PROJECT SELAMAT Building Resilience to Tsunami in Indian Ocean

Capacity Building of Coastal Communities on Disaster Risk Reduction

Shivayani Atoll, Maldives

SEEDS ASIA

FINAL REPORT

November 07 – April 08

EUROPEAN COMMISSION Humanitarian Aid

UNISDR United Nations International Strategy for Disaster Reduction

SEEDS ASIA

1. Description

Name of the beneficiary grants contact:

SEEDS ASIA

Name & title of the Contact person:

Yuko Nakagawa, Chief operating Officer

Name of partners in action:

Title of the action:

Capacity Building of Coastal Communities on Disaster Risk Reduction in Shaviyani Atoll

Start date & end date of reporting period:

1st November 2007 / 30TH April 2008

Target countries:

Maldives, Shaviyani Atoll

Final beneficiaries or target groups[1] (if different) (including number of women & men):

Target groups: Communities living in the 5 islands selected, with a total population 7,984 (4,102 men, 3,882 women).

Final beneficiaries: Communities living in Shivayani atoll, population of 14, 218 (census 2003), National Disaster Management Center, related Govt. Departments, local NGOs and Agencies working on the area of Disaster Risk Reduction.

[1] "Target groups" are the groups/entities who will be directly positively affected by the project at the Project Purpose level and "final beneficiaries" are those who will benefit from the project in the long term at the level of the society or sector at large.

2. Assessment of Implementation of activities

Activities & results

Activity 1 Field survey - Risk identification of project area / DRR intervention plan / Stakeholder analysis

In close collaboration with the National Disaster Management Center Authorities and the Ministry of Atoll Development five islands in Shaviyani Atoll were selected for UN/ISDR – SEEDS Asia intervention activities on Disaster Risk Reduction.

Meetings with representative from National Disaster Management Center, Ministry of Environment, UNDP Maldives and Care Society Maldives were held with the objective of identifying major stakeholders of DRR activities in the country and to avoid overlap of activities with the ongoing initiatives on Disaster Management.

With the objective of identifying intervention activities in the project area, at the community level, 5 islands were visited and PRA discussions took place with communities groups: Island officials, local CBOS' & NGO's, Women and youth groups.

Along with the country visit conducted in the month of November local vulnerabilities, risks & coping mechanisms were identified, through a participatory approach during the field visits.

DRR activities and intervention plans have been identified and finalized, focusing on the integration of Environmental Management and Disaster Risk Reduction. (Please refer to 2.4)

Activities have been identified along with expertise on Disaster Risk Reduction and Natural Resources Management.

Reasons for Modification of planned Activity:

With all the data collected during the field visits and based on the Base Line Study report conducted by the ADRRN International Project Team, it could be concluded that implementation activities mentioned in the initial proposal needed to be revised.

With the aim of Building Coastal communities Resilience in Shaviyani Atoll, it was observed that food security, life and lack of accessibility of the islands are the main factors which increase communities' vulnerabilities towards future effects of Climate Change and Tsunamis.

Therefore, the intervention activities identified integrate DRR in environmental and natural resources Management. Intervention plan has been design in line with the Hyogo Frame of Action priority four, reducing the risk in key sectors. It will include sustainable use and management of natural Resources, and will integrate Disaster Risk Reduction activities and climate change.

Implementation activities have been as follows:

- To Promote concept of Bio Island and to Build women and youth communities self resilience in Milandhoo (Shivayani Atoll island)

The Bio Island concept will include:

a) Establishment and Community training of Bio-shield and coastal plantation
b) Establishment and Community training on Model Kitchen Gardens
c) Establishment of Community Resource center by Enhancing IT capacity
d) Introduction/ training of Community based solid waste management system. Case studies from other small islands in the world especially from Japan are planned have been collected during the project period and these would be shared with local people for development of their own community based solid waste management system.

- To promote adaptation activities to climate change through Disaster Management Planning.

- Best practices & lessons learnt, National Workshop

As a result, key stakeholders and DRR activities have been identified.

With limited opportunities for livelihood there are numerous cases of a large number of women headed households and the elderly. The breaking up of families to fulfill needs of livelihood often results in large number of women and children living on the island all by themselves. Also, the elderly population is often left behind on the islands which contribute to the vulnerability of the island.

The women, children and the elderly stay alone on the islands, representing 74% of the five Island population), exposing their vulnerabilities in case of emergencies to a higher risk.

Therefore, women & youth communities will be key Stakeholders of project implementation.

Result: Assessments of community preparedness measures in coastal zones undertaken and Disaster Risk Reduction intervention plan designed.

Activity 2 Detailed Base Line Study & Micro Planning for Model Island, Milandhoo: Coastal Bioshields, Home Kitchen Gardens and Resource Center.

During the month of February, three experts on coastal protection, previously identified, visited Maldives. Participatory exercises like transect analysis, focus group discussions, open ended interviews etc were conducted to do situation analysis.
Based on the planning workshops organized, participatory exercises conducted with the different sections of the community and the meetings held with the stakeholders at different levels, a detailed microplan for Milandhoo Island was prepared. The plan provides the approach and framework, detailed account of the results of the baseline surveys and participatory exercises conducted and objectives for each of the sub programmes. The report also includes the methodology to be adopted, duration of sub activities under each sub component, resources required to carry out the activity, monitoring methods and finally the expected outcome and impact.

