 Tanga GE
16/10- 26/11/96	Village Game Scouts training	2 villagers	Community based conservation training institute, Songea
Nov. 1996 (2 weeks)	Fuel efficient stoves	13 Villagers; 5 VEW	Buhuri Agr. & Livestock Training Institute
Dec. 1996	Business management skills	56 Muheza CD Fund recipients	2 Muheza GE
Dec. 1996 (7 days)	Bee keeping	10 villagers (Kipumbwi, Seriwani)	Pangani Beekeeping Officer
Jan. 1997	Business management skills	24 Pangani CD Fund recipients	2 Pangani GE
Feb. 1997 (2 weeks)	Nursery techniques & seedling handling	2 villagers	National Tree Seed Programme, Morogoro
Feb. 1997	Business management skills	Pangani CD Fund recipients (Mkwaja)	2 Pangani GE

EW: Extension Workers
 GEW: General Extension Workers
 VEW: Village Extension Workers
 FEW: Fisheries Extension Workers

Appendix 8 (ref. Chap 6.11)

Ministry of Tourism, Natural Resources and Environment
Tanga Coastal Zone Conservation and Development Programme
Forest Profile by Rapid Assessment

The objective of this form is to help you decide, in conjunction with the village profile:

- The management objectives for this forest (i.e. for production, conservation, fulfilment of basic village needs)
- The appropriate constitutional category for this forest (i.e. Government Reserve, Local Authority Forest Reserve, Communal Forest Reserve, Traditional Forest Reserve)
- The priority of this forest for further work

Complete part two for each block of forest, plantation, shrubland or grassland
Attach forest sketch map and any secondary data that may exist

PART ONE. GENERAL INFORMATION (COMPLETE ONCE FOR EACH FOREST)

Name of forest	MWANYUMBA FOREST
Current Constitution	PUBLIC LAND
Legal status of forest land (e.g. government, village, customary, private)	GOVERNMENT
Gazetment (e.g. regional government)	NOT GAZETTED
District	MUHEZA
Ward	MARAMBA
Division	MADAMBE
Village(s)	MWANYUMBA
Sub-villages	MASINI
Information collected by (your name)	MUHAMMADUWA/MASSAWA/KIVUWA/MUHAMMADUWA/JOHN
Date information was collected	23/7/1996

Estimated Area (ha)	?	Measured area (ha)	?
Altitude	?	Aspect	EAST
Topography	FLAT	Rainfall	?

PART TWO: INFORMATION REQUIRED FOR EACH FOREST BLOCK OR TYPE
 MAIN HABITAT TYPE (circle one)

Grassland	Shrubland	Thicket (scrubland)	Woodland (savannah)	Evergreen forest	Deciduous forest	Mixed forest
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Agriculture/cultivation	Plantation
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Write the names of the three most dominant species:

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FOR PLANTATIONS:

Planted	YES/NO	Current stocking (seedlings per hectare)	
Years of Planting		Stocking Class (if planted, circle one)	UNDERSTOCKED, STOCKED, OVERSTOCKED

FOREST CONDITION

In simple form, forest condition is a function of the age of the trees, the density of the main tree canopy and the amount of regeneration or young seedlings present.

Forest Condition Characteristic 1. Age (Circle one)

Mature (main canopy consists of mature trees)	Pole stage (main tree consists of pole stage trees)	Shrubland (main tree canopy is coppice growth)	Any (no canopy, but isolated trees only)
--	---	--	--

Forest Condition Characteristic 2. Canopy density (Circle one)

Dense (crown cover 70% or greater)	Open (crown cover less than 70%)	Very open (No canopy, isolated trees only)
------------------------------------	----------------------------------	---

Forest Condition Characteristic 3. Regeneration (Circle one)

Abundant (seedlings present and easy to find in most places)	Scattered/few (seedlings only present in some places and not easy to find)	None (no seedlings present)
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Write the names of the most dominant species in the regeneration

<i>Brachylaena huillensis</i>	<i>Mkumbambega</i>	<i>Munilkara sulcata</i>
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Forest Condition Characteristic 4.

Density of Seed Trees (for shrublands or thicket only, circle one)

High (more than 50 seed trees per hectare)	Moderate (10 to 50 seed trees per hectare)	Low (less than 10 seed trees per hectare)
--	---	---

Use the five forest condition characteristics above to determine a forest condition class for this block (see the forest condition definitions sheet):

POOR	AVERAGE	GOOD	VERY GOOD
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Comments

PART TWO: INFORMATION REQUIRED FOR EACH FOREST BLOCK OR TYPE CONSERVATION STATUS

Refer to the Conservation Species List and discuss the list with a specialist users (e.g. hunters):
ARE OR WHERE ANY OF THESE SPECIES PRESENT IN THE FOREST?

Comment on the distance of this site to the next forest of conservation value

43.4 km (Mtaa F/Reserve)

Are other projects and/or local efforts supporting conservation measures?

No projects

OVERALL CONSERVATION VALUE (Circle one)

HIGH	MEDIUM	LOW
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Reasons:

Conservation Species List

Common Name (latin name in brackets)	Swahili Name
Birds:	
Usambara Eagle Owl (<i>Bubo voxseleri</i>)	Bundi mbukwa kahawia na masikio
Plain-backed Sunbird (<i>Anthreptes reichenowi</i>)	Chizi mdyo na domo mrefu ana ruka heroka na mara nyingi na andia "click click"
Fischer's Turaco (<i>Phyllastrephus fischeri</i>)	Shorobo - mwekundu na shungi
Southern Banded Snake Eagle (<i>Circaetus fasciolatus</i>)	Tai una milia mingi chini ya mbawa. Anadaka nyoka
Sokoke Pipit (<i>Anthus sokokensis</i>)	Ndega mdogo, anatembea ardhini wa kakahawia
Sokoke Scops Owl (<i>Otus sokokensis</i>)	Bundi mdogo, kahawia. Analia haraka "ho-ho-ho-ho-ho-ho"
Spotted Ground Thrush (<i>Turdus fischeri</i>)	Mkesha kahawia na madoa mengi makubwa tumbani
East Coast Akalat (<i>Sheppardia gunningi</i>)	Ndege mdogo kahawia na njano tumboni
Mammals:	
Horseshoe Bat (<i>Rhinolephus deckenii</i>)	Popo wadogo wanaishi wanakula wadudu
East African Collared Fruit Bat	Popo wakibwa mapango yaliyo ardhini wanakula matunda, wana macko makubwa
African Woolly Bat (<i>Kerivoula africana</i>)	

Black and Rufous Elephant Shrew (<i>Rhynchocyon petersi</i>)	
Golden Rumped Elephant Shrew (<i>Rhynchocyon chrysopygus</i>)	
Zanzibar Galago (<i>Galagoides zanzibariensis</i>)	
Aders's Duker (<i>Cephalophus adersi</i>)	
Lesser Pouched Rat (<i>Leamys hutteri</i>)	

Sources: Burgess and Muir (1994), Kath Shureliff (pers. com.)

PART TWO. INFORMATION REQUIRED FOR EACH FOREST BLOCK OR TYPE CATCHMENT CONDITION

In simple form catchment condition is a function of slope steepness, soil cover and soil erosivity.

