PROVENTION CONSORTIUM

Community Risk Assessment
and Action Planning project

MALDIVES – Maduvvaree and Meedhoo

Findings of the Vulnerability and Capacity Assessment In Maduvvaree and Meedhoo

CRA Toolkit

CASE STUDY

This case study is part of a broader ProVention Consortium initiative aimed at collecting and analyzing community risk assessment cases. For more information on this project, see www.proventionconsortium.org.

Bibliographical reference: International Federation of Red Cross and Red Crescent Societies, *Findings of the Vulnerability Capacity Assessment Community: Maduvvaree and Meedhoo*, IFRC, Geneva, Switzerland (2006).

Click-on reference to the **ReliefWeb country file for Maldives**:
http://www.reliefweb.int/rw/dbc.nsf/doc104?OpenForm&rc=3&cc=mdv

Note:
A Guidance Note has been developed for this case study. It contains an abstract, analyzes the main findings of the study, provides contextual and strategic notes and highlights the main lessons learned from the case. The guidance note has been developed by Stephanie Bouris in close collaboration with the author(s) of the case study and the organization(s) involved.

International Federation
of Red Cross and Red Crescent Societies

Maldives – Federation Secretariat and Country Delegation -
and
Communities from Maduvvarey and Meedhoo

VCA
Vulnerability and Capacity Assessment
23th – 29th June 2006

1. Introduction:

The disaster risk scenario for the Maldives can be described as moderate in general. Despite this, the Maldives was among the most severely affected countries hit by the Asian Tsunami on December 26th 2004.

The Maldives experiences ***moderate risk*** conditions owing to a ***low probability of hazard occurrence*** and ***high vulnerability from exposure due to geographical, topographical and socio-economic factors***. The Maldives' fragile ecological profile (low elevation, beach erosion) combined with its economic dependence on the tourism and fisheries sectors, high import dependence and limited transport facilities make it one of the most vulnerable countries in the region.

The country faces three major disaster risks: climate change (particularly the risk from rising sea levels); storm surge and tsunamis. It is also exposed to droughts as well as heavy rains and high waves caused by cyclones in the South Indian Ocean. Other disaster risks the country is exposed to are earthquakes, oil spills, aviation and navigation related hazards as well as major pandemics, such as avian influenza and SARS.

It is crucial to address this context of Maldives' high level of vulnerability in order to avoid future losses and damages of the scale suffered in the wake of the 2004 tsunami. Before the tsunami hit there were no preparedness or response plans in the Maldives and as such the communities were (and in many cases still are) unaware, or have limited knowledge of the potential disaster risks such as sea level rise, groundwater pollution and drinking water scarcity. Awareness raising and capacity building within communities, by way of involving them directly in development of detailed risk assessment (which map out disaster risks, who would be affected and how) as well as identification of risk reduction measures and plans are all integral steps in development of a community disaster management concept.

The International Federation of the Red Cross and Red Crescent Societies (IFRC) has been involved in the Maldives since the emergency post tsunami relief phase. The IFRC is supporting the Maldives in the recovery phase by undertaking extensive housing re-construction on four islands, water & sanitation programmes on several islands and assisting the Internally Displaced Persons (IDP's) with temporary housing programmes. Since September 2005, as part of the long-term capacity building programme, the IFRC has been supporting the formation of the Maldives Red Crescent Society (MRC). In addition, in March 2006, the IFRC Maldives Disaster Management programme was initiated.

The original emergency phase water and sanitation (WatSan) programmes involved the provision and supply of safe drinking water for many of the 79 tsunami affected islands. The development related IFRC implemented projects include the provision of 15,496 rainwater harvesting kits (completed), the installation of 4 municipal sewer systems (on-going) and the installation of 15 supplementary water supply systems (on-going).

The supplementary water supply programme (SWSS) was developed to assist the Government of Maldives (GoM) to address the need for alternative or supplementary drinking water supply on selected islands. The GoM originally allocated 20 islands to the IFRC programme,, however, in consultation with the GoM, this figure has recently been revised to 15 islands by IFRC (refer to Annex 1 for selected islands). The infrastructure, or hardware component of the programme involves the installation of a reverse osmosis unit (RO) plant house, piped distribution system and community tap stand points. In support of the hardware component, the IFRC also provide some operational training, selection of spare parts, yearly maintenance visits (4) and an extended infrastructure warranty. The objective was to have operational systems providing safe drinking water in times of extended drought or need through a community operated, maintained and managed supplementary water system.

The SWSS installation programme began in July 2005. To date four permanent SWSS have been completed, with another four installations currently under construction (completion estimated in August 2006). Two temporary installations were completed in December 2005 and February 2006 (after requests were lodged by GoM to provide emergency water supply to two GoM selected islands).

The results from ongoing monitoring, evaluation and review (December 2005-May 2006) of the SWSS programme have highlighted significant concerns related to sustainability of the programme and insufficient "software" support. Of primary concern is the question of whether the communities that IFRC have currently installed SWSS on (and will install future SWSS on) are in actual need for an alternative drinking water supply. This has major and obvious implication for the overall system sustainability. Some

of the primary concerns are related to the limited community capacity to support operation, maintenance and management, lack of community awareness of the concept of safe water and limited knowledge of water management and sustainable water management practices. Although changes are currently being made to the IFRC SWSS programme, these concerns have not been addressed adequately in the existing "software" support component of the SWSS programme.

The following report was developed with the full participation of community members who provided the data, supported the validation of it and helped to improve the quality of the information. Nine members of each community participated as active members of the VCA working group during the whole process, while other members of the communities participated in community meetings, focus groups, interviews and other different type of dialogues.

The use of participatory assessment tools and the consultation to the communities' members through all the process was substantial. Triangulation techniques were implemented as a result of daily analysis of the information gathered in order to verify the data collected that required further confirmation.

1.2. Executive Summary of the Findings of the Community VCA in Maduvvarey and Meedhoo.

This executive summary provides three main components:

1. Main conclusions of learning by doing
2. The Soft Plans of each Island to begin transforming hazard, risks and vulnerabilities.
3. The main findings of each island community (Annex one & two)

The Context of Learning and Doing
Facilitators fostered a cooperative 'learning and doing' relationship with the participants who were derived from two island communities:- Meedhoo and Maduvvarey.

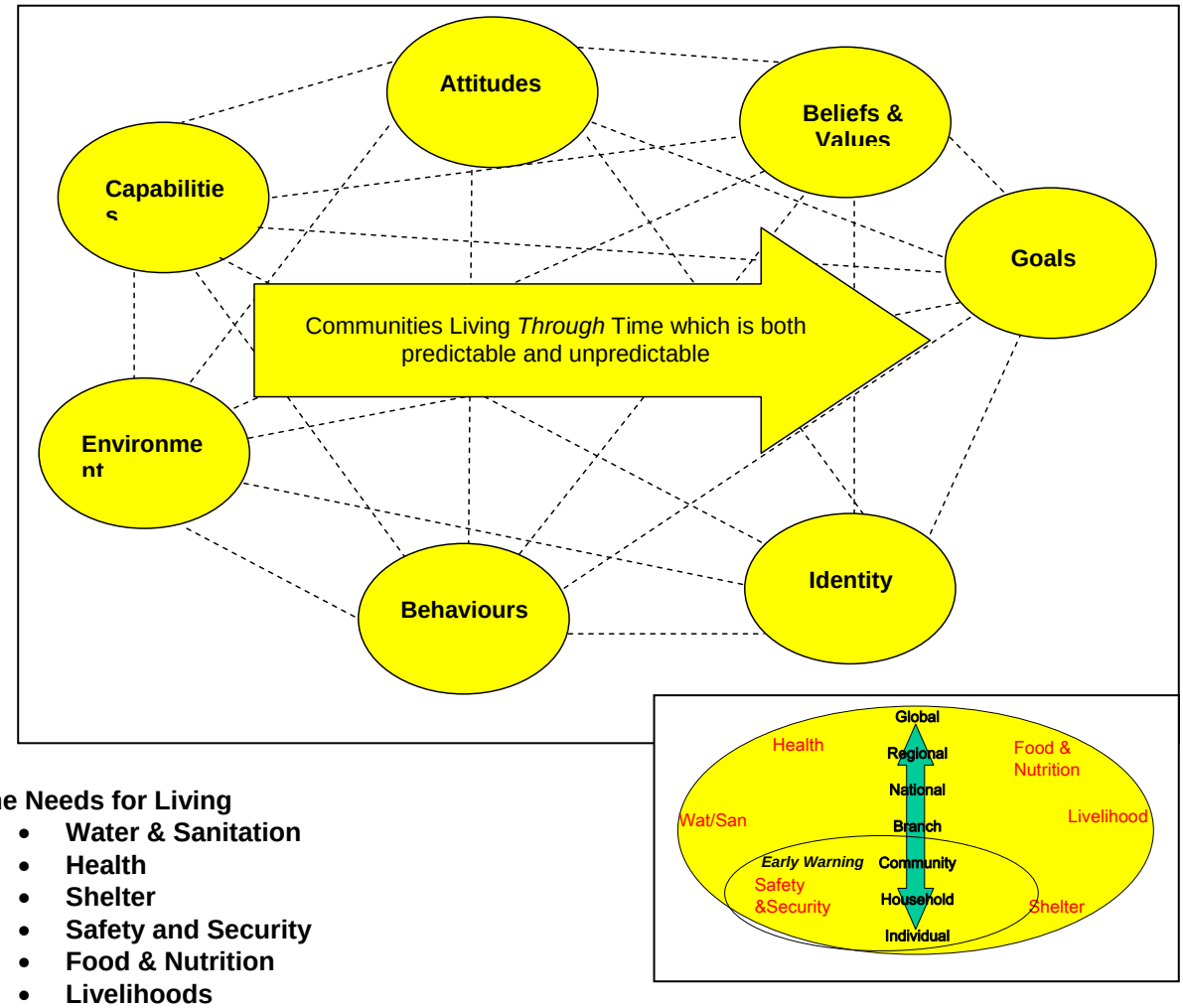
The communities were involved both in the classroom and the field exercises.. The context of the five days learning and action was framed in the two following basic models:

Information and Feedback on Living Through Time, which is Essentially Chaotic and Dynamic, Viewed from Constantly Changing Different Perceptual Positions and Relationships.

The Environment of Living through Time

- **Environment**
  This is the place where we exist in the present and experience living through *time*
- **Behaviour**
  The *Behaviours* of self, others and entities in the constantly changing *environment* of *living*.
- **Capabilities**
  The *Capabilities* or capacities of individuals, groups and entities based on the behaviours operating in the *environment* of *living*.
- **Attitudes**
  The *Attitudes* of those behaving in the particular *environment* of *living* based on an understanding of *capacities* and capabilities, often prescribed by *beliefs*, values, identity and purpose of existence.
- **Beliefs & Values**
  The *Belief & Values* that we hold based on the information at all the other levels in this model, past experience and learning.
- **Identity**
  The *Identity* of individuals, groups and entities that create a perception of who we, groups of people and entities are. It is the sense we have of our very being and influences all other levels.
- **Goal/Mission**
  The *Goal or mission* of an individual, groups or entity is the highest level of thinking because everything we do is related to our ultimate goals in living or where we aspire to be in the future.