Several consultations were organized with different stakeholders like island officials; school teachers, members of different community based groups like women centre and youth movements for the same.

A summary of the baseline results is attached as an annexure in the present report.

Result: Detailed research of local coping mechanisms, baseline indicators, stakeholder analysis and Micro planning of DRR activities in Model Island.

Activity 3 Base line survey for solid waste management local practices

A Base line report on the current SWM practices of households and local community and activities to be undertaken under Project Selamat has been finalized.

During the trip to Milandhoo, current SWM practices and the challenges faced and behaviour pattern of the households were studied. It was found that, the waste is being thrown alongside the coast line and burned with many items not separated (plastics, cans and other hazardous materials). It was also found that local communities were aware of the health problems related to lack of waste management mechanisms, but the team could conclude that the local community was not aware about the environmental implications of it. Therefore, environmental awareness and how the lack of waste management can lead to a natural disaster itself will be part of the awareness programmes in the islands. Moreover, as identified in the Baseline document conducted by the ADRRN International Team, the lack of waste management in the islands increases the populations' vulnerabilities.

Education and awareness on solid waste management becomes a key component of building communities resilience in the Maldives.

Result: Baseline Study on Solid Waste Management in Milandhoo Island, Maldives.

Activity 4 Development of nursery for Coastal Bioshield (based on the species identification) and hands on training to local members.

During the month of February, three experts on coastal protection, previously identified, visited Maldives. Participatory exercises like transect analysis, focus group discussions, open ended interviews etc were conducted to do situation analysis.

A nursery for mangrove bio shield was developed and simultaneously hands on training were conducted for the community members. Follow up and monitoring of the activities is being made with the support of National Disaster Management Center.

The Island office has agreed to take care of the nursery the responsibilities include a) regular watering, b) removing the dead cuttings and replacing with new cuttings c) collection of Kuredhi saplings and rearing them in the nursery and d) protection. It was agreed to pay a small honorarium as incentive to the staff. A standard format has been prepared and shared with the Island office to record the status of the nursery on weekly basis and share the report through NDMC, Male.

Suggested Bio Shield Model is attached as an annexure to the present report.

Result: local volunteers (existing community capacity) mobilized and trained coastal Bioshields for in disaster risk reduction and to support community actions.

Activity 5 *H*ands on training programme for three local women groups on Nutritional home garden models, Milandhoo

The women committee of Milandhoo Island identified eighteen members to represent the island for the hands on training. At the outset the purpose of the programme was explained to the members and their role as local resource and model demonstration garden to the nearby households. Following this, the participants were requested to draw a sketch of the garden in their respective houses and requested to find out the diversity status as well as space available for intensify the cultivation in home garden's were discussed.

Seed exhibition
In order to create awareness on the importance of the seeds, different seed types (hybrids and varieties), germination percentage and seed selection process has been simplified and flip charts were used to disseminate the content. In addition, seeds of different varieties and hybrids were displayed which encouraged the participants to learn the better agronomic practices and different types of vegetables. Simple brochure describing the details like seed quality, seed storage, seed network, seed bank etc was prepared in Dhivehi and circulated among the participants.

Training on multimedia materials on eco-agricultural practices
In order to reiterate the points discussed in the hands on training programme three power point based presentation materials (importance of home garden, pest control practices in chillies and brinjal) was prepared in Dhivehi language and presented and explained to the participants. The presentation was made at the school Audio Visual room using LCD projector for the better view of the pest photographs. The print materials of the same have been circulated to the members. The multimedia materials are available in the resource center for the ready reference of other members.

Interaction with Ecoclub members at school
Interacted with ecoclub members of around 40 (girls and boys) discussed on the vegetable intake and their own home garden diversity. Also, discussed on the importance of vegetables especially fibre, vitamins and micronutrients providing ones in their diet. It is planned to establish a nutritional garden in the school premises as a model to create awareness on the importance of vegetable. It is planned to prepare a chart based material on nutritional profile of different vegetables to understand it better for the practice. Also it is planned to establish one hydroponics model in the school premises in collaboration with the eco club for awareness generation.

Result: - *Local volunteers (existing community capacity) mobilized and trained.*
- *Public awareness on home kitchen gardens and eco-agricultural practices.*
- Public information material tailored to local cultures and languages

Activity 6 Establishment of Community Resource Centre (CRC) in Milandhoo Island.

Prior to the training programmes, the following are the areas decided through consultation with the community which the Community Resource Centre could concentrate:

1. Conducting ICT based training programmes for Coastal Bioshield, Nutritional home garden, solid waste management.
2. Providing learning materials to generate awareness among the islanders on environmental issues, nutritional home gardening, solid waste management, health and sanitation, disaster management etc
3. Supply of need based information developing local contents, gather information through establishing linkages to different sources and provides the specific needs of the different sections

for eg. The linkage with Extension department, Ministry of Fishery, Agriculture and Forestry would help women to receive need based information related to home gardening.