Catchment Condition Characteristic 1. Soil cover

SOIL COVER	SOIL COVER CLASS (circle one soil cover class only)
more than 50% of the soils are covered	HIGH
25% to 50% of the soils are covered	MODERATE
less than 25% of the soils are covered	LOW

Catchment Condition Characteristic 2 Soil type
Soil (describe colour, texture, type):

clay

Erosivity of soil type (circle one)

EROSIVE (disperses and/or breaks up in water easily)	NON EROSIVE (stable to water flow)
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Catchment Characteristic 3. Slope steepness (measure by eye or clinometer)

SLOPE (degrees)	SLOPE STEEPNESS CLASS (CIRCLE ONE)
<10	FLAT
10 - 40	MODERATE
>40	STEEP

Use the three catchment condition characteristics above to determine a catchment condition class for this block (see the catchment condition definitions sheet):

GOOD	MODERATE	POOR
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Comments

No net erosion measures required

THREATS

What is the significance of threat associated with the following:
(Circle presence or absence of each factor)

Fire	PRESENT	ABSENT
Woods	PRESENT	ABSENT

Diseases	PRESENT	ABSENT
Grazing	PRESENT	ABSENT
Encroachment	PRESENT	ABSENT
Salt boiling	PRESENT No	ABSENT
Lime burning	PRESENT	ABSENT
Fish smoking (for sale)	PRESENT	ABSENT
Selling poles	PRESENT	ABSENT
Selling fuelwood	PRESENT	ABSENT
Charcoal production	PRESENT	ABSENT
Selling timber	PRESENT	ABSENT
Selling wood carvings	PRESENT intensive	ABSENT
Catchment pollution	PRESENT	ABSENT
Hunting	PRESENT	ABSENT

Comments:

SECTION THREE: SUMMARY (COMPLETE ONCE FOR EACH FOREST - Use information from all village and forest profiles to complete)

LOCAL MANAGEMENT STATUS

Is the forest boundary clearly defined?	YES/NO YES	Local management?	YES/NO YES
Forest change in last five years (from oral history)	now WORSE/ SAME/ BETTER WORSE	Willingness of users to manage	HIGH/MEDIUM/ LOW HIGH

Have any licences been issued for this forest (give details)?

LICENCES ISSUED FOR CHARCOAL, POLES, FUELWOOD AND GAME HUNTING BY GOVERNMENT, AUTHORITIES.

Number of user households (if known):

Households	Village/Sub-village
350	MWANYUMBA VILLAGE
60	MWANYUMBA CCM SUBVILLAGE

User group objectives for forest management (if known):

- FORMATION OF RULES (BYLAWS) TO SAFEGUARD THE FOREST.
- SELECT AREAS FOR USE AND CONSERVATION
- COLLABORATE WITH GOVERNMENT IN MANAGEMENT.

How should this forest be managed in the future?(Circle one):

GOVERNMENT RESERVE	LOCAL AUTHORITY FOREST RESERVE	COMMUNAL FOREST RESERVE	TRADITIONAL FOREST RESERVE
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Explain why

- they had traditional management (strong)
- willingness to manage is high,

Based on forest condition, the management status, the conservation status, catchment condition and threats to this forest, what is your priority for further action (circle one):

HIGH	MEDIUM	LOW
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Explain why:

High threats, Forest condition worse.

What is the immediate action required?:

This area of forest is Laying between five villages ie Marovo, ~~Marovo~~ Maranyumba, Magodi, Kibevani and Mazora, further consultation should be carried out in order find out who will carry out effective management because the area is severely affected by illegal felling for curing purposes done by people from Kenya.

First draft of the Management Agreement of the Mangrove Reserve at Sange and Kipumbwi villages

Part 1. Descriptions

- 1.1 Location, boundaries, size and land tenure of the forests *(to be completed)*
- 1.2 Type, species and condition of the forests *(to be completed)*
- 1.3 Map of the forests *(shown as Annex 1)*
- 1.4 Management Objectives

The primary management objective is :

- The protection and wise use of the mangroves for the benefits of present and future generations of residents in Kipumbwi and Sange

Detailed management objectives are :

- Management of the mangroves to deliver fulfilment of household subsistence needs in building poles, boatmaking materials, firewood, medicines and honey
- Protection of river banks and all seaward areas against foreshore erosion
- Protection of sacred areas
- Development and promotion of tourism, through the protection of three islands within the Reserve
- Following a period of effective control, to implement a system of sustainable management for the mangroves, so that wise use can lead to increased income generation for the villages through the sale of products in excess of household needs.

Part 2. Roles of Partner Organisations and Institutions

2.1 Lands and Environment Committees for Sange and Kipumbwi

2.1.1 Authority

The Committees have the delegated authority to:

- to represent the forest users in negotiation with government on the procedures detailed in this management plan and any subsequent amendments;
- to issue permits for harvesting of forest products;
- to collect fines, levies, donations and charges for forest products; and
- to organise and supervise development activities, protection activities, harvesting operations and distribution of forest products.

2.1.2 Responsibilities

The Committees are responsible for:

- organising meetings;
- organising and supervising all operations approved under this plan;
- keeping records of meetings;
- keeping simple records of forest operations;
- managing the finances of the forest users; and
- co-operating with village and central government authorities in their duties as specified in this plan.

2.1.3 Accountability

The Committee members are accountable to the forest users of Kipumbwi and Sange for their actions. Members of the Committees will participate in joint inspections of the forest with

government authorities to demonstrate the compliance of the forest users with this management plan. The records kept of harvesting operations, finances and meetings will be made on request to any member of the forest users of Sange and Kipumbwi or government authorities on request. The Committee members will keep an activity report which will be periodically presented to the forest users and other relevant organisations that the forest users identify.

2.2 Forest users of Kipumbwi and Sange

2.2.1 Authority

The forest users of Kipumbwi and Sange have exclusive rights to the forest products made available through the application of both harvesting and silvicultural treatments and the implementation of development activities approved under this management plan.

The forest users can raise revenue through the collection of fines, sale of forest products, collection of donations or grants and the collection of levies. These monies can be spent by the forest users on development activities approved under this management plan.

The forest users can delegate responsibilities and authority to the Lands and Environment Committee, but they may change decisions made by that Committee or remove any members based on majority vote in a meeting of quorum of members.

2.2.2 Responsibilities

The forest users are responsible for the implementation of this management plan. They must cooperate with government authorities in the execution of their responsibilities as defined under Law and policy.

Forest users have a responsibility to take part in protection activities as specified in the plan.

2.2.3 Accountability

The forest users, through the Lands and Environment Committee, must be able to demonstrate that the forest is being managed wisely, in accordance with the intentions of this plan and that protection and harvesting operations are being properly organised and executed. This can be achieved by the participation of members of the Lands and Environment Committee in joint inspections of the forest with village, district or central government authorities.

They must also be able to show that their finances have been properly managed and that there are equitable arrangements for distribution of forest products. Both of these requirements will be met by the Lands and Environment Committee.

2.3 Central government

2.3.1 Authority

Staff from the District or central government can investigate the activities of the forest users or the Committee in order to determine whether the management plan is being implemented to the satisfaction of all parties.

2.3.2 Responsibilities

The central government authorities, through the region, will maintain regular contact and support to the forest users. Monitoring activities will be carried out in order to verify that operations are consistent with sustainable management and the ecological health of the forest.

The regional authorities will also support the institutions involved and ensure equity and encourage self reliance.

Any technical advice will be provided on request from the forest users and free of charge.

Government authorities will also support the forest users in Law enforcement.

2.3.3 Accountability

The government authorities will provide any reports from monitoring and other support activities to the forest users.

2.4 Village government

2.4.1 Authority

2.4.2 Responsibilities

Village government must cooperate with members of the forest users, the Lands and Environment Committee and the other government Authorities in the implementation of the plan.

Village government have a responsibility to approve By-laws recommended by the users. They will also assist the forest users in implementing the existing By-laws.

Village government will assist in calling general meeting (village assemblies) for feedback to the village on request.

2.4.3 Accountability

Correspondence and other records will be made available to government authorities on request.