These important levels of thinking about things was configured on the floor as a systemic and dynamic model:



The Needs for Living

- **Water & Sanitation**
- **Health**
- **Shelter**
- **Safety and Security**
- **Food & Nutrition**
- **Livelihoods**

The VCA investigative tools were taught and then used in action

The following were selected from the VCA Toolbox

- Direct Observation
- Spatial Mapping
- Vulnerability and Risk Mapping
- Capacities and Resource Mapping
- Seasonal Chart
- Community Organization Chart
- Livelihoods Chart
- Transect Walk
- Historical Chart
- Historical Visualization
- Historical Profile
- Focus Groups

The community VCA investigations were carried out by VCA groups on the two islands and the information gathered is presented here, first for Maduvaree and then Meedhoo.

1.3. Conclusion

The VCA workshop undertaken at Meedhoo Island was successful in training the VCA participants. Due to time restrictions, only limited group analysis of the data collected could be

conducted. The process of full community consultation and verification of the data requires more time and more detailed work.

The level of participation and enthusiasm shown from the Meedhoo community VCA participants was encouraging. The comments made by participants at the end of the workshop are provided in Table 12.

With the first phase of information collection completed at Meedhoo, the VCA process needs to be continued and followed up. The following programme is proposed:

- IFRC staff return to Meedhoo to regroup the VCA participants
- Community consultation of the VCA information, comment, review and validation
- Integrate community feedback into the VCA "Actions for Transformation"
- Review and further investigation of the viability of "Actions for Transformation"
- Development of a community action plan (Meedhoo CAP)
- Establish linkages with local, regional, government and external agencies

Feedback from VCA Participants (Meedhoo and Maduvvarey Island, June 2006)

Three most valued things:	The three greatest concerns / what can be done to improve:	Commitments:
- Gaining more information about the island. - Learning about what could be done and what is being done for development of the island. - Learning about how to overcome obstacles and difficulties through a collective effort.	- Would like to see more workshops like these. - Involving more of the community in such workshops. - Sharing the information and findings of such workshops with the rest of the community.	- Inform others. - To see what can done and how we can contribute to the development of the island. - To work towards eliminating various illnesses and diseases.
- Learning to take initiative - Learning about what could be done to protect the environment. - Being aware of the hazards and vulnerabilities in the island.	- The vulnerability exercises led me to think of the urgency of mitigation in some situations. - The lack of ability to foresee has to be taken seriously. - The workshop is a little too short to make the community to really get involved and participate.	- Strengthen the unity in the community. - Running awareness programmes. - Working towards improving the future progress of the island.
- When we have a plan, at first we can go to the past and do well. - Others are waiting; they will help us (I mean like Red Cross). - We are not alone. We must have involved in our communities.	- To learn more about the needs and feelings of other people. - Planning more for the future. - Sharing the information/findings with the rest of the community.	- Work towards reducing the risks through the resources available from the island.
- When planning it always helps to take into consideration, the past and also the future. - When trying to find solutions, always look first to what resources and capacities are available from the island. - The value of working together, with everyone.	- To conduct the workshop over a longer time frame. - To have the workshop facilitated in Dhivehi.	- We will reduce the vulnerabilities we are facing in the future.
- Shows ways of empowering the community. - Easy to use tools (..mostly). - Information gathered is comprehensive yet easy to understand.	- To run the workshop in a manner that would receive more support from the community. - Using the tools in giving the information. - As we are Maldivians, to have the	- I have learnt about how a community can recover after a disaster.

- Gathering information that can create awareness in the community. - Learning more about the island. - Learning about how to work together with others.	workshop conducted in Dhivehi.	
- Learning from the maps that there is plenty of resources and capacities in the island. - Learning about the thoughts of the people. - Learning about the impact of significant events from the past on the state of the island today.	- To make it something that will arouse more thoughts. - The benefits of working collectively. - Gathering information that will help us understand better the benefits and losses.	- Reducing the risks and hazards of the island through a collective effort.
- How to work with people from outside the community in order to develop the island. - Learning about what is needed for progress and development of the island. - The significance of past events when planning for the future.	- Language gap. - Lack of influential people. - Probably need a longer time frame.	- Work towards the development of the island.
- Learning about the future expectations. - Anyone can contribute to the development of the island. - The importance of improving general conditions.	- Having the workshop conducted in Dhivehi. - Run it for a longer period of time with more in-depth information (history).	- To increase the community's awareness through the information we have analysed in the workshop.
- To be able to interact with the community. - To help understand own problems. - To open eyes to the identity and problems of the community	- We can do this kind of job that I mean.. - Before we conduct you have to give us information about this. - You can do this just for a month and get help from the community more.	- Bring the problems to the awareness of the community.
- The importance of looking into problems, investigating and finding solutions. - Learning about the problems and obstacles in the community which can help in the development of the island. - How to protect and preserve the environment.	- Running similar workshops on more islands. - Conducting the workshop over a longer period of time. - Involving more community leaders in the workshop. - To involve as many people as possible in workshops like these	- Will work towards protecting the environment and addressing the social problems in the island. - Try and see which islands are in NEED of VCA.
- Understanding how and why dangerous situations come about. - Taking the initiative in getting aid from other source - Considering what has passed for what has passed plan for and the future.	- Finding a solution for island erosion. - Education. - Health.	- After discussing with the established committees, clubs and organizations present the knowledge gained from the workshop and describe the importance of coming forward in taking action.
- Recognizing the hazards facing the island. - Finding means to find solutions. - Finding out historical facts of the island.	- Involving as many people as possible. - Discussing many problems. - Increase the days.	- Present the knowledge to the community. - Find things out with the information gained. - Investigate the important things on the island

Finding the living condition of people Learning the condition of the island. Finding the right way to think about situation	New ways to develop an island. More ways of finding opportunities for employment. More resources.	Make the people more aware, plan for development and getting the views and advise of the people, about different things.
- Got a lot of information. - Working together. - Was fun and liked it.	- Have more workshops like this. - Keep a closer relationship to work together. - Let us (each person) do work on our own.	- Have to work for the development of the island.
- Knowing the condition of the island. - Knowing the problems facing the island people. - Getting more courage to work for the development of the island.	- Knowing things that can be done to develop the island. - Give help to those in need. - Give knowledge about dangers before it happens.	- Bring a solution for the problem of island erosion. - Making people more aware for the development. - Finding solutions for the problems facing the island.
- Importance of the water plant. - Taking the initiative. - To volunteer.	- Increase awareness. - Increase income. - Establish companies to get money.	- Keeping a safe environment
- Learnt the island condition. - How much interest people had (in this). - That everyone wants thing to be right.	- To select people who speak English and who are capable as participants. - To get all participants to work equally. - Get the aid of the atoll eg. increase the interest of the atoll administrative office in this.	- Do whatever we can on the island eg. Increase awareness. - Get the help of the government in this.
- The hazards in our community. - The solutions for those problems. - Knowing how to work to find solutions.	- Find more people to participate. - Increase the working days. - Divide the workshop to different levels and get the participation of students and adults.	- To do whatever possible to become safe from hazards and assist in the efforts towards this. -
- Found out that there are many hazards in this community. - How to go about solving these problems. - The importance of getting public opinion.	- To discuss in a broader environment and with more people. - To discuss more with the people, inform about the dangers and hazards - To assure them our assistance	- Will inform the people more and try to make them make them more aware.
- Gained information about different things. - Learnt how to plan ahead with the help of other people. - How to plan life.	- Island condition. - *Condition of the people - *Standard of life.	- With the knowledge we gained extend the knowledge to other people.
- Learn the condition of the island - Find the standard of development of the island. - Made more aware of the environment.	- Make the people aware of what to do if there is a disaster. - To work in extending aid to people in suffering. - To inform the people on what can be done to develop the island.	- To make the people more aware of the environment. - To work for the development of the island. - To make the people more aware and they work to solve the problems facing the island.
- Good facilitation. - Team work. - Excellent food.	- VCA limitations.	To carry it forward.
- Thanks for the kind		

cooperation. I hope we will meet soon and from this we will get good result. And we will reach to what we want. - And for the future. Thank you.		
- Perceptions of Maduvvary People and IDPs living in the same island with harmony - Elderly people's openness and attitude to share information/contribute - The ways and importance to analyze	- How IFRC can utilize this information and continue their work on the islands - To keep participants motivated to commit with the plans and to build their capacity - To ensure that the community shares the outcomes and have access to IFRC when they need	- My Commitment : I would like to try some of the steps taken during the course when starting my new island
- Some of the tools are extraordinary to identify capacities and vulnerabilities in the community - Still "under slack" of the participation, considering the intellectual/mental effort requested - The course VCA is excellent tool to identify a program (needed by community) to be implemented	- Main concern may be the time constrain: a lot information in a limited period of time - Long working days may have proved that decision makers or influential people in the community did not participate due to lack of time - What is it happening next? How do we link up/ move from identified action to "plan of action"?	"From a selfish" point of view, I have learnt a lot that I will be able to use later. Structuralize information/data coming from different sources. Be able to "think out of the box"
- Think outside the box - Community involvement - Discussion	- Present situation of problems, interest and active participation	- To be more involved in the work for the improvement of the situation.

2. Soft/ Draft Action Plans

2.1 Maduvvarey – Soft Action Plan

The below information is the result of the VCA process and reflects the latest components of the work done with the communities. The complete process, with relevant data for the IFRC projects is available as Annex 1 for Maduvvarey and Annex 2 for Meedhoo.

Vulnerability actions for transformation

After a general analysis of the information gathered, the following issues were identified as main points for the discussion with community leaders. ***The order and the numbers do not represent the level of priorities.***

1 Erosion	**2** Dengue	**3** Viral fever	**4** New disaster (tsunami)	**5** Garbage management	**6** Water contamination
7 High population	**8** Pollution	**9** All green are loss	**10** Sewer system needs improvement	**11** Foreign labour competition at tourist resort	**12** Electricity at maximum capacity
13 Increase costs of diesel, gas, increases the cost of transport and electricity	**14** Land use planning monitoring and projection for the future	**15** Upgrade basic health equipment	**16** Develop a disaster response plan	**17** Foreign labour competition in every sector	**18** Food supply
19 Construction material					

availability

After consultation with five working groups from the community, the following chart reflects the priorities that communities have identified as the main issues to address. Participants were requested to provide 5 points to the main priority and 1 to the lowest.