4. Computer literacy programme for the islander women.

The trainees would be encouraged to use the CRC for the following purposes

- Interacting with Ministry of agriculture either through e mail or telephone to get the crop advisory
- Use of learning materials available in the center : agricultural magazines of the last five years, materials from the website, digital learning and training modules
- Apart from this, efforts are being carried out to bring learning materials in digital forms.

The Island chief convened the meeting of the Island council and a nine member CRC management committee was formed with members representing different CBOs and from the island office. The facilities available in the centre were also discussed, the centre is well equipped with five computers, one three in one (scanner, printer and copier), a fax machine, a land line telephone connection.

An interactive training was conducted to the members of the management committee. The vision and objectives of CRC was explained, the approach needs to be adopted and the list of potential stakeholders and their possible contributions, planning and management of CRC, operational guidelines, information needs assessment, development of local contents, capacity building of CRC manager, services CRC could provide, monitoring of the performance and sustainability of the Centre. Copies of the training materials translated in Divehi were circulated to the participants. At the end of the training discussion held and the following decisions were made. To motivate and provide quality service a modest honorarium of 750 rufia would be provided to the CRC manager for every month. Also the project would support the charge for the wifi internet connectivity and landline telephone charge.

It was also decided the project would support to get a connectivity for the next eight months with suitable package, digital camera, and one book shelf to keep the training materials and records, and a binding machine which could help the centre to take up some income generation activity.

The agreed project support to meet the running cost of the CRC was formalized through National Disaster Management Centre (NDMC) and the Island office, Milandhoo. The island has the wifi connectivity which covers about the 85% of the open area in the island. But the connectivity facility within the building is limited that needs an extra wifi adaptor. The dihragu team visited the CRC centre and arranged the connectivity with the support of wifi adopter with excellent signal strength and speed of minimum 2 mbps.

The project team developed the roles and responsibilities of the of the CRC manager and the management committee and shared with the management committee and the island office. It was suggested the roles and responsibilities can be changed according the local conditions if needed.

Inauguration of the centre

The island chiefs visited the centre and inaugurated the centre, the roles and responsibilities developed were shared with the Island chief, management committee president, CRC manager and other members. The training materials prepared by the team carried collected from the agricultural extension centre were given to the island chief. Copied of asset register and visitors register were also handed over to the CRC manager.

Linkages

The Director, Extension, Agriculture has shown interest and told that CRC can be in touch with the department on daily basis to meet the information and input needs. The islanders can call over phone or send their needs through internet and the department would respond promptly as per the requirement.

More linkages will be facilitated with government ministries and other sources of information based on the needs of the local community to ensure the need based information suppl. The possibility to introduce computer literacy programme would be explored for a batch of women and youths in the island. The

project would provide more training materials both in multimedia and print forms. An early warning system with national level organizations will be established during the preparation of the Island based Disaster management plan during the month of August. The training materials on the CRC will be translated in Dhivihi and circulated to the CRC management committee members and the other CBO leaders. CRC manager will be given more training on need assessment, facilitating linkages and development of contents.

Result: *Community Resource Center established and effective chain of communication between the community and local authorities established and strengthened.*

Activity 7 Training Materials

Presentation materials on Home Kitchen Gardens (importance of home garden, pest control practices in chillies and brinjal) have been prepared in Dhivehi (local language) and are available in the resource center for the ready reference of other members.

Training materials (Power Point Presentations) on Castal Bioshields and Solid Waste Management have been prepared in English and have been given to the focal point of the NDMC for Project Selamat for translation. These materials will be used in the next training programes for the month of June and will also will be available in the community resource center.

Result: Public awareness on environmental management integrated with disaster risk increased through awareness raising and public information material tailored in local language.

Activity 8 Liasoning with Government Stakeholders

Project Selamat is being implemented in close collaboration with the National Disaster Management Center, who is involved in all decision making and is facilitating the implementation of the activities. Throughout the field visits and activities implementation, consultation meetings have been held at National (NDMC, Ministry of Fisheries, agriculture and Marine resources), Atoll and Island level.

Activity 9 Coordination with ADRRN International Project Team

Updated Action Plan

	Actual implementation
	Preparation
	Monitoring - online base

	ACTIVITIES	Apr., 08	May., 08	Jun, 08	Jul, 08	Aug., 08	Sep., 08	Oct. 08	Nov. 08	Dec. 08
		7	8	9	10	11	12	13	14	15
I	**Preparatory Phase**	Completed (Oct – November 2007)								
II	**Base Line Studies**	Completed (Nov- February 2008)								
III.	**BIO SHIELDS & MODEL HOME KITCHEN GARDEN -ISLAND LEVEL**									
	Planting for bioshield and hands on training	First phase completed (February 08)								
	Demonstration and training of the home garden	Completed (April 08)								
	Hydrophonics demonstration for vegetable cultivation and training									
	Participatory evaluation									
IV	**COMMUNITY RESOURCE CENTER – ISLAND LEVEL**									
	Planning workshop and orientation/training with local NGOs/CBOs	Completed. Inauguration of CRC April 08								
	Supply of contents and training and capacity building on content development	Completed								
	Participatory evaluation (on-line basis)									
V	**COMMUNITY BASED SOLID WASTE MANAGEMENT - ISLAND LEVEL**									
	Planning workshop and base line survey for current local solid waste management	Completed (February 2008)								
	Preparation of education materials and other soft materials									
	Training workshop on community based solid waste management									
	Monitoring and corrective action									
VI	**DISASTER MANAGEMENT PLANS - ISLAND & ATOLL LEVEL**									
	Workshop design and planning									
	DM workshop for community members, island officials and atoll official									
VII	**NATIONAL WORKSHOP**									
	Preparation of the workshop									
	Workshop in Male									
IX	**Reporting and Documentation of all the activities**									