(Details for the Co-ordinating Committee still to be worked out)

Part 3. Prescriptions

3.1 Harvesting and distribution of forest products

3.1.1 General

All management blocks (see Annex 1) will have a protected buffer strip of 15 metres from the edge of any stream or river flowing through them or bordering them, in order to protect the stream banks from erosion. *(Boat landing points to be agreed and marked on map.)*

3.1.2 Firewood for domestic use

All villagers will be permitted to collect dry dead wood as firewood from the villages of Kipumbwi Mjimkuu, Kipumbwi Mjimpia Kipumbwi Mtoni, Serewani and Sange. The areas allocated to the villages are as follows:

- Kipumbwi Mtoni villagers will use the area of habirani;
- Kipumbwi Mjimkuu residents will use the area of mbega;
- Kipumbwi Mjimpia residents will use the area of kchanga changani;
- Serewani residents will use the area of jangwani ;
- Sange residents will use the area of jangwani.

Firewood will also be available from trimmings left over after cutting for poles and timber. If the supply of dead wood finishes for any area, the residents will be free to use another area

3.1.3 Building poles for domestic use

Villagers requiring this material should obtain written permission from their respective village Lands and Environment Committee. The permit will outline conditions, including the area to be used. The user will be shown to the area and supervised by a Committee member. A charge will be levied for this use, though an assessment will be made of the capacity to pay. If someone is unable to pay, the permit will be issued free of charge.

Trees to be used will be selected according to the following silvicultural principles:

- competing stems will be thinned; and
- multitemmed coppice will be singled to provide at least one dominant leader; and
- (Determine if gaps will be replanted and with what species ?).

A village by-law will be promulgated to enable these principles.

The areas allocated are as follows:

Kipumbwi residents (all sub-villages) will use the area of kitoipi and habirani.

Sange residents will use the area of kitoipi, habirani and mibuyuni.

(Specify species to be allocated for this use.)

3.1.3 Boat building for domestic use

The cutting will be controlled by the Committee, depending on type of boat to be built. Fees will be payable to the village, for permission to be granted. One member from the Committee will accompany and supervise the user.

For timber for jihazis the areas allocated for Kipumbwi residents (all sub-villages) are omarisanga and dindi la papa. Species to be used are *Sonneratia alba* and *Xylocarpus granatum* and mature *Avicennia sp.*

Silvicultural principles will be applied as for poles above, except that for the large individuals required for jihazis. Trees will be selected and gaps replanted. A minimum of 100 seed trees (mature standards) will remain per hectare and crown cover will be removed only up to a maximum remaining value of 50%.

For smaller boats (ngarawa, dau and mtumbivi), pole sized timber of *Sonneratia alba* will be used. The areas allocated for Kipumbwi residents (all sub-villages) is omari masanga. Silvicultural principles as for poles above will be followed.

The areas allocated to Sange residents are akida murunde, mibuyuni and habirani. Species preferred is msinzi (*Brugeria gymnoryza*).

3.1.4 Commercial use

Tourism. Islands of kwa faragi will be protected for tourism.

Firewood, building poles. Mechanisms will be developed following a period of successful implementation of this plan. The forest users, in collaboration with District and Regional authorities, will create a small number (up to three) of demonstration plots (each being 0.5

3 DEC 1991

ha) to develop a sustainable management system for commercial use. By-laws will be formulated to regulate these uses.

Beekeeping. Collection will be made so as not to harm a tree. Kipumbwi residents will use the area of jangwa serewani. Sange residents will use the areas of kimunyu, aironi and ailoni.

Medicinal plant collection. As this use does not harm the forest, collection will be without conditions.

3.2 Protection arrangements and sanctions

Existing regular patrols of the mangroves will be maintained and done jointly with the Sange forest users. Two villagers will accompany a Committee member on each patrol, on rotation. Protecting the resource will also be the responsibility of every villager.

If a person enters the forest without permission and cuts a tree, existing by-laws (*for Kipumbwi only - does Sange need the same ?*) provide for a penalty of Tsh 20,000 or one years imprisonment.

Mechanisms will be created to confidentially report to Government (District, Region?) authorities the commercial traders from Zanzibar, who have been previously cutting poles from the Reserve.

3.3 Financial procedures

Revenue accruing from management of the mangroves will be shared equally between the villages of Sange and Kipumbwi.

Schedules of fees will be specified from time-to-time by the Committee in consultation with the users. Rates will reflect the rights of the villagers concerned, so forest users of Kipumbwi and Sange will pay a lower price than others.

(Revenues rates accruing to village and district governments should be specified).

3.4 Development activities

Annex 1: Map of the mangroves, showing management blocks that include the traditional use areas referred to in the Prescriptions.

Annex 1: Action Plan July -December, 1997 (*being guided by the Reef Action Plan?*)

Annex 2: Monitoring Plan (*Procedures and methods for monitoring of institutional and bio-physical monitoring by the Region, including formats for meeting records, activity reports (including periodicity and distribution), permits, harvesting records, ecological baseline, and financial accounts to be kept by the forest users. Should also include the procedures for ecological monitoring and the silviculture demonstration plots*)

Appendix 10 (ref. Chap 7)

Summary of Recommendations from Evaluation of Phase 1 by Pilot Villages (April 1997)

In April 1997 an evaluation was conducted in the 3 pilot villages which had participated in the first phase of the Tanga Coastal Zone Conservation and Development Programme to find out the views of villagers on the following

1. What they felt they had achieved in their village since the programme started
2. What had been the important steps (of the process) that had contributed to their success
3. What steps of the process they felt should have been done differently or improved
4. What results they would like to achieve in the second phase of the programme
5. Their recommendations for achieving these results.

The villagers have been principle actors in trying to find solutions to the problems of coastal resource management in phase 1 so the programme (at regional and district level) needs to learn from the villagers the lessons which they have learned in phase 1 and incorporate these into planning the second phase.

Steps they felt had been very important in achieving their success (and which should be included for new villages)

Process	<ul style="list-style-type: none"> - having the extension workers from different departments - participatory approach always used - mobilisation and animation of the villagers - forming committees, action plans, - forming and using by-laws - special womens meetings - DTT visits - visits from regional staff - visitors from outside coming to the village
Meetings / workshops	<ul style="list-style-type: none"> - meetings to introduce the programme - meetings to keep councillors, WEO and village govt informed - meetings to analyse causes of problems, - meetings to get agreements with villagers and neighbouring villagers, - feedback meetings - regional workshop, - meetings with people to discuss to discuss conservation
Training	<ul style="list-style-type: none"> - training in planning, - training for villagers e.g. game scout, stoves, latrines, etc. - study tours,
Assessments	<ul style="list-style-type: none"> - socio economic assessment - coral reef/fisheries assessment - regular evaluations done with the programme
Actions	<ul style="list-style-type: none"> - patrols and having patrol boat - mangrove planting

They felt some steps could be improved as follows:

Process	<ul style="list-style-type: none"> - usefulness of DTT visits - better advice and seed for tree planting - formation of the committees - need equal numbers of men and women and transparency, members should be selected on education and experience
Meetings/ workshops	<ul style="list-style-type: none"> - feedback meetings should be done at region rather than village - meetings should be held with separate groups separately e.g. youth, elders, etc - non-committee members should attend the regional workshop

Training	<ul style="list-style-type: none"> - training should be accompanied by the means to do the job - more time for study tours & non-committee members should go also - more training needed - training should suit the level of the participants & more time needed for some training which was complicated e.g. planning and business management
Actions	<ul style="list-style-type: none"> - better to have a village police post rather than just a police officer - need ammunition to tackle the vermin problem - savings and credit groups should be helped to get loans - patrols should be conducted more strictly

They proposed results they want to achieve within the next 3 years and some recommendations on how this could be achieved. These are summarised below:

Results

- Closure of reefs finalised
- Fish catches increased
- Trawlers prevented from entering the area
- Shop for selling good gears cheaply
- Mangrove protected area formalised - with an area for use and conservation
- Beach erosion under control
- Woodlots established, trees planted in villages
- Vermin problem under control
- Agr. crop production increased
- Savings and credit society established
- Womens groups established
- Milling machine (Kigombe)
- Alternative economic projects established