Vulnerability classification priorities

1	**Erosion**	**4**	**5**	**0**	**3**	**5**	**17**	**3.4**	**1**
2	Dengue	0	0	0	0	2	2	0.4	9
3	Viral fever	0	0	0	0	1	1	0.2	10
4	New disaster – Tsunami	0	0	0	0	2	2	0.4	9
5	**Garbage management**	**5**	**1**	**0**	**4**	**3**	**13**	**2.6**	**3**
6	**Water contamination**	**3**	**2**	**0**	**5**	**3**	**13**	**2.6**	**3**
7	**High population density**	**3**	**4**	**1**	**2**	**1**	**11**	**2.2**	**5**
8	Pollution	3	0	0	0	0	3	0.6	8
9	All the green area loss	0	3	0	0	0	3	0.6	8
10	**Sewer system needs improvement**	**4**	**0**	**4**	**4**	**4**	**16**	**3.2**	**2**
11	Foreign labour competition on resorts	0	0	0	3	0	3	0.6	8
12	Electricity of maximum capacity	2	0	0	3	3	8	1.6	6
13	Increase cost of diesel, gas, transport cost and electricity	2	0	5	0	1	8	1.6	6
14	Land use planning monitoring and projection for the future	1	4	1	0	0	6	1.2	7
15	**Upgrade basic health equipment**	**2**	**4**	**2**	**3**	**1**	**12**	**2.4**	**4**
16	Develop a disaster response					1	1	0.2	10
17	Foreign labour competition in every sectors			3			3	0.6	8
18	Food supply	0	0	0	2	0	2	0.4	9
19	Construction material availability	0	0	0	2	0	2	0.4	9

The following chart reflects the main 5 vulnerabilities identified as part of the analysis of the information gathered during the VCA activities at the community level. The actions for transformation on the column on the right are the initial ideas from the community of Maduvvarey.

Vulnerability	Actions for transformation
1. Erosion	**a. Planting trees (whole community)** **b. Making sea wall (community IDC government)** **c. Discuss seriously among community leaders about the problem** **d. Awareness program including school children and youth.** **e.** Create an special committee to work for the prevention of the problem
2. To improve the sewer management system and prevent the water contamination	a. Elaborate an assessment checklist for sewer system facilities b. Assess household sewer system facilities and develop a technical survey of the island c. Construct a main conventional sewer system (liquid – solid network) d. **To buy a gully sucker (solid waste) and develop drying beds** e. **Construct a collection network for the liquid waste** f. **Develop a community water contribution plan** g. **Avoid disposal of oils and other chemicals on the ground**
3. Improve garbage management conditions	a. Construct a garbage center with government and donors aid b. **To separate garbage and destroy what is possible** c. **To take care or biodegradable waste at home (i.e fertilizer awareness)** d. Send metals and plastics to Thilafushi near Male' e. Stop bringing plastic bags and user paper bags f. Awareness on recycling g. **Use a near by island for garbage**
4. High population density	a. Family planning b. Migration c. Reclamation of land d. High rise buildings structures and foundations e. Land use planning f. Awareness of possible impact on future issues related to: - Garbage increase

	- Drinking water access - Health needs - Education needs - Building infrastructure - Sewer system needs - Job opportunities g. Environmental impact
5. Upgrade health centre with basic equipment (for testing thalassemia, and dengue, screening pregnant women, and X-ray facilities)	a. To have a laboratory and staff b. To be able to buy necessary medicine from the island c. To train the nurses d. Train island people in first aid

As a result of the consultation process with the communities, the group of VCA facilitators discussed the above vulnerabilities and actions for transformation with representatives from the community from different groups:

An indication of the level of intervention required in order to convert the actions for transformation into reality, or implement change is proposed in the right hand column of the following table. Three categories are provided, C, I and T, which are detailed as:

C = change: Indicates that change could be bought about through community intervention, and that change could occur immediately or in the short term.
I = influence: Indicates that some level of influence would be required to bring about change, for example the initiative requires the approval and backing of the island office, additional assistance at the local level.
T = full transformation: Indicates that a high level of intervention, support and assistance (i.e. from government, regional groups or an outside agency) would be required to bring about any change.

Vulnerability	Actions for transformation	Change	Influence	Transformation
Erosion	**Planting trees (whole community)**	X		
	Making sea wall (community IDC government)	X	X	X
	Discuss seriously among community leaders about the problem	X		
	Awareness program including school children and youth.	X	X	
	Create an special committee to work for the prevention of the problem	X		
To improve the sewer management system and prevent the water contamination	Elaborate an assessment checklist for sewer system facilities		X	
	Assess household sewer system facilities and develop a technical survey of the island	X		
	Construct a main conventional sewer system (liquid – solid network)			X
	To buy a gully sucker (solid waste) and develop drying beds			X
	Construct a collection network for the liquid waste			X
	Develop a community contribution plan	X		
	Avoid disposal of oils and other chemicals on the ground	X	X	
Improve garbage management conditions	Construct a garbage center with government and donors aid			X
	To separate garbage and destroy what is possible		X	
	To take care or biodegradable waste at home (i.e fertilizer awareness)	X		
	Send metals and plastics to Thilafushi near male			X
	Stop bringing plastic bags and user paper bags	X		
	Awareness on recycling	X		
	Use a near by island for garbage		X	
High population density	Family planning	X		
	Migration			X
	Reclamation of land			X
	High rise buildings structures and foundations		X	
	Land use planning	X		

	Awareness of possible impact on future issues related to: a. Garbage increase b. Drinking water access c. Health needs d. Education needs e. Building infrastructure f. Sewer system needs g. Job opportunities h. Environmental impact	X		
Upgrade health centre with basic equipment	To have a laboratory and staff	X	X	X
	To be able to buy necessary medicine from the island	X		
	To train the nurses		X	X
	Train island people in first aid	X	X	

Once the issues for change and influence where identified, participants decided if: community members will need technical support, financial support or promotion and increase of community awareness

TS = Technical Assistance ***FS = Financial assistance*** ***CW= Community Work***

Change	**TS**	**FS**	**CW**
Erosion			
- making wall	X		X
- awareness programme	X	X	X
- planting tree	X		X
- Discuss with the leaders about erosion	X		X
- Create special committee			X
Sewage			
- Assessment of household	X		X
Garbage			
- Biodegradable waste at home	X	X	X
- Stop brings plastic bag			X
- Awareness on recycling	X		X
High population			
- family planning	X		X
- land use planning	X		X
- awareness of possible impact	X		X
Upgrade Health center basic equipment			
- Install a laboratory with trained staff	X	X	X
- Buy supplementary necessary medicine		X	X
- First aid training for islanders	X		X

Influence	**TS**	**FS**	**CW**
Erosion			
- making wall	X	X	X
- awareness programme	X		X
Sewer			
- Elaborate an assessment	X	X	X
Garbage			
- to separate garbage	X	X	X
- to destroy what ever is possible	X	X	X
High population	X	X	X
- high raise building			
Upgrade basic equipment of ***health center***	X	X	X
- Install a laboratory with trained staff	X	X	
- Train nurse and staff	X	X	X
- First aid training for islanders			

It should be noted that additional consultation, verification and analysis by the wider community is required before this list can be validated.

2.2 Meedhoo Island Soft Action Plan

Vulnerability Actions for Transformation

Following an analysis of all the information presented in Annex 2 on Meedhoo, the VCA team proposed five significant issues that are important to the community. The table below reflects the main vulnerabilities identified by the participants, with initial ideas for the actions for transformation. An indication of the level of intervention required in order to convert the actions for transformation into reality, or implement change is proposed in the right hand column of the table. Three categories are provided, C, I and T, which are detailed as:

C = Change Indicates that change could be bought about through community intervention, and that change could occur immediately or in the short term
I = Influence Indicates that some level of influence would be required to bring about change, for example the initiative requires the approval and backing of the island office, additional assistance at the local level
T = Full Transformation Indicates that a high level of intervention, support and assistance (i.e. from government, regional groups or an outside agency) would be required to bring about any change.

It should be noted that additional consultation, verification and analysis by the wider community is required before this list can be validated.

Main Issues identified for Meedhoo Island and Initial Ideas for Transformation

Vulnerability / Issue	Actions for transformation	Level Required to Implement Actions		
		C (Change)	I (Influence)	T (Transform)
Community Income Generating Activities	• Formation of a company to raise money for the island community (selling of fuel, boat services – slipway)	✓	✓	✓
	• Selling of water from the RO (reverse osmosis) plant to households and people coming from other islands			✓
	• Establishing a tourist shop to raise money for the island		✓	✓
	• Establishing a museum for touristwith an entry fee	✓	✓	✓
	• Agricultural activities on Dhigalhi or on Meedhoo community	✓	✓	
Garbage and Waste Management	• Separate items which do not burn	✓		
	• Run awareness programmes about actions which can reduce the amount of waste created	✓	✓	
	• Improve safety measures around the waste management center (e.g. to reduce the risk of fire)		✓	
	• Install community rubbish bins around the island	✓	✓	
	• Install compost bins		✓	

	• Establish a regular schedule for removing waste from homes and islands	✓		✓
	• Separate items which can be reused (e.g. plastic bottles and furniture	✓		
	• Create awareness programmes on waste recycling	✓		
Job Opportunities	• Establish a training center		✓	✓
	• Establish and run special courses for women	✓		
	• Establish more souvenir shops		✓	✓
	• Build up a community company		✓	✓
	• Develop an awareness programme for youth regarding potential job opportunity and maximizing job opportunity	✓		
	• Establish a position(s) for maintenance of the sewer pipes		✓	✓
	• Establish a position(s) for waste management	✓	✓	✓
	• Establish a position(s) for operation and maintenance of the RO unit	✓	✓	✓
	• Increase the output of thatch weaving	✓	✓	
	• Increase the involvement in agriculture			✓
	• Fish processing			✓
	• Create more holiday islands			✓
	• Establish a tuition center		✓	✓
	• Develop floriculture	✓	✓	
Erosion and Beach Zone	• Stop sand excavation	✓		
	• Plant more trees along the beach and erosion prone areas	✓		
	• Stop coral harvesting	✓		
	• Stop dumping garbage into the sea	✓		
	• Create awareness programmes to deliver key messages on the issue of island erosion to whole community		✓	
	• Construct a sea wall			✓
	• Fill and bags and place along beach, or erosion prone zones		✓	
	• Stop cutting down trees	✓		
Access to Safe Drinking Water / Water issues	• Use water from RO water plant in times of shortage of rainwater (effectively manage the operation and maintenance of the plant)			✓
	• Ensure all rainwater tanks are cleaned regularly	✓		

	• Ensure all roofs are cleaned regularly	✓		
	• Encourage the use of boiled water when appropriate	✓		
	• Ensure the chlorination of all wells is undertaken regularly		✓	
	• Ensure safe water storage (including covering the tanks with netting, covering the tops of wells)	✓		
	• Establish a minimum distance between septic tanks and well which should be adhered to for all future residential buildings, and implemented where appropriate on all existing households		✓	
	• Ensure the maintenance of all sewer pipelines is conducted to maintain/improve groundwater quality			✓

More detailed investigations were conducted on the actions that were allocated in the change or influence categories. Two further tables were developed which separated the level of assistance or support which would be required to convert these C and I actions into reality. The levels of support include community assistance, financial support, or technical support.

The issues that require full transformation (i.e. in the T category) were not considered in this preliminary phase of analysis as invariably the level of assistance or support is complicated and high.