Overall Difficulties

Capacity of local nodal point (National Disaster Management Center – NDMC) is relatively low. They are facing lack of capable & expertise staffs on DRR to implement their activities. This might affect our future activities when we need local support from them while implementing projects in 2008.

However, Ms. Zaha Waheed NDMC's nodal person, ensured to put one person for supporting this project without any personnel cost.

Changes in implementation

Implementing partner

In the initial project proposal it was thought that a local implementing partner would be identified in order to ensure a smooth implementation on the ground. However, due to the limited capacity on DRR of local NGO's and institutions it was decided that SEEDS ASIA along with a team of experts will be in charge of the project implementation. Focal points in the National Disaster Management Center and Shivayani atoll were identified and have supported and collaborated the project activities through out the implementation process

Disaster Management Planning – Experts

Given the limited financial resources allocated to SEEDS Asia, it was decided that in order to develop the Disaster Management Plans at Atoll and Island level, the ADRRN International Project Team will facilitate the process by providing experts on the topic. The agenda of the trainings on Community Based Disaster Preparedness is currently being discussed with the National Disaster Management Center of Maldives, who will provide resource persons for the task forces training. Training and IEC material has already being identified and it's underway. Training and development on CBDM and Disaster Management Plans have been schedule in the month of August.

3. Partners & Cooperation

3.1 How do you assess the relationship between the formal partners of this action (i.e. those partners which have signed a partnership statement)? Please specify for each partner organizations.

The National Disaster Management Center of Maldives will be the focal point for consultation and guidance though out the project implementation. However, SEEDS ASIA will be the sole implanting agency in Maldives; no local partners will be involved.

3.2 How would you assess the relationship between your organization & State authorities in the targeted countries? How has this relationship affected the Action?

Due to the geographical situation of Maldives, Government authorities are dived into Island, Atoll and National level.
Meeting have taken place with main stakeholder at the three levels: National Disaster Management Center, Shivayani Atoll Officials and Island Chiefs/Officials.

The project was well received by all, which will ensure a smooth implementation of the project on the ground and its sustainability.

3.3 Where applicable describe your relationship with any other organizations involved in implementing Action:

- Associates
- Sub-contractors
- Final beneficiaries & target group

Islands' assessment and trainings were done in a collaborative approach with community representatives. In order to ensure transparency and clarity, the overall aim of the project was shared with the beneficiaries. Project design has taken into consideration communities concerns.

Overall, the project has been well received and CBOs & NGOs shown keen interest on building up their own skills and capabilities on DRR activities.

- Other third parties involved

3.4 Where applicable, outline any links you have developed with other actions.

Name of the contact person for the Action:

Yuko Nakagawa, Chief operating Officer

Signature:

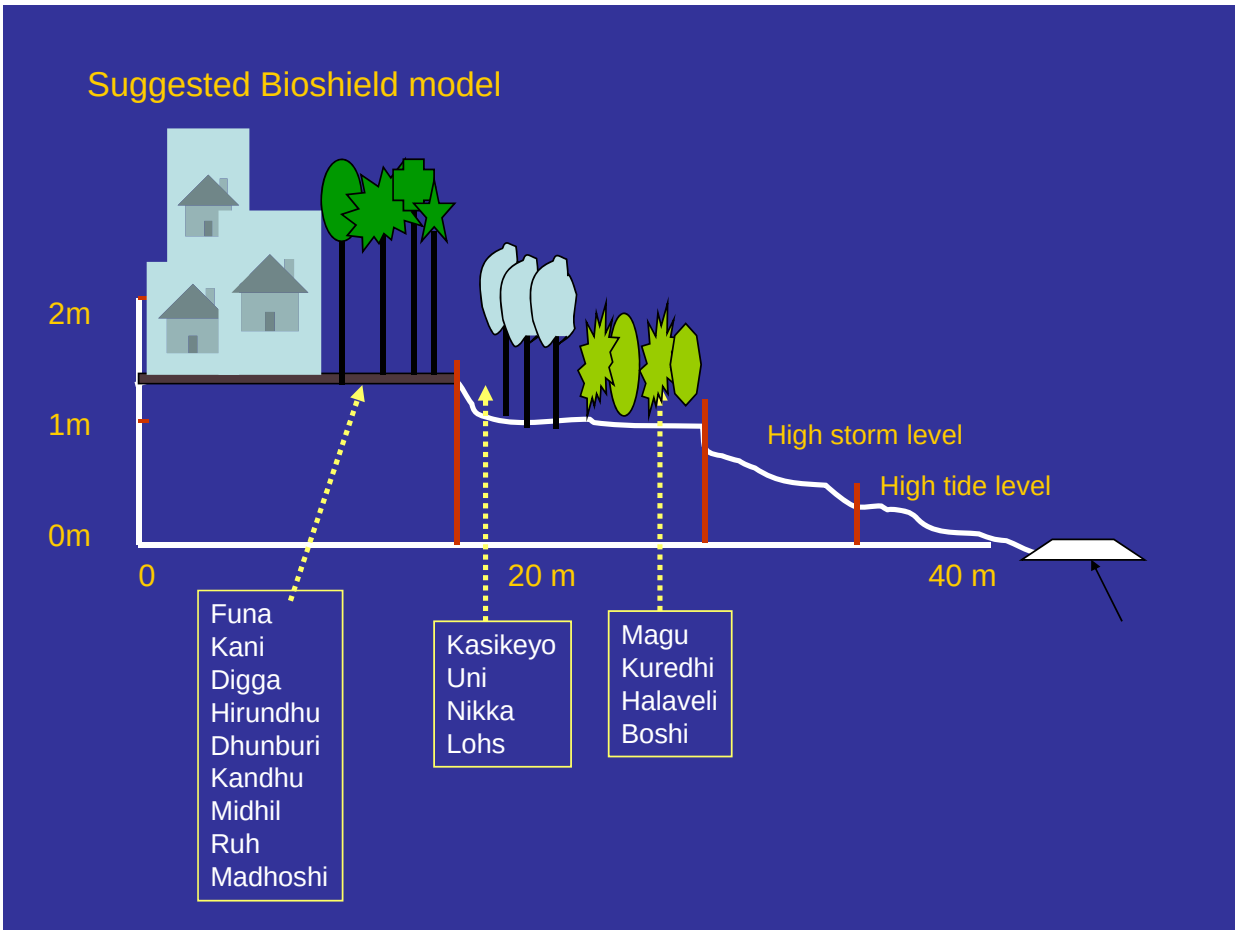
Location:

Date report due:

31st May 2008

Date report sent:

ANNEXURE A


Suggested Bioshield model
2m
1m
0m
0
20 m
40 m
High storm level
High tide level
Funa
Kani
Digga
Hirundhu
Dhunburi
Kandhu
Midhil
Ruh
Madhoshi
Kasikeyo
Uni
Nikka
Lohs
Magu
Kuredhi
Halaveli
Boshi

ANNEXURE B
Baseline survey results on home gardens

The interaction and discussion shows that home gardens has the potential to provide upto 30 % of inland households food need, but currently in this island it supports 10-15 % only. This means that the present utilization pattern is highly extensive and there is a good scope to further intensify the production. All the surveyed households indicated that the produces are entirely utilized for household purposes and in times when it is excess it is being shared with neighbors and relatives.

Area under home garden: The management of home gardens suits the labour conditions of island women. The space available varies across households, but it ranges between 20 m^2 to 60 m^2. The baseline survey indicates that 64 % of the surveyed houses have more than 40 m^2, 30 % has 20-30 m^2 area and only 6 % of the households has a limited space of around less than 20 m^2. On an average each household has around 6- 8 members.

Suitable season: The cultivation of crop species is a year round practice, though around 70 % of the households mentioned that southwest monsoon during April- May is the good season for planting tree species. Otherwise seasonal vegetables could be raised throughout the year.

Responsibility: The design and management of the home garden is the sole responsibility of women, in few households where elderly men are supporting women in managing the garden in terms of new species introduction and advice. But all the physical activities related to cultivation aspects are being done by women. In some households it often constitutes a small farm area where intense crop production occurs with annual crops sown continuously, and perennial crops perpetuate themselves without needing frequent seeding. The agronomic practices like irrigation, weeding and harvesting do not require strict timing and carried out as on when they get time and notice it.

Experience in home garden: Since the settlement is relatively recent, the houses on the northern part started the practice of garden around six years earlier, whereas in the southern part around 25 % percent of the houses are still under the process of construction in which the practice is very recent. But women have the experience on cultivation and they had been involved in such tasks in their earlier settlement of other island.

Diversity and species composition: The home gardens are strategic to improve their household supplementary food and nutritional aspects in the island. On an average ten different species are being cultivated but the total number of species cultivated in the home garden is around 35 covering fruits, vegetables, nuts, spices etc. Each of the species has diverse nutritional profiles and varies in bearing seasons. From the field visit and interaction it is clear that the following are the species found in home gardens of Milandoo island.