Recommended Actions

- Have police posts in the villages
- Involve tourism sector in reef closures
- Speed up the militia training and have own village militia
- Programme puts a strong effort on protection until people get used to better practices
- Have a radio communications system and transport for patrols
- Involve the navy in patrols
- Better govt control on sale of dynamite
- Get good advice on tree planting - mangroves and other spp
- Programme assistance for vermin control with arms and ammunition
- Each suburb have equipment (nets, guns, ammunition) for vermin control
- Game scout training in phase 2
- Gender awareness for men
- Equal numbers of men and women in study tours, feedback meetings, etc
- Stop the juya fishermen from damaging seaweed plots
- Give the seaweed farmers shoes and increase the price of seaweed
- Assistant animator (villager) and more animation training
- Frequent support/follow up visits by govt / programme
- Better Govt support for activities of the programme
- More training
- Exchange visits between villages

Proposals from Extension Workers and Villagers for Phase 2
 (A) Recommendations on Expansion to New Villages put forward by Extension Workers at their Meeting of 18-19 March 1997.

Recommendations for each District	Implications for extension workers (EWs)	Implications for back-up support	Advantages / Disadvantages
<p>Pangani: Expand to Mkwaja, Ushongo & Sange (2 were in SES and Sange is involved in collaborative management of mangroves with Kipumbwi) Use 2 ext. workers per village.</p>	<p>Need 8 EWs. Now have 4 village EWs and 2 general EWs. Consider whether general EWs could be transferred to villages. Still need to train 2-3 new EWs. Considerable training in gender analysis and planning would be needed as it would not be possible for each village to have a women EW.</p>	<p>District Coordinator would need assistance to provide present level of backup support. District Technical Team (DTT) needs to consider how it could manage to provide tech. advice, participate in planning and reviews and feedback meetings for 4 villages</p>	<p>If workable advantage would be considerable momentum added to fisheries management especially. Will require a much increased investment of time and resources from District Council.</p>
<p>Muheza: Expand to Kwale and Moa (SES villages) and let Zingibari and Ndumbani be linked to Moa, and Kichalkani, Munga Vyera and Kizingani be linked to Kwale. Use 2 EWs in the SES villages and let them service the linked villages</p>	<p>Need 5 EWs (assuming 1 stays at Kigombe). Suggest general EWs become village EWs. At present there are 2 village and 2 general EWs so 1 new one required. Again gender analysis and planning training needed.</p>	<p>As above. Muheza also has to consider logistical difficulties as the present pilot village is south of Tanga and the proposed new ones are north.</p>	<p>Advantage of local village is that it maximises the use of limited no.s of extension workers. Could be combined with training 'internal' animators in villages. Expanding to north of Tanga is seen as critical in addressing the dynamic fishing issue.</p>
<p>Tanga: Expand to the 6 extra villages of Tongoni (SES), Mwarungo, Mnyanjani/Sahare/Ndumi (SES), Chongoleani, Machui and Geza. Use one extension worker per village.</p>	<p>Need 7 EWs (assuming 1 stays at Mwambani/Mchukumi). At present there are 2 village EWs and 2 general EWs, so at least 3 new ones would need training. Gender analysis and planning also required.</p>	<p>Would require greatly increased back-up support and assistance to the district coordinator. Would also increase pressure on DTT which is having difficulty meeting present requirements.</p>	<p>Advantage would be almost complete coverage of Tanga's coastal communities. However it would be logistically very difficult and hard to monitor.</p>

EVALUATION TEAM'S RECOMMENDATIONS for PHASE II PLANNING

The evaluation report of Phase I made a number of specific recommendations that the Planning mission for phase II should consider. These are given below, with page reference, and the Planning mission's response to each.

1. Replace second programme objective with: "Promote, facilitate and train coastal communities to use coastal resources in sustainable ways, including restoring degraded environments." (p 25) *Programme's objectives have been totally rewritten as a single one: "Three coastal districts with established programmes of collaborative resource management that improve the well-being of the coastal communities and their environment in the programme villages."*
2. Phase 2 planing mission should address the priority coastal problems in Tanga Region and consider collaborating with other donors and partners in sustainably developing the landward components of ICZM [integrated coastal zone management] for the Region (p 25). *Programme will still keep a focus on the coastal villages. Only result 9 on forestry will include activities to complete a rapid assessment of all coastal forests, including those in coastal lowlands. Follow-up work will need to involve other projects and donors, especially Catchment Forest Project. Phase 3 would be a more appropriate stage to expand inland.*
3. The definition of the Tanzanian coastal zone and the scope of the programme should also be considered by the Planning Mission (p 25). *The scope of Phase 2 has been determined by the logical framework analysis, based on districts and regional planning workshops.*
4. An evaluation framework should be developed at the outset of Phase 2 to assist in monitoring as well as in preparing for the formal independent evaluation at the end of Phase 2 (p 26). *The basis for evaluation has been set out in the logical framework, which states indicators and means of verification. Integrated monitoring has also been specified as result 7 for Phase 2.*
5. While credit schemes in Tanzania have not been successful to date, the evaluation team felt strongly that this concept should not be abandoned and new approaches should be explored (p 32). *Phase 2 has an increased provision for grants to village groups, totalling 36.6 million Tshs, increased from less than 10 million in Phase 1.*
6. All partners would benefit from a one day policy forum on primary environmental care, hosted by the programme. The Planning Mission should consider this in preparing for Phase 2. *This could be organised through the Irish Aid annual programme officers' meeting which will be held in Tanzania during 1997. IUCN and programme staff could give presentations at this meeting.*
7. It is evident that with further training in modern participatory management practices provided in Phase 2, all three district teams will be engaging in state of the art ICZM [integrated coastal zone management]. In Phase 2, the District Technical Teams will need to network, coordinating their activities to implement ICZM throughout the region. (p 34) *Increased training to more members of the district technical teams is provided for in result 3: Regional and district staff working to professional*

standards. In addition, the teams will have the responsibility of coordinating activities as stated in result 1: Three districts coordinating and implementing coastal resource management.

8. In designing the Community Development Fund in Phase 2, the planning team will have to carefully weigh Irish Aid's commitment to poverty reduction and meeting basic needs with their commitment to achieving sustainability through self reliance. The concept of self reliance within Irish Aid should be clearly defined and is a policy issue that the partners should discuss and clarify during the Planning Mission. The planning team must also respect Government of Tanzania wishes that the Tanga programme lay the seeds for income generating activities to serve as incentives for conservation, but emphasis should be on conservation (p 36). *In Phase 2, the Community Development Fund will be replaced with direct grants to programme village committees. There will also be increased resources put into building the foundations for self-reliance (result 5: Communities empowered to undertake collaborative management of coastal resources in all programme villages). Phase 2 also has three specific results (results 8, 9, 10) which aim to provide alternative resource-use or improve access to resources, and improve conservation of the resources. Each of these results area includes training and grants for the villagers.*
9. Reduction of poverty can be achieved through providing more sustainable income generating opportunities, but this will require the collaboration and commitment of other partners and donors in Phase 2, through the CDF [community development fund], NIGP [national income generating programme], loans, other Irish Aid projects, other donors, etc (p 36). *See response to no. 8 above.*
10. The evaluation team concluded that programme implementation in Phase 2 would be strengthened by a set of agreed guidelines on delivering development assistance in this case where the restoration and conservation of the coastal environment for the benefit of coastal communities and other stakeholders is the overall objective (p.37). *Programme has prepared basic guidelines for issue of grants to community groups. Other grants are guided by the specific objectives of activities under the results dealing with sustainable practices in fisheries, forests and agriculture.*
11. Other categories of stakeholders should also be considered for future SES [socio-economic survey] studies, including those in Tanga urban areas, government departments at central and local level, private sector and donors involved with development programmes in the coastal zone. Commercial and secondary users of mangroves need to be identified and sensitized to support the programme's activities (p 38). *Phase 2 will again focus on village-based collaboration. Other stakeholders will be brought in as they affect the programme villages. There will be no specific result targeting commercial users.*
12. Collaboration with universities, research institutions as well as the private sector would be useful in examining further opportunities from ICZM [integrated coastal zone management]. It is generally considered that the business community needs to be brought on board in Phase 2. *In both results 8 and 9, it is planned that university masters students would undertake the trials on more sustainable practices. Opportunities to bring in business sector will be pursued on ad hoc basis (see no. 11 above).*