Level of Support Required for "Influence" Identified Transformation Actions,

Issue / Vulnerability	Action for Transformation	Technical Support Required	Financial Support Required	Community work / Community Initiative Required
Community Income Generating Activities	Form an island company*		✓	✓
	Set up tourist shop*	✓	✓	
	Set up tourist museum*	✓	✓	
	Agricultural activities	✓	✓	✓
Garbage / Waste Management	Garbage awareness program	✓	✓	✓
	Improve safety measures around waste management area	✓	✓	✓
	Rubbish bins installed	✓	✓	✓
	Compost bins		✓	✓
Job Opportunities	Training centre*	✓	✓	✓
	Souvenir shops*	✓	✓	✓
	Community company*		✓	✓
	Maintaining sewer pipes*		✓	✓
	Waste management*		✓	✓
	Thatch weaving			✓
	Agriculture*	✓	✓	✓
	Tuition center*	✓	✓	✓
	Floriculture	✓		✓
Erosion	Erosion awareness program		✓	✓
	Sand bags	✓	✓	✓
Water	Chlorination of wells	✓		✓
	Distance between septic tanks and wells	✓	✓	✓

*Note: * indicated action for transformation that was also allocated to the T category (influence and full transformation.*

Level of Support Required for "Change" Identified Transformation Actions,

Issue / Vulnerability	Action for Transformation	Technical Support Required	Financial Support Required	Community work / Community Initiative Required
Garbage	Separate items/reduce waste			✓
	Island rubbish bins	✓	✓	✓
	Regular rubbish collection			✓
	Re-use/recycle items			✓
Erosion	Stop sand excavation			✓
	Plant trees/stopping cutting down			✓
	Stop coral harvesting			✓
	Stop dumping garbage on the sea			✓
Water	Cleaning water tanks			✓
	Cleaning roofs			✓
	Using boiled water			✓
	Chlorination of wells			✓
	Good water storage			✓
	Covering tanks (nets)			✓
	Covering wells		✓	✓
Job Opportunities	Special courses for women	✓	✓	✓
	Awareness for youth		✓	✓
	Waste management*		✓	✓
	Thatch weaving			✓
	Floriculture	✓	✓	
Community Income	Form and island community*		✓	✓
	Museum for tourists*	✓	✓	
	Agriculture activities*	✓	✓	✓

*Note: * indicates an action for transformation that was also allocated to both the I and T categories (influence and full transformation)*

Annex 1:

Maduvvarey-Information gathered 23th – 29th JUNE 2006

Direct Observation

Maduvvarey is an island located at approximately 3 and half hours by speed boat (cost 1200 US dollars) from the capital city Male. The other possibility to reach this island is by private sea plane which takes approximately 45 minutes flight (costs 2400 US$). Transportation is sufficient in normal conditions, in case of emergency; the nearest hospital is two hours by dhoani ride (boat) and 20 minutes by speed boat. The island does not show any sign of tsunami devastation (Dec. 2004) and this was confirmed that the island was slightly affected by the tsunami.

Once in the island, walking around the entire island could take 15 to 20 minutes. From one end to the other end (wider side of the island – east to west) takes approximately 5 minutes, walking distance, while walking from north to south could take 3 to four minutes.

Current population has reached maximum capacity in the island. There is limited land for new houses and extension. This situation requires serious analysis for the future development of the island. Beside the lack of space there are problems associated with the houses, with weak roofs and unsecured fixing roof system, accidents can happen in case of strong winds.

The direct observation has lead us to the assumption that due to similar standard of houses – homogeneous standards – which probably means that in the island are similar standards of income and good levels of equity. The other assumption, based on the direct observation, it seems to be that Maduvvarey have quite high standard of leaving. Adults and young have access to mobile phone, television, wash machine, and other facilities.

Education is provided to every child and the size of the school seems to be sufficient to the number of people living in the island. Though, it is clear also that access to higher education, technical or university level does not exist. The assumption is that those students willing to have higher education have to migrate to Male for secondary school and then to other countries for the university.

(Rain/drinking water seems to be sufficient and key informants have mentioned that there is no scarcity during the year, however, it is worth it to mention that salt-water intrusion has become an issue in some sectors of the island. This observation has been also confirmed in the baseline survey results.

The quality of the groundwater differs from each area and season of the year. When salty water affects a family, the solidarity factor seems to function well, i.e. if one house runs out of water; they go to fetch water at their neighbour's.

Sewer system requires improving. The wastewater is discharged directly in the ocean, causing severe pollution of sea-water.

The garbage is burned on at the disposal site. It seems that the community is practicing waste separation, but no recycling, therefore there are issues for non burnable waste. They burn burnable and plastic too. But they do not do for metal and steals. There are possible problems link to the presence of rats.

Electric production capacity is at is maximum use, not enough electricity for temporary shelter, though the island is making sure 24 hour service.

<table>
<tr><td></td><td>Direct Observation</td><td>Information gathered through a baseline survey on 61 families; of them, 6 are IDPs.</td></tr>
<tr><td>Demographic Information:</td><td>Maduvvarey has 2,015 people living on the island. 54% of them are male and 46% are female.
Due the Tsunami evacuation from other island an IDP camp was built. The population of the IDP's is of 166 people. 50% adults and 50% children.</td><td>- Population: 2,015
- IDPs: 168
- No of household: 262
- 100% of the population is Muslim

The island was not very affected by the tsunami and did not experience any other major disasters in last 10 years.</td></tr>
<tr><td>Source of Income and main occupation</td><td>The main occupation activities for their daily subsistence are:
• Fishing is a daily activity of great percentage of the islanders.
• Fishing processing is done on individual or groups. Fish processing involves the development of dry fish or salty fish.
• Farming on an uninhabited island (Furaberi) farmers go to this near by island mainly during March to July for the farming activities. Every day they leave Maduvvaree in the morning and return in the afternoon.
• Work at the resorts
• Boat factory
• Local business (few)</td><td><table><tr><th>Activity</th><th>Female</th><th>Male</th></tr><tr><td>Fishing</td><td>0</td><td>53%</td></tr><tr><td>Fishing processing</td><td>12%</td><td>18%</td></tr><tr><td>Boat building</td><td>0</td><td>15%</td></tr><tr><td>Agriculture/gardening</td><td>2,94%</td><td>0</td></tr><tr><td>Business</td><td>5,88%</td><td>5,88%</td></tr><tr><td>Service</td><td>18%</td><td>18%</td></tr><tr><td>Tourism</td><td>0</td><td>24%</td></tr><tr><td>Construction</td><td>0</td><td>24%</td></tr><tr><td>Others</td><td>8.82%</td><td>14.70%</td></tr></table></td></tr>
<tr><td>Infrastructure:</td><td colspan="2">➢ Houses:
- Single storey private houses; build with masonery (coral and cement blocks). The roofs are of two types of material: cement and zinc sheets. Some of the roofs are not properly secure and on the top of some of them bricks are utilized to secure the roofs. Because of lack of space the trend in the island is to build two storey houses.
- Kitchens are separated from the houses in almost all the cases.
- Toilets are inside the houses in most of the cases, in some houses each room has its own bathroom with toilets.
- In most cases, houses have a small garden with boundary walls.
➢ School facilities
- 1 pre-school that host 90 students,
- 1 primary-secondary school that host 680 students, divided on morning (Grades 6 – 10) and afternoon (grades 1 -5 high school level).</td></tr>
<tr><td></td><td colspan="2">➢ The Internal Displace People: 166 IDPs hosted in Maduvvarey are living in temporary shelters in 3 blocks, units 3, 6 and 8. The conditions of the temporary shelters are very well constructed and well maintained, each unit house has sufficient space for people to feel treated with dignity and respect. Access to water and electricity is similar as to the host people of the island. However, 11 IDPs families decided not to live in the IDPS camps but in private houses and are complaining to have to pay the electricity bill, which is not paid by the IDPs living in the IDP camps.
➢ The roads: Are made of compacted sand and are flat roads, in most of the cases the width is between 3 – 6 meters.
➢ Green space / play grounds: The island has isolated trees due to the overpopulation that the island have. There are wide sandy spaces, small beach and private gardens of a small size.</td></tr>
</table>

	➢ **Sports facilities:** The Island offers to the inhabitants 2 soccer fields, a volleyball field, cricket field and the beaches. ➢ ***Electricity***: two community power houses. The supply is of good quality and the community pays for the service. ➢ ***Telephone***: Two public phone booths are available in the island by the company Dhiraagu mobile network, as the capacity of the power generator is lower to the needs of the antenna; the company uses solar power system. Internet cyber cafe (one) is available in the island. ➢ **Cemetery:** the community has a grave yard located in the center of the island.	
Health, water, sanitation and services:	***Water***: There are two sources of water access: Groundwater for cleaning, washing and gardening and rainwater for cooking and drinking. Rainwater is stored in cement and plastic tanks. Community rainwater tanks are available at the mosque, while the community rainwater tanks under the management of the Women Development Committee (WDC) is not in use and not well maintained ***Sanitation***: ***Disposals:*** The two sides of the island (wide extreme sides, east and west) are use as garbage disposals areas without protection. ***Sewer***: They use septic tanks and ocean out fall ***Animals***: The island has few chickens, crows, cats, pigeon, great number of mouse, bats and lizards, gekko, crabs, snakes which are the most visible one's	**Water:** 100% of the interviewed families (including 6 IDPs families) have at least one rainwater tank, which water is used for drinking and cooking purpose. The water tanks are cleaned regularly. 100% of the Maduvvarey families have a private shallow well, which water used for household purpose and gardening. 41% of the people treat their drinking water. 18% of the interviewed affirmed that the water sources changes according to wet and the rains seasons. The main problem is that the water is getting salty during the dry season. However, most of them (81%) sources the alternative drinking water from the neighbour rainwater tank, and 27% from communal rainwater tank and /or 36% from the groundwater. There is a willingness to improve the drinking water supply, and this is expressed by 68% of the interviewed, who would be prepared to pay for community improved water supply. ***Sanitation*** 97% of the families have at least one flush toilet in the house , and 9,37% a gifili (latrine) Only 62% of the sewage is collected in septic tank, 9,37% sewage to the sea and 22% soaked. From the 50% collected in the septic tank. Is emptying to the sea, 16% buried on the plot and 9,37% soaked. For 75% of the interviewed, mosquitoes are a problem in the island, but only 25% associate dengue fever to the mosquitoes. Instead there is a great knowledge and practise hygiene as prevention for diarrhoea and other waterborne diseases.