Details of species grown in the gardens and distribution

No	Name of the Species	Local common	Scientific name	Degree of distribution		
				Frequent	Moderate	Rare
I. Vegetables						
1.	Chillies			✓		
2.	Leaf cabbage (seen					✓
3.	Curry leaf			✓		
4.	Moringa			✓		
5.	Ramba – leafy			✓		
6.	Green cabbage			✓		
7.	Brinjal			✓		
8.	Cucumber	kyocumba		✓		

9.	Tomato			✓		
10.	Pudhina					✓
11.	Pumpkin				✓	
12.	Cowpea				✓	
II. Fruits						
13.	Banana			✓		
14.	Guava	faru		✓		
15	Custard apple	Atha		✓		
16	Bilimagu			✓		
17	Mango				✓	
18	Papaya	falo		✓		
19	Passion fruit			✓		
20	Breadfruit			✓		
21	Pomegranate			✓		
III. Tubers						
21	Taro					✓
22	Vetrilaivallikilangu	rigakakani			✓	
23	Sweet potato				✓	
24	Pumpkin					
25	Coconut			✓		
26	Citrus	Lumbo		✓		
27	Betel leaf			✓		✓
28	Areca nut					
29	Sorghum					✓
30	Sugarcane			✓		
31	Bottle guard			✓		
32	Snake guard					
33	Mulberry species					

With regard to species dynamics, around 80% of the households expressed that three years back species like banana, guava, coconut and perennial vegetable species like Ramba, curry leaf, leaf cabbage etc was cultivated. But women are keen in enriching the diverse species composition in their gardens.

Source of planting materials: Different sources supply the materials, around 92 % of the households indicated that they manage and preserve the seeds for next season, sometimes for example in chilles, they take seeds from chillies they purchase from shops for vegetable/table purpose. But around 6 % of the households expressed that they purchased seeds from shops in the local islands as well as from Male. Only 2 % of the households expressed that they share the planting materials with relatives and neighbors.

Awareness on soil health: Around 88% of the respondents expressed that they are aware of this and indicators they expressed is poor and stunted growth indicates the low soil fertility. The remaining 22 % of them expressed that they do not know the reason for poor growth and doesn't correlate with the soil fertility status. With regard to the restoration strategies, only 30 % of them practice application of compost (dried leaves/twigs/fish waste) and soil from dense forest area in the island. According to them colour and texture of the soil is the indicator of its fertility status. Black colour with good amount of humus and lightweight are good for plant growth.

Pest and diseases: With regard to awareness and knowledge on pest management nearly 100 percent of the respondents expressed that they do not know to differentiate between pest and disease, identification of pest as well as its remedial measures. From the poor stunted growth and yellowing and curling of leafs around 90% of them indicated that due to the pest attach the productivity is very low. The local shop which sells pesticide is the only information provider to them, around 40 % of them point out that they have used the pesticide from the shop based on the guidelines given by the seller. The visit and interaction with the particular shop shows that only carbofuran is recommended which is retailed according the quantity requested. But further probing provided an information that the person selling the pesticide doesn't have any knowledge about it. Also, it is surprised to note that around 45 % of the households used aerosols which used to control mosquito's and according to them the result on control is good without knowing its consequences.

Common pest and diseases

Crops	***Pest and disease***
1. Chilies	Leaf curling, yellowing, sucking pests like aphids and white fly
2. Guava, custard apple	Sucking pests like mealy bugs
3. Curry leaf	Aphids and caterpillars, rust
4. Lemon	Caterpillar
5.	
6. Betel vine	Leaf curling, leaf rot
7. Banana	Corm rot
8. Leaf cabbage	diamond moth
9. Mango	Rust

Training and capacity building: Technological information and options available to the women and men on home garden species especially on pest and disease management is very limited. 96 % of them expressed that they learnt the skill from parents through observation and involved in the process, 6% of them indicated that they sometimes see the television in which improved practices are being shown. The interaction with the agricultural ministry indicated that though they have charted programmes and modules on home garden management, this island is not being listed in their list. Thus there is no formal means of institutional extension services imparted to them.
The mobility of women is highly restricted to their islands in contrast to men (going as a labour to other islands), which restricts their access to improved technologies and scientific inputs in management. In Maldives, Ministry of Fisheries, agriculture and Marine resources is the agency promotes agricultural development, but the Milandhoo island is not categorized as agricultural islands and hence their support is right now nothing. Otherwise the ministry is willing to facilitate need based training and capacity building programmes through demonstrations and other communication tools to provide awareness and information.

Composting method: No exclusive compost pit is maintained in the houses, but banana is grown in every household in a pit method, the domestic waste water is diverted to this pit and all the leaf litters, kitchen wastes and fallen, dried leaves are incorporated in the pit. Apart from that women are applying coconut coir and leaf frond wastes near the root surface wherever soil is harder and sandy. Few households exclusively used coconut husks both as a bunding material to hold soil in a raised bed position against water stagnation as well as organic waste. Two of the respondents expressed that they consciously apply leaf waste especially from breadfruit (bigger in size and more leaf fall) in front of their house front yard and apply it in banana pit for composting.

Major constraints: Nearly 98 % of the respondents expressed that pest and disease is the major constraint they are facing in the garden management. None has mentioned that soil health as a constraint, only 2 % of the women expressed that both pest and disease and quality planting materials as a constraint.

Natural hazards: Heavy wind during June – July is the major hazard which uproots or dislodges the banana trees, apart from this temporary water stagnation during heavy rainfall season is the major difficulty they are facing in crop management.