13. Gender equity is a policy of the Government of Tanzania and the reasons for this apparent imbalance at central government level should be explored in Phase 2. The Kigombe village committees are not gender balanced - solutions need to be found (p 41). *Addressing imbalance in village committees is covered in result 6 : Gender considerations integrated at all levels of programme planning, management and implementation. However, addressing this issue at the central government level is clearly beyond the scope of this programme.*
14. Introduction of time management and work planning at the district level will facilitate inter-district technical team coordination as well as between district technical teams and programme activities (p 43). *This is one of the activities included under result 1, and are part of the professional standards in result 3.*
15. The results of the Task Force examining the role of the district technical teams and District Councils should be considered by the planning mission (p 43). *Minutes of this meeting were made available to planning mission. District Councils play an important role in result 1. Other specific recommendations of the Task Force have been taken up in results 1, 2 and 3. It is proposed that the Task Force meets early in Phase 2, to agree administrative procedures for Phase 2.*
16. The programme are aware of the tendency for planning and implementation to be done primarily by committee members and are considering ways to broaden participation in Phase 2 (p 44). *Result 5 includes activities for villages and government staff to periodically monitor levels of participation and commitment.*
17. The programme, together with the Government of Tanzania and village governments, must address the issue of meeting immediate needs in Phase 2 as the women and men, if they cannot fish, have no fish to sell and cannot cut mangroves, must have an alternative source of income, food and fuel (p 47). *Results 8, 9, and 10 aim to prevent this scenario from developing.*
18. The Kenya Wildlife Service model of collaboration with villagers merits further examination by the planning team. *This exercise was done by programme team in Phase 1, and more study tours to Kenya are planned for Phase 2. The planning team did not specifically look into Kenya Wildlife Service operations in the time available.*
19. Gender training, planning and monitoring should be introduced at all levels of the programme and all stages of the programme cycle. Gender monitoring should be incorporated in the village feedback meetings and review of action plans as well as in the agendas of the regional and district steering committees in Phase 2 (p 47). *Result 6 specifically deals with these matters.*
20. Further SESs [socio-economic studies] should be undertaken on a regular basis and could be improved by expanding the number of indicators to measure social and economic change (p 50). *In result 5, new programme villages will begin with participatory socio-economic and resource assessments. An external consultant will provide advice on the indicators to use.*
21. The programme should publish and disseminate the techniques used for awareness raising in the communities and with other stakeholders, for use in other coastal areas of the world, and the Phase 2 planning team should spend time with the relevant

programme staff to determine why this component was so successful and build upon this success in Phase 2 (p 53). *Preparation of draft guidelines is being done as part of Phase 1; distribution of final guidelines will be an activity under result 3. These guidelines are intended for use in new programme villages in Phase 2.*

22. There is an ongoing requirement for further training and coastal village interaction (p 54). *Substantial budgets have been included for village training, including study tours, in results 5, 8, 9, 10.*
23. The team concluded that the programme would benefit in Phase 2 from further analysis of women's special concerns regarding sustainable use of coastal resources and alternative resource uses, including agriculture (p 54). *Result 10 is included in the programme: Improved and sustainable agricultural practices promoted as an alternative coastal resource use. Result 6 also includes activities to identify women's special concerns.*
24. The team considered that the three district technical teams would benefit from further training as well as regular interaction to share experiences and lessons learned. *There is a substantial budget and activities under Result 3 to train district government staff.*
25. The team concluded that the district technical teams would benefit from the participation of other officers in their efforts to avoid and resolve coastal zone use conflicts (p 54). *Under result 1, each district is to examine the membership of its district technical team so that it can fulfill its responsibilities during Phase 2. There is a substantial increase in budget to fund increased participation of district staff.*
26. The team concluded that further capacity development and institutional strengthening to the existing regional and district structures (particularly the District Councils and the district technical teams) are essential for the sustainability of the Tanga programme (p. 54). *Result 3 has been included in Phase 2. Institutional change will be monitored using an organisational index.*
27. The licensing of fisheries is a central and regional government responsibility which is an issue that should be taken up in Phase 2 to ensure that the achievements of the programme are not compromised. (This may require collaboration of other national and multilateral donors). (p 58). *This has been included as an activity under result 2: Region facilitates, supports and links coastal districts and central government, IUCN and donors to implement coastal resources management. Central government will be asked to respond to initiatives taken under result 8. In the Programme Implementation Agreement, Irish Aid has the role of linking programme to other donors.*
28. The programme should publish and disseminate the rapid assessment methodology for coral reefs as a survey and mapping tool for use in other tropical areas of the world (p 59). *A draft has been completed in Phase 1, and further work has been funded by UNEP. See no. 21 above.*
29. Resource mapping will be extremely useful to the pilot villages, district technical teams, regional and central government officials in their efforts to implement ICZM [integrated coastal zone management] in Phase 2 (p 60). *Participatory resource mapping was trialed in Kipumbwi in Phase 1. The technique will be used in all*

programme villages in Phase 2. Further training of district staff will be included in results 8 and 9.

30. Throughout the world the fisheries sector continues to operate apart even when other sectors cooperate in ICZM [integrated coastal zone management]. This is a major constraint in other models in achieving ICZM and should be further developed in Phase 2 (p 62). *Strategies to maintain integration with fisheries sector in Phase 2 are remain village-based, thus taking a broad integrated view from all villagers' perspectives; use cross-sector district and regional teams.*
31. Efforts to extend the programme to other villages in Phase 2 should be cognizant of the need for coastal coordination and integration. As well the programme should ensure that its activities are coordinated with those of other initiatives that may replicate the programme to develop a nation-wide fisheries plan (p 62). *New programme villages in Phase 2 will probably build on existing villages. Included in result 2 is activity to coordinate with the new NEMC integrated coastal project.*
32. The programme should investigate the EIA [environmental impact assessment] for ammonia discharge to see whether it has a role to play in ensuring public safety and the safety of the marine environment (p 68). *In Phase I, programme has provided advice and monitored impacts of this discharge. At end of May 1997, programme was advised that more than 90% of the ammonia had already been discharged.*
33. Control of vermin is a priority problem for women and requires further attention. The planning team should address this issue and explore realistic solutions possibly in conjunction with the District/Regional staff or with the assistance of private commercial interests for Phase 2. *This has been included as an activity under result 10. During Phase I, Kigombe village committee has engaged the assistance of Amboni Sisal Estates.*
34. To reduce pressure on fisheries an alternative source of animal protein is necessary. Mariculture is not a short term answer. Livestock and poultry need to be pursued (p 69). *Under result 10, livestock and dairy trials have been included; however, they will be very limited.*
35. In the interim, alternative practical inexpensive resource uses must be found so that the villagers are not tempted or forced to revert to their previous unsustainable resource use practices (p 70). *Results 8 and 10 emphasise trials on alternative resource use practices, through mariculture, alternative fishing means, and new agriculture practices and crops.*
36. Security of tenure of resources will be an important issue to address with the Government of Tanzania in Phase 2 (p 71). *Reaching resource management agreements with villages and local government are activities in results 8 and 9. These agreements will be pursued at the national level by the regional staff under result 2.*
37. Alternative food sources and cash crops are cashews, coconuts and cassava. The programme could facilitate these agrarian activities by collaborating with the Government of Tanzania to provide credit or funds to rent a tractor (p 71). *Budget provision has been made for grants to village groups under result 10 for alternative*

agricultural crops.