Institutions:	The following building institutions were identified: ➢ 1 Island office ➢ 1 Health Centre ➢ 1 Pre-school ➢ 1 Court house ➢ 2 Power houses ➢ 3 Mosques (1 out of them is for male community members)

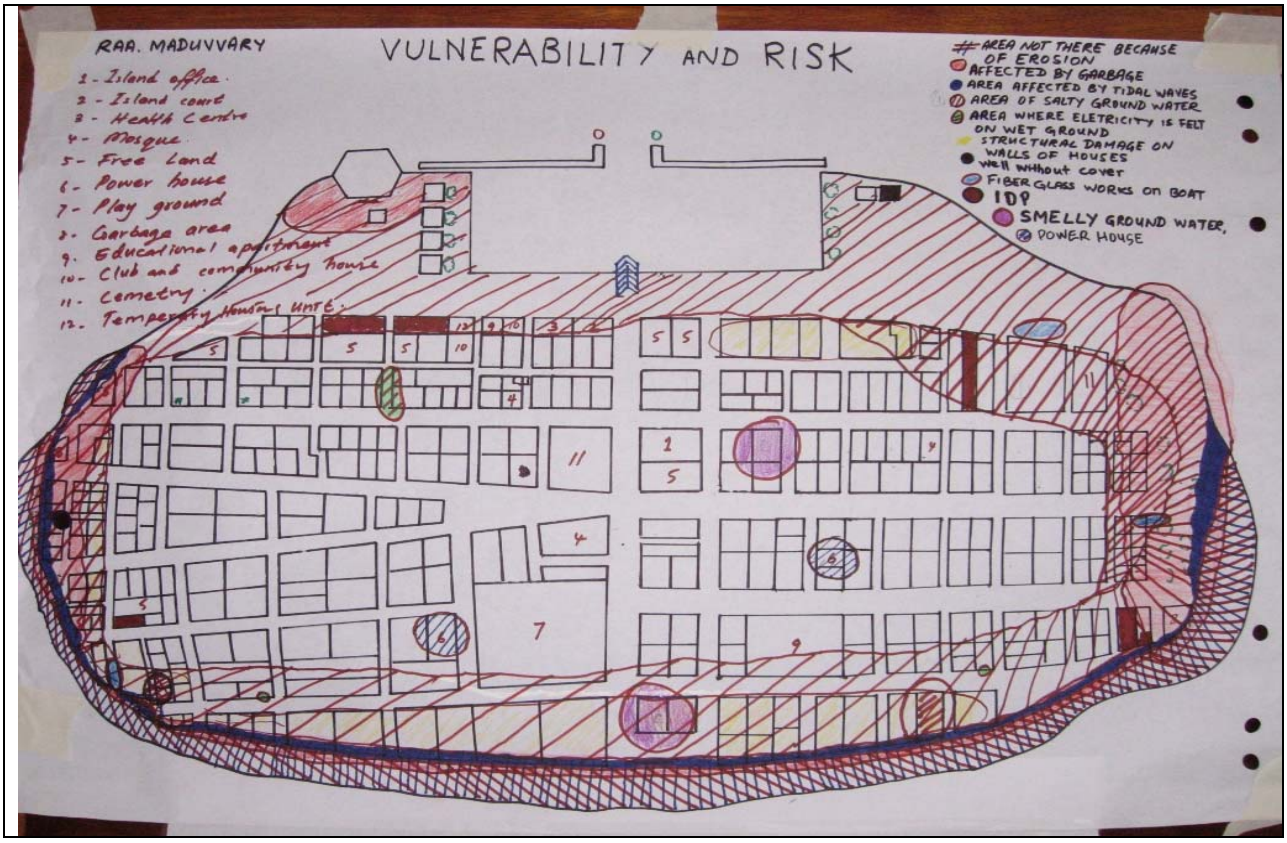
Daily activities:	***Food***: The diet in the island depends mainly of curry, garudhiya, rihaakuru, rice, roshi, salad, tuna, chicken, carrot, cabbage, papaya, coconut, and bred fruit. ***Shops***: 11 shops, fish selling market (jetty) ***Recreation activities***: volley ball, football, bashi ball, netball, cricket, playing cards, caram board, television and TV games, karaoke. ***Transportation***: Walk, bicycle, motorbike, ferry dhoni goes from Maduvvaree to Male (capital) once a week (200 Mrf both ways).

Mapping

Spatial

The spatial map shows clearly that Maduvvarey land space has reached the maximum and trees are cut to provide more plots for houses building. In effect, new houses have been constructed on the west part of the island, which is subject to erosion, tidal wave and groundwater contamination and salinity. One of the solutions envisaged by the community is to elaborate a land use plan and to monitoring it.

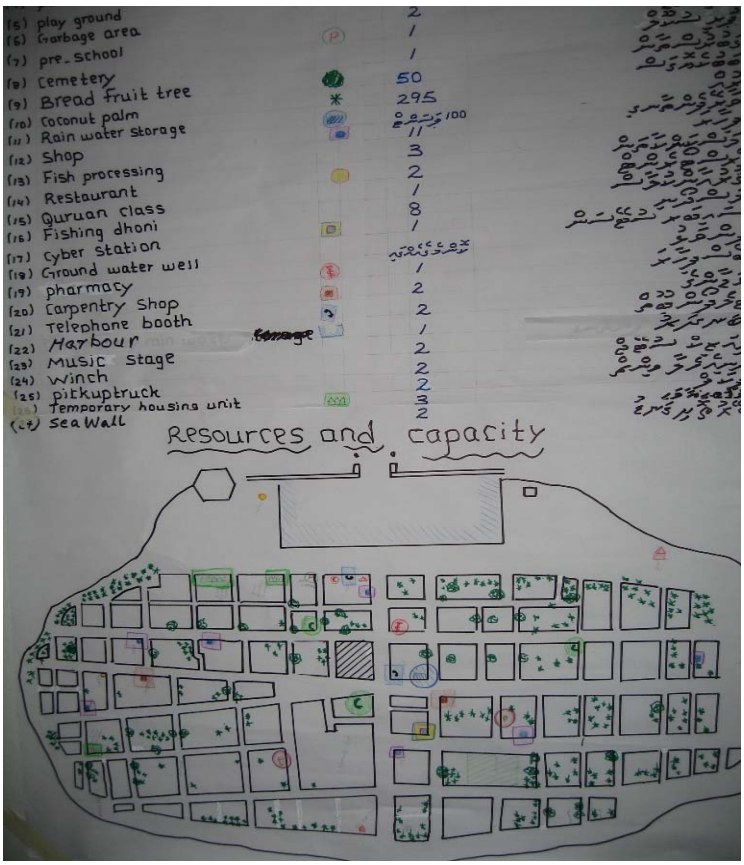
Vulnerability / Risk Map



The **vulnerability / risk map** reflects:

- area washed away by the erosion
- area affected by garbage
- area washed by tidal wave
- Salty groundwater area
- Electricity leakage when ground is wet
- Few houses with craked walls due to the tsunami
- Open wells in the streets
- Electricity distribution condition in hazardous conditions
- IDPs Camps to close each other, no privacy, fire could be a problems no extinguishers.
- Contaminated groundwater in two points
- Both power house are not meeting the security standards

Capacity Resource Map



The purpose of this map is to identify the capacities and the resources that exist in the community and to preserve, protect and access such services when needed.

This map shows the main resources on the island. The island is covered by coconut and breadfruit trees. There are enough shops and other places where necessary food and others household items can be obtained.

There is good infrastructure for emergency shelters like mosques schools and other places.Other existing institutions are health centre, court, island administration office schools etc. Those resources need to be well maintained for assuring the well being of the community for the future.

Transect walk

Type of ground and land condition	Sand	Sand	Sand	Sand	Sand
Livelihood		-Fish processing - Boat building	- Coconut palms - Chicken - Fish processing	- Coconut palms - Brad fruit - Trees - boats	- Coconut palms - Fish processing - Boat shelter - Fire wood
Level of local organization	- Boat building - Drinking water management	- Boat building - Drinking water management		Rainwater tank Compound with new perimeters wall	Fish processing - Boat building
Visible vulnerabilities	- Waste dump - Beach erosion - Fiberglass waste on the beach	- Rubbish washed up on the beach - Beach erosion	- beach erosion - mosquitoes breeding	- beach erosion - ground water becoming salty	Beach erosion - Rubbish washed up on the beach - empty cans containing stagnant water with mosquitoes
Conditions that increase vulnerability					
Capacities	-Wood (timber) - Boat shelter rainwater tank	- rainwater tank - fish cleaning and salting place	-rainwater tank - fish cleaning and salting place	-Rainwater tank -Fish cleaning and salty place	- Boat shelters - Fish processing equipment - Protected young coconuts palms

Conclusions of transect walk

Based on the transect walk analysis, the highest vulnerability seems to concentrate on the North-East side of the island; though we should emphasize that the island faces similar problems. The main livelihood activities, such as boat building, which offers to several people, the opportunity to access to

work, also concentrate on the same side of the island and have direct link with the in increase of vulnerability conditions, specially related with garbage management.

The other element that becomes obvious from the transect walk is that community members burn the garbage, but do not know how to manage it.

Seasonal Calendar

This seasonal calendar shows the changes in different activities and events during the cycle of the 12 months. Usually May, June and July brings rain from the south west monsoon. November, December and January also bring rain from the North – east Monsoon but not so intensive like the south west monsoon.

Issues of analysis	J	F	M	A	M	J	J	A	S	O	N	D
Rain season	×				✕	✕	✕				×	×
Dry season	✳	✳	✳	✳	✳			✳	✳	✳	✳	✳
Fishing	◈	◈	◈	◈	◈	◈	◈	◈	◈	◈	◈	◈
Erosion				∴	∴	∴	∴	∴	∴	∴	∴	∴
Tidal Waves						✯	✯					
Dengue					☹	☹	☹					
Viral Fever					😐	😐	😐	😐		😐		
Tourism			❤	❤	❤	❤	❤				❤	❤
Fisherman day	≈											≈
Heavy wind	Xx					Xx	Xx					
Schooling	▢	▢	▢		▢	▢	▢		▢	▢	▢	
Football					⑤							
Netball			⊙									
Drinking (rain) water access – (high) -						✿	✿	✿	✿	✿	✿	✿
Clean well water access						✿	✿	✿	✿	✿	✿	
Income – high	☾	☾	☾	☾	☾	☾	☾	☾	☾	☾	☾	☾
Income – low					☒	☒	☒					

The different size of the symbols shows the fluctuation of the event during the year.

Positive impact of the rain season

- Collection of rain-water, which gives the necessary drinking water for almost for the year.
- Improved groundwater quality
- It helps agriculture
- Reduce the temperature

Negative impact of rain

- make travel difficulty, due to the roof sea
- decrease the fishing activity
- soil erosion
- tidal wave
- strong winds
- reduce the tourism and therefore income
- increase mosquitoes
- it spread a lot of diseases (viral fever and dengue)
- reduce income (less fishing and tourism)
- more money is necessary for medical expenses

Positive impact of the dry season

- fishing activity and tourist increased and therefore income increased
- reduced soil erosion
- reduce mosquitoes and therefore diseases related to mosquitoes
- Recreational activities for youth and community

Negative impact of dry season

- ground water becomes salty
- rain drinking water scarcity
- temperature increased
- no agriculture activity , because of water scarcity and salinity

According to the information collected, 9 month of the year are considered good for fishing activities and less effective during the rainy season.

There is an evident connection between the rainy season and the increasing number of illness related with viral fever and dengue, though the current community health centre capacities does not allow them to test for dengue fever.

Seven month during the year, are considered as the months were tourism makes a great level of livelihood for the community, March and April and November and December are consider as the best months for tourism. The months with less access to income coincide with the months of rain and fever diseases.