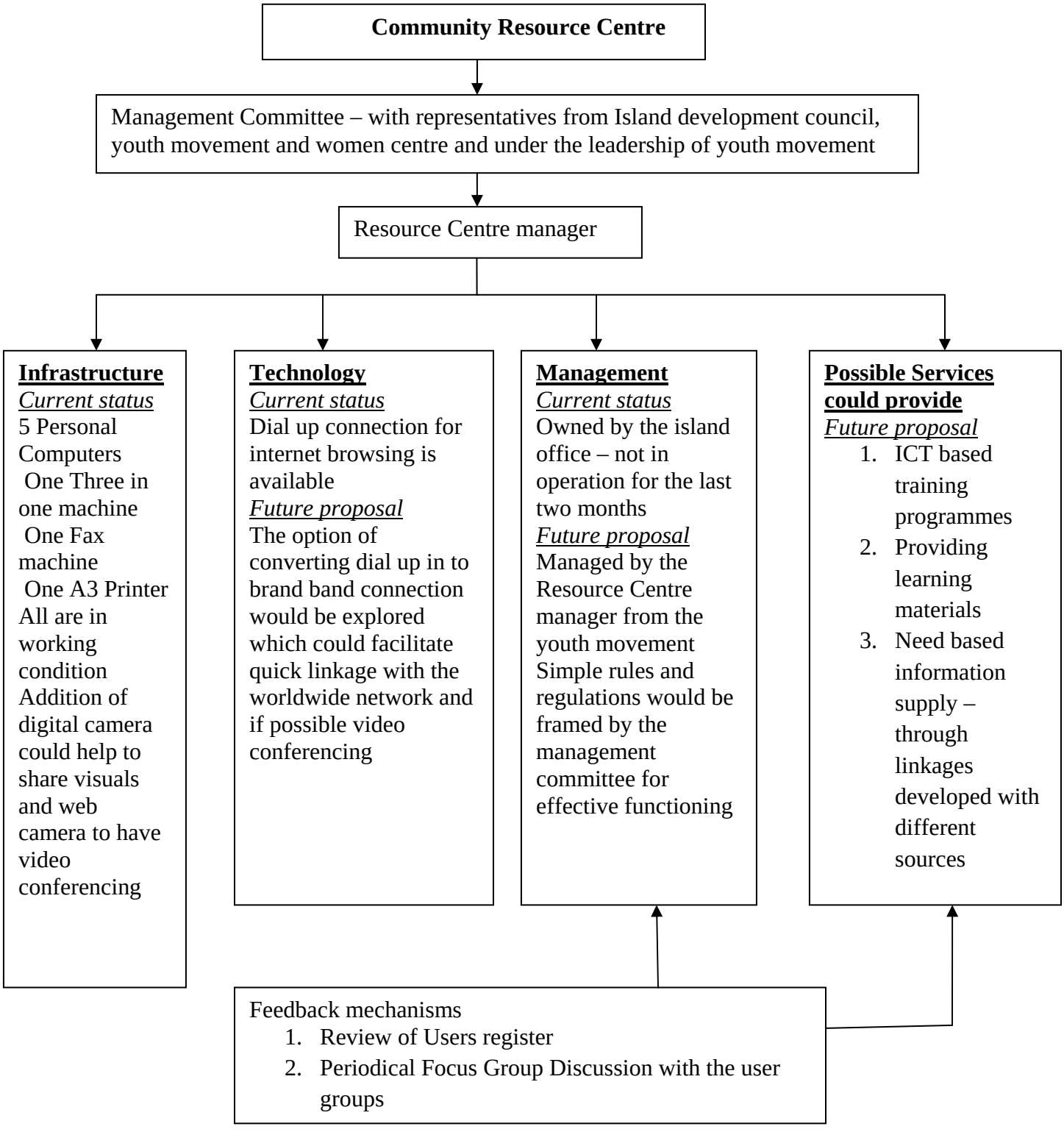
ANNEXURE C
Baseline survey on Information needs assessment

Information needs of different sections

Community/section	Nat. Disaster/Weather	Environment	Job/occupation	Education	Agriculture	Health
Youths/students	Rough sea, wind speed	Beach erosion and how to prevent	Employment opportunities in govt, private companies and resorts. Type of jobs available and salaries, locations There is a big company called job market access to the information provided by the company would be very useful. Fish movement and location	Subjects/courses to pursue their study , duration of the course, fee, accommodation admission procedure Vocational course like housekeeping, accounts, front door, management etc. higher studies in India, Srilanka etc.	-	-
Men/Construction workers	Weather especially about rough sea and wind speed Tsunami warning	-	Type of work and the price, accommodation, islands etc. Fish movement and location in the near shore area	Opportunities for higher studies after level 10of children	Pest and disease management in the home gardens and a few tree crops, reasons for low productivity and how to enhance the productivity	Nutritional literacy Remedies to dust and cement allergies-breathing problem
Men resort staff	Tsunami early warning	Beach erosion why and how to solve the problem	-	-	Pest and disease management of vegetable and improve productivity	Garbage management Information on better health facilities in Male and India
Government teacher	Tsunami warning	Environment related problems,	-	How to train the students to control/prevent	Diversity of crop cultivation, inputs such as seeds for vegetables	Information about better health

		beach erosion, solid waste managemen t, mosquito control		environmental problems, on beach erosion and how to control the problem.	and tree crops, saplings, Improved cultivation methods, pest and disease control methods, to improve the soil health	facilities available in Male and India
Women	Tsunami warning	Beach erosion Why and how to control	Opportunities available in the Island and available outside the island	Opportunities for higher studies after level 10 Teacher training for girls students About scholarships and other kind of financial supports	Disease and pest management- different methods Source for good quality seeds Soil management Healthy growth of the vegetable plants in the garden Information about Blood pressure and Diabetics	Nutritional food for children Garbage dumping and health problems Garbage manag.Health facilities in Male