38. The programme could facilitate introductions of seaweed farmers to other suppliers and markets. The women could form a cooperative. This is a possibility for the CDF [community development fund] that the planning team may consider for Phase 2 (p 72). *During Phase 1, new suppliers were introduced to the region. Grants will be available for village groups to spend on priorities, through results 5, 8, 9 and 10.*
39. The programme should facilitate finding private sector, university or research institutions to undertake experimental or risky mariculture options. The planning team may consider this for Phase 2. *During Phase 1, a Mariculture Advisory Committee was proposed, to include private, government and research representatives. This will be operational during Phase 2 and will be an appropriate mechanism for facilitating cooperation in mariculture.*
40. The evaluation team agreed that the programme in Phase 2 needs to support the villagers in devising more alternative income generation activities that promote sustainability, self-reliance and conservation. *These are the specific purposes of results 8, 9 and 10.*
41. The planning team should explore possible collaboration with NIGF [national income generation programme] and ensure EIA [environmental impact assessment] system is in place to assess proposed activities thereby reinforcing the Phase 2 programme (p 73). *No specific contacts were made with NIGF by the planning team. However, if NIGF does undertake activities in the region, they will make contact with the districts. The district technical teams, with support of regional staff, should review any proposed activities for potential environmental impacts.*
42. The team unanimously concluded that the promotion of income-generating activities from sustainable alternate resource uses was essential and must be carefully considered in the planning of Phase 2 (p 73). *These are the essential focus of results 8, 9 and 10.*

Recommendations from the Evaluation Report included:

43. To increase effectiveness of the Tanga Programme it is recommended that further funding for Phase 2 be allocated to an enhanced community development component for pilot and demonstration villages, emphasizing poverty reduction through income generation from alternative, sustainable, resource use activities. A mechanism needs to be identified using the same participatory approach for delivering financial assistance to support alternative resource uses in the form of cost sharing, credit, micro-project support etc. *Proposed allocations in Phase 2 for direct assistance to community development are more than 11% of the total budget, up from 2% in Phase 1. These include direct untied grants to village groups, training and study tours, equipment for village-based enforcement, mariculture and agriculture trials to be undertaken by villagers. Programme has drafted guidelines for a participatory way of delivering direct financial assistance to village groups.*
44. Prior to or during the Planning mission, Irish Aid and the Government of Tanzania should request an audience with both the Prime Minister and the Vice President of Tanzania to review the findings in the Phase I evaluation and discuss the need for tangible Government of Tanzania inputs in Phase 2 to ensure the effectiveness and sustainability of the Tanga Programme. *The Programme Implementation Agreement specifies tangible inputs on the part of the Government of Tanzania.*

**TANGA COASTAL ZONE CONSERVATION and DEVELOPMENT PROGRAMME
PHASE 2 LOGICAL FRAMEWORK**

PROGRAMME STRUCTURE	INDICATORS (OVIS)	VERIFICATION (MOVS)	ASSUMPTIONS
<p>OVERALL GOAL Sustainable use of the coastal resources of the Tanga Region for the benefit of present and future generations of residents, as well as other people and programmes in Tanzania and the Eastern Africa Region generally (achieved through a series of integrated activities aimed at conservation and collaborative management of coastal resources)</p>	<ul style="list-style-type: none"> - Improved health of coral reefs, fisheries, mangroves & forests - Increased diversity of economic uses of coastal resources - Communities with improved access to coastal resources 	<ul style="list-style-type: none"> - Reports on monitoring of reefs, forests and mangroves - Fishery statistics - Evaluation of trials reports (mariculture, FADs, agriculture, livestock) - SES reports - Poverty profile reports - Gender disaggregated data 	<ul style="list-style-type: none"> - GOT supports the Programme with appropriate policies, legislation & regulations - GOT implements relevant policies & enforces legislation concerning coastal resource use - Programme successes offer sufficient incentives for communities to continue with sustainable use practices - Adequate staff remain available to the Programme at Region and District level - Programme activities become normal part of District work plans

<p>PROGRAMME OBJECTIVE: Three coastal Districts with established programmes of collaborative resource management that improve the well-being of the coastal communities and their environment in the Programme villages</p>	<p>In Programme Villages:</p> <ul style="list-style-type: none"> - Villagers perception of improved wellbeing & environment - 80% of village action plans implemented - Improvement of selected socio-economic indicators - Collaborative agreements that improve and secure equitable access to coastal resources - Improvement in selected environmental indicators - New village, district and central government laws and regulations - Collaborative management integrated into district work and development plans - District budget support for collaborative management (in cash & kind) 	<ul style="list-style-type: none"> - SES reports - Reports of village meetings - 6-monthly reviews of village action plans - SES reports - Annual reviews of village action plans - Evaluation & monitoring reports - Quarterly and annual progress reports - Monitoring & evaluation reports of coral reefs, fisheries & coastal forests - Government gazette - District IJAs and Work plans, Village action plans - District budgets 	<ul style="list-style-type: none"> - All partners willing & have time to participate - Appropriate institutions in place - District revenue improves - (Assumptions for overall objective also apply)
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RESULTS	OVI's	MOV's	ASSUMPTIONS
<p>1. Three coastal districts coordinating and implementing coastal resource management</p>	<ul style="list-style-type: none"> - Agreed procedures implemented - LFA based work plans & % work plans achieved - District commitment - Support for village actions - 4 collaborative managt. agreements - Improvement of institutional index 	<ul style="list-style-type: none"> - Monitoring reports by Region - Quarterly reports - Budget, in-kind contributions - District by-laws - Written documents - Annual scoring by district & region independently 	<ul style="list-style-type: none"> - Each coastal district agrees and accepts TCZ/CIP as priority programme - Each coastal district accepts regional guidelines - Sufficient district staff available and motivated
<p>2- Region facilitates, supports coastal districts to implement coastal resources management & links the districts to central govt., IUCN, & donors</p>	<ul style="list-style-type: none"> - Number of guidelines on process, admin, financial matters - Technical & progress reports - Central govt actions taken on Programme requests - Modified policies & legislation - Active field support & monitoring - NEMC, Dept. of Environment, Fisheries, Forestry, IUCN, donors use lessons from the Programme - Stated commitment of key government staff 	<ul style="list-style-type: none"> - Written documents - Written documents - Documented responses- letters, file reports - Written documents - Work plans, monitoring reports by Region - Formal inputs into NEMC coastal project, - EIA guidelines, reef fisheries management, collaborative management, Irish Aid environment policy - Responses and time taken to requests for action, letters, file reports 	<ul style="list-style-type: none"> - Adequate funding and technical support available through programme - Central govt responsive to programme requests, willing to support and address problem areas