Organizational capacities – Stakeholder networking

	IDC – Island development Committee	Women Development Committee	Maduvvarey Ekuveringe Club	Parents and teachers Association	Scout association	IDPs - Internal Displaced People Committee	Ayyoog Association
Who has founded the organisation	The Maldivian Government –	The Maldivian Govt in 1979 (Ministry of women affairs and social security)	4 community people in 1987	Founded in 1999 by the school for involving the parents in the school's discipline	Mr. Gaasim initiated the scout association in 1986	From the MIDP in 2005	By the youth of Madduvvary eastern ward
What is the aims of the organisation	To develop and organise the community work	- To promote women participation in the country's development - To promote women education and capacities /capabilities	To promote and develop Sport and Youth in the island	Involve the parents in the school management, organization and education (change of behaviour)	To help the development of students and the community	- To identify the needs of the IDPs and report them to island office atoll office and MIDP. - Co-managing the IDPs camps with the island office	To promote and develop games and activities
How many members has the organisation	12 members (1F, 11M) - WDC president - 3 members nominated by the atoll chief	23 members 22 female 1 male	315 members - 75 female - 250 male 18 is the minimum age to become a member	All parents and teachers	- Selected students up grade 6 and 7. - at present 38 male students	- 10 members , out of them 5 are IDPs - 2 facilitators, out of them 1 is IDPs	67 women and 152 men all above the age of 18
Internal structural organisation	President = Island Chief Vice pres = vice island chief Secretary = elected member (Mr. Ahmed) - 3 Meeting per month. - Members get an allowance of 20 MRF each	1 president 1 vice president 1 secretary elected for a 2 years term. - Respectively are receiving 200, 175 and 150 Mrf per month from Govt. Application for	Membership assembly and running committee composed by and 1 president , 1 vice president , 2 secretaries (1 male 1 female) , 2 sport secretaries (1 M, F) 1 budget secretary, 10 members) The GA meet ones	Executive Committee - President:headmaster -Vice president (Jamila) - 10 members - Meeting = 1 month	Council : 3 leaders, 4 patrol leaders and 4 assistant patrol Meeting; every Friday 2 pm	Not clear	President: Niyaaz, Vice President: Moosa Hausain, 2 Sport Secretaries, 1 treasure, plus 10 members Meeting every 2 months

	attended meeting - Community meeting are called twice a year and/ or every time important community issues to be discussed - No budget for administration - Up 2007 new rules ; all the members will be elected by the community	membership to the president. Meeting 4 times per month, Allowance:15 Mrf each meeting	a year , the RC every month - Has written rules and regulations - not recognized by the Govt.				
Main activities achieved	- Sea wall was initiated by the IDC, later taken over and financed by the govt. - Harbour - cable TV - Boundary wall for the mosque	- Organise the cleaning of the island twice a months - preparing meals and decoration for public functions - organised stitching courses - Contribute to the school with 5 computers and 1 sound system for a total of 65.000 MRF.	- Build existing health centre (gov + UNFPA 200.000 Mrf , Club free work) - cleaning the island for two months, (handed over to WDC) - built the women mosque - Jetty Red House - 10 toilets in the schools - Build cemetery with IDC) - organise and run pre-school - Give service to fishermen for repairing boats -Organise football and volleyball	- Computer laboratory	**Ongoing projects** - cleaning of beach and reef (waste management) - plant a neem tree in every house (total 500 trees) - leaflet on environment protection	Not clear	- construction of a row of classes in the school - installing a navigation aid light beacon 9visible 132 miles) on the island Kukulhudhoo - repair the water tanks in the women's mosque - making a garbage collecting compound

			competitions - Assist tsunami affected people coming to the island (5000 MFR)				
Futures plans	- Sanitation and sewage project in preparation with the community - join the two power houses in one - ***water plan (RO)*** financed by the IFRC ***was not well specified***	- build the WDC office - awareness on family planning , dengue and health - organise food and decoration - organise advance courses in stitching	- finish the recreational centre with preschool - sports events - improve preschool		- present ongoing projects	Not clear	To become a Raa atoll volleyball champions Raise the island office to two stories
Fund raise mechanisms	- Most of the activities /budget are financed by the government - Wealthy Maduvvaree people living in Male	- 1500 per month from the government - preparing food and decoration or other work	- Membership fees 50 MRF for male , 12 MRF for female. - community contribution for projects - donation from Maduvvaree wealthy people in Male	- funds from government	- government (very helpful) - Island office - Community	No fund raising	Pulling up dhonis on the land Different kind of work Help from the communities
Difficulties and challenges encountered in the past and present	- No office space, island office is used. - no budget for the administration	- No office space - **less job opportunity in the island for women, in particular for girls after finishing the grade 10** **- Needs: training for women in health, nutrition, managing household and**	- No space for constructing the club building /pre-school - raising money - Govt. promised to allot the plot where the IDPs camps have been set.	- no difficulties so far . - there is a good cooperation with the parents ***But*** -**parents and teacher are concerned about drug (brown sugar) problem on the island** -**more the 20 young people are addicted** -**some of the them**	- activities depends on the teachers motivation and availability - transport has high cost for scout clubs interchange - to get the scout uniform (material not available)	Only 3 meetings hold so far, so the committee is not functioning at all. ***IDPS problems :*** - **1 block has not electricity** - **Salty water for bathing in unit 4** - **11 IDPs families living outside the IDPs camp,**	Lack of money

		budget, etc.		**left the school** **-the problems has not yet been discussed in the PTA meeting** **-need of awareness campaign in the school**		**complains in having to pay electricity, while other families are not paying.** ***Solution : hold meetings for discuss problems and report to the MDI***	
Interaction with other community organization in the island	Mostly with the Women Development Committee	Mostly with IDC and island office	Good when required – Mostly with IDC	WDC= donation of 5 computers and 1 sound system , cleaning of school compound IDC = submitted proposal for developing the computer's laboratory - Ekuvveringe = for sport activities	The Club activities have started, at moment no interaction with other committees	No interaction with other committees	With Ekuveringe club collaborating in work for building the cemetery wall
Interaction with other community organization in the atolls/country	No formal interaction	With the islands of Fainu and Innamaadhoo for getting material for the roof matt weaving.	Before tsunami with Kandholhudhoo ,	No contact with other PTA	With Meedhoo for Camping	No interaction with other IDPs committee	

Livelihood chart

Income generation activity	Who does it	What % of the people employed	What % of income does it provide	What social security exist	What are the threats	What alternative livelihood exist	What alternative could be considered	How do people cope	What preparedness would reduce loss of livelihood	How could be satisfied
Fishing	Man fisherman	30%	Person averag e Mrf 3000	Nothing	Oil is expensive Not enough boats Young people are not interested	Reef fishing	Look for any work available	Help from family and friends	Introduce fishing to young people	Awareness program for young people (island office)
Weaving	Women	10%	1500	Nothing	Not enough thatch	Tailoring Killi making Cake decorating	Learn another skill	Help from family and friends	Teach weaving to young people	Teach to young people
Fish processing	Man / women	5%	2000	Nothing	Not enough land	Nothing	Salty the fish	Help from family and friends	Introduce fish processing to young people.	Create fish processing area (island office)
Boat building	Man	3%	2000	Nothing	No demand for the work	Daily labor (fishing & tourism)	Daily labor (fishing & tourism)	Help from family and friends	Fiberglass	Organize workshop I.D.C.
Constructio n	Man	2%	1500	Nothing	Less skilled people	Daily labor (tourism	Daily labor tourism and fishing and protection walls	Help from family and friends	Introduce construction to young people	Learning programme (people who know)
Agriculture	Man/ women	1%	500	Nothing	Not enough land Not enough equipment	Start own business	Learn another skills	Help from family and friends	Get sufficient equipment /land	Create agricultural area (island office) Open agricultural shops (shop keeper) Awareness programme to consume more vegetable
Governmen	Man/	6%	2000	Pension	Less jobs	Start own	Start own	Help from	Improve	Provide more

t work (office, teaching , health center)	women				opportunity	business	business	family and friends	education on island. More government courses. Motivate people to work for government. Give more jobs to Maldivians	government course
Local business (shops, restaurant)	Man/ women	2%	1500	Nothing	Shopkeepers do not have own dhoani for supply	Daily labour	Daily labour	Help from family and friends	Make bigger business. (family business to cooperation)	Create shopping complex, shopping areas.
Tourism	Man/ women	5%	2000	Nothing	Lack of resorts Many foreign working in the resorts for less money	Fishing	Fishing Daily labour	Help from family and friends	Establish laws to protect Maldivian workers and Maldivian products	Awareness programme to resort people (tourism industry) and for people searching for jobs.
Farming in uninhabited islands	Man/ women	2%	800	Nothing	Oil is expensive Fertilize are not available Difficulty to access land	Men; fishing Women: housework	Fishing Daily labour	Help from family and friends	Get sufficient equipment	Government should allow doing agriculture in uninhabited island. Provide access to live on uninhabited island. Create more demand for agriculture products in Male. Transportation and access to market (Male).

Livelihood Analysis

For the question “How do they cope?” originally, all the answers were “Help from family and friends”. However, all the members agreed that each individual will do any other jobs possible before they seek support from family and friends. Only for fishermen, they agreed that they seek support from others. This indicates that fishing is the main source of income, and when fishing is not good, the community extends help. But for other activities, participants agreed that people engage in any activity possible on the Island to support themselves to cope.

Women and men are engaged to various income generation activities like local business, agriculture, tourism, fish processing, etc. which reduce considerably risks of depending only on fishing. The fish is sold normally to MIFCO and local market, while the processed fished is sold to Male’. One of the treat identified for the fish processing is that there is no space for the fish waste and processing and this contribute to the island pollution and water contamination

One important income generating activity for women is the thatch weaving, therefore monthly income is 450MRf when sold to resorts in Raa and other Atolls. Young people are not interested in learning thatch skills because the income is verylow , the work is time consuming, and the oil used for transportation is expensive. Another concern is that there is no land available to plant more coconut trees, and although currently people are bringing thatch from other Islands spending resources in transport.

Almost every family has a small garden for the daily used, while farming on uninhabited islands is undertaken only by 1% of the community. The products are sold to the local people as well as send for the Male market.

Due to improvement in education, young people are attracted to tourism and government works. The perception is that educated people do not earn an income by fishing or agriculture, but by doing office work, which is less hard work. However, government work, which is the only activity that provides social security (pension), has limited opportunities.

Because of variation of activities, coping strategy is first within the family; father supports the mother, the children support parents if needed. Support is extended from friends as well, but if it is not enough, people seek support from local business owners.

It appears that resorts are not giving huge economical impact through employment. This is due to low a salary which does not meet the Maldivian standards. This leads the resorts to employ foreigners, which currently has no restriction. There are no labour laws in the Maldives to protect employees; only the government as an employer has regulations for their employees.

The community suggested that awareness raising programme and skill training courses shall be developed and implemented at various levels promoting livelihoods practices. The government shall ensure access to employment, and the community shall strengthen the social cohesion.

Due to over population, land is scarce. By designating areas for different activities (areas for fish processing, shopping complex) land would be used in an efficient and effective manner and the pollution and contamination could be reduced.

Historical Chart main conclusions:

From past to present
The historical chart for Maduvvary is covering a period from approximately 40 years, from 1940 to 2006.

- ***School:*** The size of school increased on the island with the opening of new classes. The first school was only from grade 1 to 3, then grade 1 to 5 and now, classes are up to grade 10. Two reasons explainthis: the increase of the population and the improvement of the national educational system making school compulsory for all children. Also moiré teachers were needed to accommodate the new classes.

- ***Health facilities:*** From 1950 to 1980, there were no health facilities on Maduvvary and people had to travel to atoll hospitals on another island (Ungofaru). The first health workers arrived in 1980 and the first health centre opened during the 80's. Since then, the centre has gained capacity. The number of diseases has never decreased. Today, more diseases are observed than in the 50's. Also there are expected to be new diseases in the future. Mumps first appeared in the Maldives in the 80's.