ANNEXURE D
Proposed Community Resource Centre Structure



ANNEXURE D

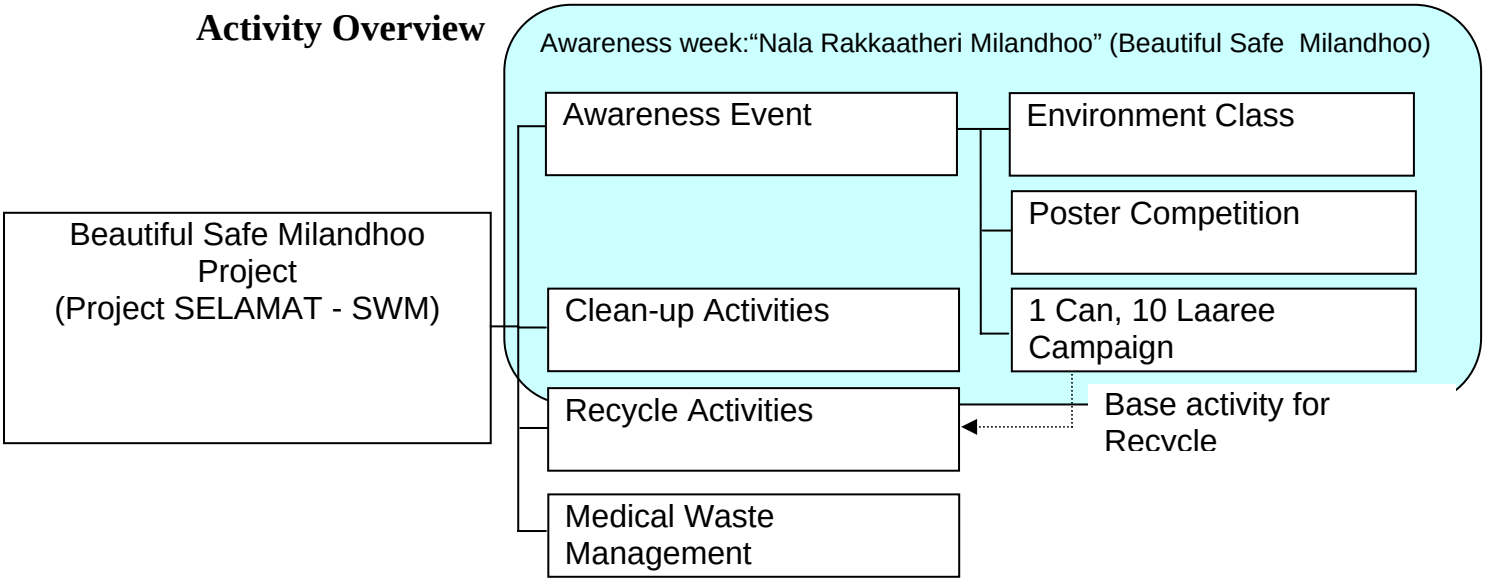
Baseline survey results summary on current Solid Waste Management

How the wastes are handled in Milandhoo and level of urgency for intervention

	Left at disposal sites	Thrown & burnt	Thrown into the sea	Compost	Banana tree compost	Reused at home
Organic (vegetable/fish/coconuts)	✓	✓	✓			
Organic (leaves/trunks)	✓	✓	✓		✓	
Plastic (drink bottles/sachets)	✓	✓	✓			✓
Metal/Can	✓	✓	✓			✓
Glass	✓	✓	✓			✓
Clothing/Shoes	✓	✓	✓			✓
Nappies	✓	✓	✓			

Red=Urgent/Yellow=Better intervene/show alternative methods

Activity Overview



ANNEXURE
Photo Gallery – Shivayani Atoll
COASTAL BIOSHIELDS

Severe beach erosion

Eco club members in action

Nursery for Bioshield development

ANNEXURE
PHOTO GALLERY – Shivayani Atoll
SEEDS exhibition & home Gardens

ANNEXURE
PHOTO GALLERY – SWC PRACTICES

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110 meter-long waste street towards the sea, Milandhoo

A tree standing on the coast surrounded by uncontrolled wastes,

Man throwing carton boxes with plastic cover into beautiful blue sea,

ANNEXURE
Photo Gallery – Shivayani Atoll, Field Visit November 2007

Komadhoo Island, Families who lost their houses during Tsunami wait for the construction of their new houses

Discussions taking place with Representatives of local NGOs, Island Development Committee, and CBOs.

Waste management was the main concern reported by local communities, as garbage disposals are just thrown in the beaches, leading to water/land contamination and increasing number/cases of diseases

Discussions taking place with the Women Committee of Kanditheem Island.

Lack of Coastal Protection and Beach Erosion were observed in all the Islands.

Home Kitchen Garden Initiative, taken by households in Fukaidhoo Island.