RESULTS	OVI's	MOV's	ASSUMPTIONS
<p>3. Regional and District staff working to professional standards</p>	<ul style="list-style-type: none"> - Increased number of staff at regional & district level with professional training - Number of staff received training to upgrade certain skills - Number of complaints received about staff performance & actions taken by supervisors - Staff performance appraisals - Number of staff with clear job descriptions & TORs - Number of staff with work plans & able to implement them according to schedule - Timely submission & quality of reports 	<ul style="list-style-type: none"> - Training needs assessment reports - Training reports - Letters of complaints - Staff appraisals in confidential files - Progress reports - Programme reviews - Written job descriptions & TORs - Annual and quarterly progress reports - Annual and quarterly progress reports 	<ul style="list-style-type: none"> - Staff with professional skills willing to work in the Programme - Adequate incentive package to motivate staff in the Programme - Newly trained personnel with specialised skills are retained by the District/Region
<p>4. Effective system of village based enforcement (of laws pertaining to use of coastal resources) operating in all Programme villages</p>	<ul style="list-style-type: none"> - Number of villages with management plans that address illegal & destructive resource use practices - Extent of area that is effectively patrolled in each District - Increased number of villages using patrol log books - Number of arrests made - Proportion of cases successfully prosecuted - Number of villages with appropriate by-laws - Reduced incidence of infringements of laws related to coastal resources - Increased proportion of community members with valid licences to use and deal in coastal resources - Decreased cost of enforcement 	<ul style="list-style-type: none"> - Village action plans - Village monitoring reports - Progress reports - Patrol log books & reports - Patrol log books - Patrol log books - Police records - Court records - Village by-laws - Village action plans and reviews (6-monthly and annual) - Licence registers and/or receipt books - Financial reports - Annual evaluation reports on enforcement costs 	<ul style="list-style-type: none"> - Communities are willing to participate in enforcement activities - Government enforcement agencies are committed & support joint enforcement initiatives - Judiciary pays adequate attention to cases concerning infringement of laws on coastal resources - Coastal communities willing to comply with relevant laws - District and central government supports enforcement through cost sharing

RESULTS	OVI's	MOV's	ASSUMPTIONS
<p>5. Communities empowered to undertake collaborative management of coastal resources in all Programme villages</p>	<ul style="list-style-type: none"> - Village committees on priority issues established & active in all Programme villages All Programme villages have action plans that deal with priority issues - Collaborative management agreements prepared - Regular village committee meetings held - Regular village feedback meetings held - Broad based support and participation within the Programme villages for village action plans - Villagers confidence in their ability to deal with their priority issues - Level of involvement of youth and primary school children in env. activities 	<ul style="list-style-type: none"> - Village committees in place for all priority issues - DDT visits and reports - Village action plans - Reports (Village committee & feedback meetings) DDT visits & reports - Collaborative management agreements - Village action plans and - 6-monthly & annual review reports - Minutes of DTT meetings, visit repts - Reports of feedback meetings - Annual evaluation reports of support and participation - Participatory assessment reports - Village action plans & reviews - Participatory assessment reports 	<ul style="list-style-type: none"> - Government & community accept & support collaborative management initiatives - Willingness of communities to cooperate with Programme staff

RESULTS	OVIs	MOVs	ASSUMPTIONS
<p>6. Gender considerations integrated at all levels of Programme planning, management & implementation</p>	<ul style="list-style-type: none"> - At least one village meeting /year/village to discuss gender issues - All govt. staff trained in gender and implementing gender consideration; - Gender awareness improved at all levels - Improved access to and control of , resources & services for both women & men - More equitable representation and active participation of women and men in committees, meetings & Programme activities - Improved gender balance achieved in district /regional committees & DTFs - Gender disag. data available - Every Programme village addresses at least one priority gender issue in village action plans - District & regional LFAs address gender issues - Equitable distribution of material assistance between women & 	<ul style="list-style-type: none"> - Minutes of village meetings - Training records - Staff appraisals - Progress reports of regional and district staff; - SES, village action plans and reviews, progress reports - Records of participation in all activities, study tours, trials, general and skills training collab. agreements - Composition of village committees - Attendance records for committee/other meetings - Records of participation by women in Programme activities - District & Regional staff registers/lists, DTF membership lists - Gender profiling, SES reports - Village actions plans, reports of 6-monthly and annual reviews - District and regional LFA's - Records of material assistance (cash and kind) given to villagers 	<ul style="list-style-type: none"> - People willing to change attitudes & ways of doing things - Committees willing to meet at times convenient for women to attend - Women confident to participate in programme activities - GOI policy supportive of and promoting greater gender equity men
<p>7. Monitoring evaluation & reporting procedures defined & being implemented at all Programme levels</p>	<ul style="list-style-type: none"> - Procedures available & followed at all levels - Actions adjusted based on monitoring & evaluation results 	<ul style="list-style-type: none"> - Monitoring matrix implemented - Progress & financial reports - Annual audit reports - Annual monitoring & evaluation reports - Steering Committee reports - Village feedback reports (6-month & annual) - Reviews of village action plans - Minutes of DTF meetings 	<ul style="list-style-type: none"> - Willingness at all levels to adopt and follow M&E and reporting procedures - Willingness to respond to M&E responsibilities

RESULTS	OVI's	MOV's	ASSUMPTIONS
<p>8. Livelihoods of coastal communities improved through use of sustainable fishery practices</p>	<p>In Programme villages:</p> <ul style="list-style-type: none"> - Improved catches (number, size) - Increased incomes - Reduced incidence of destructive fishing (techniques, gears) - No trawler incursions into shallow waters - Increased number of people using mariculture & FADs in at least 3 villages - Increased proportion of income from mariculture & FADs - Decreased reef fisheries effort (number/ fishers & gear, time fishing) - Improved habitat status 	<ul style="list-style-type: none"> - Fisheries statistics - SES results/reports - Fisheries statistics - SES results/reports - Village patrol log books & patrol reports - Gazette notice/ regulations concerning artisanal fishing zone - Village patrol log books & patrol reports - SES results/reports - monitoring & assessment reports for mariculture & FADs - SES results/reports - monitoring & assessment reports for mariculture & FADs - SES results/reports - monitoring & assessment reports for mariculture & FADs - Six-monthly reef status reports 	<ul style="list-style-type: none"> - Community willing to participate - Mariculture & FAD trials successful - Central government accepts & acts on district/ village proposal

RESULTS	OVIs	MOVs	ASSUMPTIONS
<p>9. Improved and sustainable agricultural practices promoted as alternate coastal resource use</p>	<p>In all Programme villages</p> <ul style="list-style-type: none"> - 50% Increase in number of cleaned farms - 50% Decrease in damage from vermin - Increasing food levels through environmentally friendly practices in at least one village per district - Decrease in dependence on use of agrochemicals - Increase in sale of cash crops in at least one village per district - Village agricultural action plans completed in at least three villages & 80% of target met - Increase in variety of crops grown in at least three Programme villages - Agroforestry introduced in at least two villages - Dairy production initiated in at least one village - Decreased incidence of bush fires 	<ul style="list-style-type: none"> - Village agricultural statistics (collected by village agriculture committees. - Village agriculture statistics - SES, agricultural statistics from village committees, - Reviews of village action plans - Statistics on purchase of agro-chemicals - Village action plans & six-monthly reviews, village records of crop sale taxes - Observations & records of Programme staff - Regular (annual) rapid agricultural surveys - 6-monthly and annual reviews of village action plans; Programme reports - Quarterly and annual progress reports, village action plans and reviews - Reports of agro-forestry trials - Reports of dairy production trials - Village records 	<ul style="list-style-type: none"> - Competent staff available to advise & train villagers - Communities committed to using sustainable agricultural practices - Village agriculture committees in place & effective in implementing agricultural action plans - Equitable access to land for agriculture available to women & men