- ***Poultry***:(chickens, ducks and pigeons) are bred on the island but the number of birds is decreasing for 2 reasons:
  - people can buy frozen chicken from Male
  - local authorities have imposed that poultry be bred in closed areas for hygienic reason

- ***Livelihood:*** New jobs appeared over the years and so far employment hasn't been an issue for the community. Main economic activities in the island are: fishing, farming, shops (groceries), government jobs (teachers, nurses…), boat making and tourism, in the nearby resorts.
  One impact of the increasing in the fishing activity is the increase of fishing boats which were made with wood until the last decade. The need for wood has contributed to deforestation.

- ***Infrastructure (water, electricity):*** Until 1990, the only water resource was the groundwater. People have private wells but also used the public wells (mosque). In the 90's, rainwater tanks were introduced as the water demand increased with the population. Also, the pollution of the groundwater became a problem due to poor the sanitation system. The ground water started to smell in some part of the island. The water resource is so far sufficient. The community has never experienced any drinking water scarcity problems.

- The island ***electric network*** was installed in the 80's. A second power house was installed in 2000 as the demand from the community increased. Today, the power houses are producing at the maximum of their capacity and cannot support any increasing in consumption.

- ***Waste***: Garbage has never been an issue in the island until the appearance of plastic and metallic containers and other non-biodegradable material. Since the 70's, the volume of garbage has increased significantly but garbage disposal area on the island is limited.

- ***Support from the Government:*** The Government started supporting Maduvvary in the 70's and this support has increased since then for the school, the health centre, the harbour.

- Soil erosion has increased with the extraction of coral blocks and also sand used for construction: these have been forbidden by the Government of Maldives. The construction of the harbour increased the erosion on the opposite side of the island.

Predictions for the future (assumptions based on historical analysis)

- The population will keep increasing and will reach the maximum capacity of Maduvvary in 2020. People will then have to migrate to another island. Another scenario could be self or forced limitation of the population. Number of people could stabilise.
- The health centre will become bigger with more medical staff and more beds. The quality of care shall improve with new equipment like x-ray machines and a scanner. However, these improvements can happen only if more people will be trained as doctors and medical personnel. The only doctor working in the island is from India, who doesn't not speak the language
- Livestock will disappear and there would be no more poultry on the island.
- Waste management will become a bigger problem and if no solutions are found, the garbage will probably be dumped into the ocean. The pollution of the beaches will increase as there will be more rubbish on the sea-shore.
- The transportation inter-islands will gain in quality with higher frequencies and more destinations.
- Electricity demands will increase with the population and the production capacity will be increased in response.
- Job opportunities will increase again until a certain level and then unemployment will appear. There will not be enough jobs to keep all the active population busy.
- There will be no more space available due to the increase of land occupation by houses but also because of the erosion and the rising sea level.

Historical profile:

The following chart does not represent the full historical picture of the main events and significant momentums that this community has deal with, nevertheless offers a general idea of how community values a great development along the years. The chart shows that the community has not experienced many disasters and loss of live and property in the last 72 years. The cyclone in 1958 and the tsunami in 2004 did not affect the community very much.

Year	Description
1934	First school “Alhoage Madharusa” in progress
1950	Community supply and transport ship running
1952	Community island office and store house in one building
1953	Depression after II World War (days of hunger, coped by eating bush leaves)
1954	Visit of the 1st Maldivian President Mohamed Amin Didi to the island
1954	1st football ground
1958	Cyclone, no loss of live or property.
1960	First school annual graduation day celebrated
1962	Last “Bodu Mauleedh” recital
1963	Community supply and transport ship sold
1965	Community store changed to community shop, named “Modern Price “
1965	Separated building for the island office constructed
1968	Raa Ufulandhoo community settled by the government to Raa Alifushi, migrated voluntarily to Maduvvaree
1969	1st Club “United Youth Movement” (UYM) formed
1973 -73	UYM volley team participated in National Volley Ball tournament in Male’
1973	The house of the school teacher, Markthabul Hilal, was set on fire
1974	First mechanized fishing dhoni (boat), named “KOMAS
1975	United Youth Movement Club dissolved because of the clubs’s member was found guilty for the fire accident of the school teacher’s house
1977	Referendum for the election of the President of the Republic Maumoon Abdul Gayyoom
1979	Big Banjan cut down to build the new mosque
1985	new mosque building inaugurated on a Friday
1987	Maduvvaree Ekuveringe Club formed
1990	English language taught as a subject at school
1993	East ward power house inaugurated for electricity supply to west ward for 6 hours per day.
1995	West ward power house inaugurated for electricity supply to west ward for 6 hours per day.
1995	Champions of the 1st inter-atoll volleyball tournament (Maduvvaree Ekuverige Club)
1997	Mathematics taught in English at school
1997	Sport Club “ Ayyooq Jamiyya” formed
1998	Harbour constructed
2000	Health Post constructed with the support of UNFP and inaugurated
2000	School curriculum in English started
2001	O’ Level syllabus started at school
2002	New building of island court inaugurated
2003	53 students participated in the 1st O level examination
2004	Health Post upgraded to health center
2004	Tsunami hit the island, no loss of live and houses, but many people lost

	working and household equipments. Sea wall was 50% damaged
2005	Reconstruction of the harbour sea wall
2005	1st fibre glass fishing dhoni (boat) built
2005	Rainwater harvesting kits supplied by the IFRC to every household.
2006	Science stream taught at Maduvvaree school
2006	Reverse Osmosis (desalination plant) house construction started
2006	Women's prayer house reconstructed and opened by govt. and community
2006	Construction of a new perimeter wall of cemetery started
June 2006	VCA - Vulnerability and Capacity Assessment training workshop conducted by the IFRC

Focus group with male young adults and elderly

As a result of participatory discussions, six focus groups took place at the same time with different members of the community. The main objective of the working groups was to validate the following information:

Focus group **one**: Mapping and direct observation
Focus group **two**: Seasonal Calendar and Historical Chart
Focus group **three**: Livelihood chart
Focus group **four**: Community organizational capacities
Focus group **five**: This group (community leaders)sought to get consensus in this group on the main vulnerabilities, put them in priorities for action and look for potential solutions. As you can see in the graphic below, during the focus group points 16 – 19 were added during this activity. It is also important that other groups had the opportunity to give feedback to this chart and he priority areas that the community should focus on.

1 Erosion	**2** Dengue	**3** Viral fever	**4** New disaster (tsunami)	**5** Garbage management	**6** Water contamination
7 High population	**8** Pollution	**9** All green are loss	**10** Sewer system needs improvement	**11** Foreign labour competition at tourist resort	**12** Electricity at maximum capacity
13 Increase costs of diesel, gas, increases the cost of transport and electricity	**14** Land use planning monitoring and projection for the future	**15** Upgrade basic health equipment	**16** Develop a disaster response plan	**17** Foreign labour competition in every sector	**18** Food supply
19 Construction material availability					

Focus group **six**: Youth perception of hazards and vulnerabilities

Focus group with youth

Things that they like about the lifeon the island	Things that they dislike about the life on the island
Beach side and reef area (+ +). White sandy beaches + + + All are very friendly + + + + helpful and generous Fishing (+ + + +) and fishing industries and farming (+ +) No war + + + between the islands Religion + + + Natural air + Natural drinking water Clean environment Friends and relatives Reef area allows us to have easy access to fish (+) Island look green Cooperation + Not many disasters Is the island that I was born Monsoon Education	Soil erosion + + + + + + + Job opportunities have decreased + Available facilities + No land for living + + Environmental problems Corals are dying + Increase population (over population) in the island + + How waste is managed Raising of the sea level + Health problems Garbage at the beach People who do not obey some rules and regulations. The island is so small +
What would like to be doing 20 years from now	**What are the hobbies that you like the most**
- Teaching - Government business work. - Captain of a boat - I want to do business - Nursing (helping the patient) - International business - Become a teacher	- Playing netball - Reading stories - To play ball - Watching television, hearing music - Reading books, playing netball, To give advice to people about our environment. -
What have you learnt after the Tsunami?	
It might happen again, and could be strong or stronger than before I thought it could never happen. Now I know that it could happen again When I heard sounds (wind) I feel afraid I am very afraid that it might happen again I understood that hazards could be very dangerous and that we need to be careful Tsunamis might happen again and many people might die and things (property) will be lost.	

Annex 2:

Meedhoo Island, information gathered – 25-29 July 2006

Introduction

The following report is a summary of the VCA workshop conducted at Meedhoo Island over June 25th-June 29th 2006. The information is presented as it was collected, summarised and analysed by the Meedhoo community VCA participants and has not been augmented. Sections (2.1-2.9) represent the results from the first phase of the VCA process. Section 2.10 provides some details on the success of the VCA process, participants' feedback and the way forward in order to continue the VCA process.

Direct Observation

The direct observation tool was found to effectively identify:

- demographic information and the resources on Meedhoo Island
- the level of community involvement on Meedhoo Island
- a good level of economic and social development on Meedhoo Island

The results collected by the Direct Observation Team are summarised in the Table 1.

Table 1. Direct Observation Results, Meedhoo Island, June 2006

DEMOGRAPHIC INFORMATION	**Distribution of the population (age, work, gender)**	The population is 1,725 inhabitants, with 788 and 937 men.
	Daily routine (school aged children in school, adult present with children at home, working in the fields)	Children going to school. Most people are at work from morning until afternoon/evening.
	Family structure (nuclear or extended family present, child headed households, community interaction)	The average is about 10 members per family, mostly extended families. Community interacts in parks and public spaces.
INFRASTRUCTURE	**Types of Housing and other infrastructure, use of latrines**	Most of the houses are made of cement (?) and roofs are made of corrugated zinc. There are public toilets
	Construction materials. Design and proximity of buildings	Bricks sand and cement.
	Types of roads	Sand straight and wide roads (with few narrow streets exceptions)
	Greenspaces and playgrounds	Parks and recreation centers.
	Sports facilities	Football, volleyball and netball courts.
HEALTH, SANITATION AND OTHER ESSENTIAL SERVICES	**Sanitation (sewers, running water – availability, functionality and type)**	Most of the sewers are going to the sea. Safe drinking water available.
	Availability of electricity, water and telephone	Electricity supply to the whole island but not water and/or phone line.
	What basic services exist	Internet, photocopies, mechanics, tailors.

	Distance people in the community have to travel to schools and health centre	Usually 5 minutes walk to school and/or health center.
	Animals in the street	Cats.
	Institutions present	Health centre, Island office, Island Court, School.
DAILY ACTIVITIES	**What people eat / Where they shop**	Rice, sugar, flour, fish, coconut.
	Religion – churches etc	Islam, 6 mosques.
	Recreation activities	Sports, watching TV.
	Types of transportation used	Dhoni, speedboat and ferry.
VISIBLE VULNERABILITY AND CAPACITIES		Risks and hazards: Natural disasters, drowning, coconuts falling, flooding, heavy rains, strong winds on western side of island. Capacities: Lots of coconut trees, lots of home gardens

Mapping

The mapping exercise involved collection of different types of information (spatial, capacity and resource, and risk and vulnerability) by three separate teams.