RESULTS	OVI _s	MOV _s	ASSUMPTIONS
<p>10. Conservation, equitable access to, and sustainable use of forest resources secured for the coastal villagers</p>	<p>In all Programme villages</p> <ul style="list-style-type: none"> - At least 2 mangrove management agreements operating - At least 10% of degraded areas planted with mangroves - At least two village woodlots established - Coastal forest assessments completed in all 3 Districts - One collaborative coastal forest management plan approved & operating - Decreased incidence of bush fires - Decreased illegal cutting of mangroves and coastal forests - Status of forests improved (using selected indicators) - At least 2 agroforestry trials initiated 	<ul style="list-style-type: none"> - Management agreements - Reports from M& E of the operation of such agreements - Village action plans & reviews; MMP/TCZCDP cooperative monitoring - Progress reports on establishment and use of woodlots - Forest assessment reports & plans - Collaborative forest management plan - Village records and reviews of plans - Reports of mangrove monitoring and evaluation - Reports of forest status evaluations - Reports of agro-forestry trials 	<ul style="list-style-type: none"> - Relevant authorities will approve the agreements - Programme staff & villagers able to monitor compliance with agreements - Competent staff available to carry out forests assessments & make plans - Planted mangroves & woodlots have a high success rate - Land available for woodlots

Discussion Paper on selection of extension workers and selection of pilot areas

Options for selection of both:

- 1) Select extension staff by criteria, select pilot areas by criteria, transfer selected extension staff to selected pilot areas.
- 2) Select extension staff by criteria, work in the villages where they are based.
- 3) Select pilot areas by criteria, work with the extension workers based in these areas.
- 4) Rank SES villages according to
 - a) willingness to act of villagers
 - b) suitable extension workers

Options for selection of pilot areas:

- A) Select 2 villages in each district
- B) Select 1 ward in each district
- C) Select in each district a bunch of villages who are related in some way (common use of a resource, common problem)

Criteria for selection of pilot areas:

- * High level of concern & interest to act
- * Possibilities for recovery of natural resources
- * High level of dependence of coastal natural resources
- * Serious problems of degradation of natural resources
- * Presence of extension worker(s) corresponding to criteria

Tasks extension workers:

- * Coordinate project activities within village
- * Organise and facilitate awareness & extension programme
- * Organise and assist community trial activities
- * Facilitate:
 - problem analysis by villagers
 - Finding solutions by villagers
 - Planning and implementation of activities by villagers
 - Monitoring by villagers
 - Participation of all villagers
- * Organise external assistance when needed
- * Be responsible for feedback from project to villagers

Selection criteria for extension workers + survey teams:

1. Village based, preferably experience of working in a coastal village;
2. Proven ability to communicate with villagers, understand them and be presentable to them;
3. Proven ability to plan and organise activities in the village;
4. Ability to write clear and concise reports in Kiswahili.
5. Understanding of issues affecting sustainable resource use;
6. Demonstrated interest and ability to learn;
7. No previous history of misconduct;
8. Previous training/experience of participatory approaches an advantage;
9. Previous experience of working with a development project an advantage.

For those to be selected for the Coral Reef survey team:

10. Ability to swim or willingness to learn; willingness and capability to spend long hours on the water.

Remarks:

- District Coordinators to make a list of all officers from Community Development, Fisheries and Forestry who meet these criteria. For certain criteria indicate to what extent each of these persons meet each criterion.
- Persons with a known history of misconduct e.g. involvement with dynamite fishing (Criterion 7) should not be considered.
- A probation period of 3-6 months will apply to the persons selected.

Score on Criteria:

Criterion 1: Note the number of years of working experience in a coastal village

Criteria 2, 3, 4, 5, and 6: Give a score on the following scale:

- 1 = bad
- 2 = not so good
- 3 = average
- 4 = good
- 5 = excellent

Criterion 7: See second remark

Criterion 8: Note which training/experience of participatory approaches they have and for how long

Criterion 9: Note which kind of experience they had with other development projects and for how long

Criterion 10: Note: Good Poor No.

Outline of Information Needs for Participatory Socio-economic Assessment in New Target Villages

This outline draws on the socio-economic study conducted in 1995 and modifies it according to lessons learned in Phase 1 about what information is critical.

1. Village profile: demography, services and infrastructure, gender analysis of activities, and access to and control over resources, poverty profile (who are considered the poor and rich)
2. Natural resources profile - what resources does the village use and how are they used - mapping and transects
3. Livelihood strategies - how people meet their needs for food, shelter, fuel, clothing, health, education and cash income and how dependant are they on different resource uses. (relate this to poverty and gender profiles)
4. Effect of different activities on different resources and conflicts arising from resource use.
5. How resource use is/was controlled or managed
6. Traditions relating to natural resource use and management
7. The issues of concern to people - what they see as the problems, what they think are the causes, and how they think they might be solved.
8. Community organisation - village institutions (formal and informal), previous projects implemented in/by the village and what they think contributed to success or failure
9. How to monitor change over time - the barometer of sustainability and what indicators will show if human well-being and environment well-being are improving over time

The Barometer of Sustainability

(from IUCN/IDRC project for Monitoring and Assessment of Strategies for Sustainability)

The barometer of Sustainability is a tool for measuring and communicating a society's overall well being and progress towards sustainability. Its key features are that:

- 1 gives a picture of the whole system not just specific parts;
- 2 treats ecosystem well being and human well being as equally important;
- 3 examines the judgements involved in assessing progress towards sustainability.

The barometer consists of indices of ecosystem and human well being which it combines into an index of sustainability. It provides an immediate picture of where people are at and where they are going - the conditions of people and the ecosystem, and the effects of people/ecosystem interactions.

Three steps

1. Define the dimensions of ecosystem and human well being. These dimensions are universal sets of issues that have to be considered by every society. When using the barometer for assessment, 10 dimensions are recommended - 5 for human well being and 5 for ecosystem well being i.e.

Ecosystem dimensions	Human dimensions
Land (forests, soils, etc)	Health and population
Water (incl marine & reefs)	Wealth and livelihood
Air	Knowledge
Biodiversity	Behavior & organisation
Resource use	Equity

2. Define the indicative issues for each dimension - widely applicable issues that represent a dimension, e.g. water quality. Choice of indicative issues depends on which ones reveal the dimension most clearly, which ones concern people most, and whether indicators can be developed for them.
3. Define indicators for each indicative issue. Because the barometer uses a performance scale the indicators must be performance indicators i.e it must be possible to define values that would be desirable, acceptable, or unacceptable with respect to human or ecosystem well being. Indicators that are neutral or of unknown significance cannot be used. Choice of indicators depends on which performance indicators reveal the issue most clearly and for which data can be obtained.

Ecosystem dimension	indicative issues	performance indicators	human dimensions	indicative issues	performance indicators
land			health & population		
water			wealth & livelihood		
air			knowledge		
biodiversity			behavior & institutions		
resource use			Equity		

FRAMEWORKS FOR GENDER ANALYSIS (from Oxfam Gender Training Manual)

1. Harvard Framework

- (i) Activity profile (productive, reproductive and community activities)
- (ii) Access and Control Profile (land, equipment, labour, capital, outside income, education, etc)
- (iii) Influencing Factors (general economic condition, institutional structures, demographic factors, community norms, legal parameters, political events, training and education, etc)

2. Capacities and Vulnerabilities Analysis

- i physical and material
- ii social and organisational
- iii psychological / attitudinal

3. Longwe Hierarchy of Needs / Womens empowerment framework

Useful for guiding future activities.

Higher levels of needs cannot be met successfully if preceding ones aren't met (a is most basic)

a. wellbeing --- b. access to resources --- c. conscientisation --- d. participation in decision making --- e. control over resources

Needs of women for equity and empowerment must be assessed at all these levels from well being to control over resources

4. Practical and Strategic Needs Analysis

Practical Needs refer to those needs for survival and livelihood. Examples include access to food, shelter and services such as maize mills, water, health, etc.

Strategic Needs refer to those needs which must be addressed if the inequitable positions of men and women are to be challenged. Examples include empowerment of women through education and training, raising awareness of gender inequity, participation in decision making, greater access to and control over resources.

Format for Assessing Benefits to Men and Women of Direct Material Assistance to Villages

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
Cost						
Percentage of Village Grant						
Benefits to men						
Benefits to women						
Who has responsibility for it						