Spatial Map

The existing Meedhoo island map, obtained from the island office, was used as a guide for the spatial mapping exercise and was found to be reasonably accurate with regards to the identification of housing and property boundaries. Certain areas and services of interest were verified and some additional features were not marked on the original island office map (for example the temporary IDP housing, garbage disposal area and beach/shoreline).

The spatial map indicates that Meedhoo Island:

- Is an island of medium size relative to others in the Maldives (confirmed as 30.6 hectares)
- Has a good level of development
- Has significant vegetation remaining making it a “green island”.

The spatial map (see Figure 1) was drafted as a base map in which the information collected by the capacity and resources and risk and vulnerability teams could be overlaid.

Capacity / Resource Map

The capacity and resource map of Meedhoo (see Figure 2) indicates that there are plenty of resources on Meedhoo Island (such as coconut trees, boat building sites, schools, health center, desalination water plant). The linkage between the plentiful resources and good opportunities (for example in job creation, fishing, and tourism) was apparent. It was decided that on the basis of capacity and resources, Meedhoo Island was an example of sustainable development at this point of time.

Vulnerability and Risk Map

The vulnerability and risk map (see Figure 3) indicates that:

- Only certain selected areas nearby the coast line have high risk
- The north side of Meedhoo island is exposed to a combination of several hazards
- There is limited risk and vulnerability identified in the central parts of Meedhoo Island

The majority of the risks and vulnerabilities identified are environmentally related (such as risk from surface flooding, exposure to erosion, groundwater contamination). Human and infrastructure risks were associated with the services of garbage disposal, operation of the powerhouse and storage of fuel and gas.

Transect walk

The transect walk tool was used to collect more detailed information on a selected area of Meedhoo Island. Analysis from the three types of maps produced (Figure 1 to 3) identified the north coastal fringe of Meedhoo Island as a particularly interesting zone as it was found to have a combination of particularly high risk, several vulnerabilities and several varied capacities and resources.

The area determined for the transect walk was separated into four zones. Four separate investigation teams identified all features within that zone (i.e. houses, schools etc) and collated information related to livelihoods, level of organisation, main risks and hazards, conditions that increase the vulnerability, capacities, beliefs and values and safety and security. The results were merged into the summary Table 2.

The primary findings from the transect walk investigation were:

- Livelihood is based on shops, boat building, services and coconut trees
- The area is mostly of a high level of organisation
- The main hazards are storm related (high winds, rough seas, heavy rain, surface flooding)
- Unsafe drinking water and contaminated groundwater were identified as potential risks and have health related safety issues
- There are a lot of capacities identified, including water, services, recreation, education and training
- The environmental conditions (such as proximity to the sea) increases the vulnerability of the transect area
- The design and construction of buildings increases vulnerability and has some safety issues
- The mosque is very important to the community

Seasonal Calendar

The seasonal calendar (Table 3) was developed to show the impact of different seasons on the livelihood and health of the Meedhoo people and the environment. It shows what the best times are for different activities; it also indicates when difficulties may be experienced conducting certain activities.

Some of the key markers in a typical Meedhoo year include:

- The dry season typically occurs between February-April. This can result in reduction of the collection of drinking water supply, and increase in the salinity of groundwater in certain island locations
- The risk from dengue fever is most common during March – July, which overlaps with the onset of the rainy season in Meedhoo
- Fishing, construction and rope and thatch are year round livelihood opportunities, whilst tourism is only seasonal (Dec to March)

- Beach erosion appears to occur intermittently during the year, however, other environmental factors such as strong winds and tidal waves are typically confined to the rainy season

Figure 1. Spatial Map for Meedhoo Island, Raa Atoll (26 June 2006)

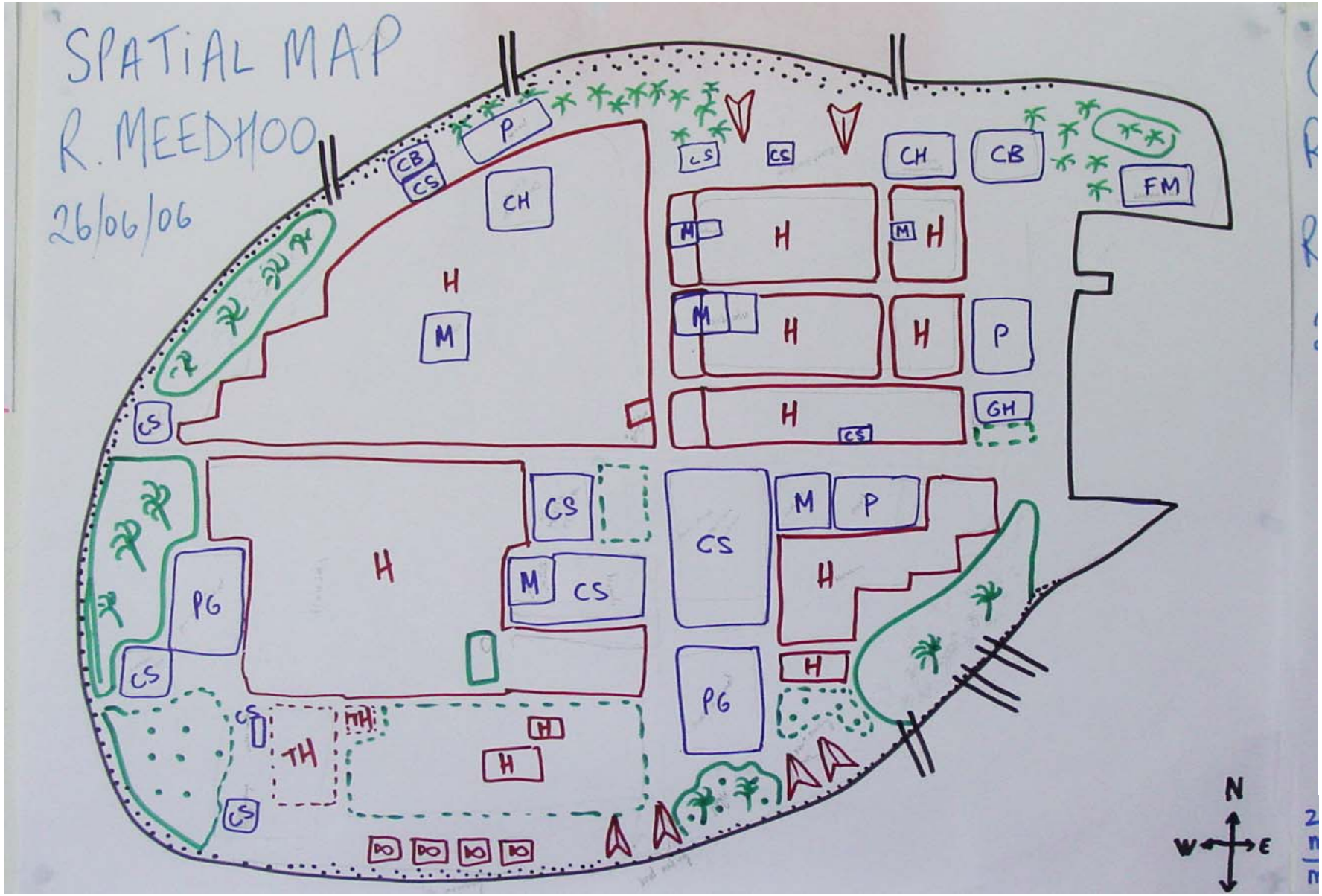


Figure **2. Capacity and Resource Map for Meedhoo Island, Raa Atoll (26 June 2006)**

Figure 3. Risk and Vulnerability Map for Meedhoo Island, Raa Atoll (26 June 2006)

Table 2. Results from the Meedhoo Island Transect Walk, June 2006

ISSUES	STRUCTURES													
	Houses	Mosque	Shops	Sewer Pipe	Park	Gas Storage Center	Boat Building	Storage area Small boats	Ground Water	Beach	Communication Tower	Pre-school	Community Building	Coconut Tree
LIVELI-HOODS	-	-	Jobs	-	-	Jobs Business $	Jobs Business $ + fish	-	-	-	Jobs, Services, Business, $	Jobs Services	Business, $, Services (Rooms + materials)	$, Food, Business, Wood
ORGAN-ISATION	High Level + variable	High Level	High Level	High Level	High Level	High Level	Mid Level	Mid Level	-	-	High Level	High Level	High Level	Some Organisation
MAIN RISK/ HAZARDS	Storms, Wind, Unsafe drinking water	-	Storm, Wind	Strong seas/ waves	Exposed, Wind & Storm	Fire, Explosion ,Electricity shock, Flooding (Tidal wave)	Fire, Storm, Wind, Flooding (Tidal wave)	Rough seas, No safety equipment, lifejacket	Sea water contamination	Rough sea, Erosion, Rubbish	Rains (heavy), High wind, Lightening	Winds, Trees, Location next to sea	Wind, Rough Sea	Wind, Coconut falling
CONDITIONS THAT INCREASE VULNERABILITY	Structures (roof and corals)	-	Reliant on boat re-supply	PVC Construction (unstable), Not well secured	Trees, Salty water	Smoking	Tools	Communication	Tidal waves, Overuse	Nature	-	Adjacent to sea, Exposed, Structure	Roof, Coral Structure	Strong wind
CAPACITIES	Shelter, People, Water harvesting	Drinking water, People	Basic needs supplied	Removal of waste from houses	People, Rest & Relaxation	Provides community service	Carpentry, Fishing Transport	Local Transport, Local Fishing	-	Recreation, Swimming	Phone service	Education, Training, Safe drinking water, Toilets	Training, Competitions, Sports	Food, Housing, Building (Boat)
BELIEFS/ VALUES	Important to family, Religion	Very important!	-	-	For all people to enjoy	-	-	-	-	-	Important for communication	Value of education	Community involvement	-
SAFETY SECURITY	Roofs, struct. Issues, electricity issues	Safe place, protected place	Glass front, Important for daily life	General health, Environment	-	Dangerous storage (Potential)	Use of tools + humans	People	Salty, Not safe (health, disease)	Swimming	Service problems, Maintenance safe issues	No boundary wall, Structural strength?	Boundary wall in place	Coconut falling on head

Table 3. Seasonal Calendar for Meedhoo Island, June 2006

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RAINY SEASON					X	X	X	X				X
STRONG WINDS					X	X	X	X				X
DRY SEASON		X	X	X								
DENGUE			X	X	X	X	X					
FISHING	X	X	X	X	X	X	X	X	X	X	X	X
AGRICULTURE					X	X	X	X				
TIDAL WAVES						X	X					X
HOLIDAY TRIPS	X						X					X
BEACH EROSION	X			X		X						X
CONSTRUCTION	X	X	X	X	X	X	X	X	X	X	X	X
MAKING ROPES AND THATCH	X	X	X	X	X	X	X	X	X	X	X	X
TOURISM	X	X	X									X

Note: ***X*** *= may encounter some difficulties*

Organisational Capacities

Ten questions were developed to ask selected community based organisations (CBO's) to determine the organisational capacities existing on Meedhoo Island. The results from the discussions with the CBO's (summarized in Tables 4a and 4b), documents past developments and successes undertaken by various groups and indicates the activities planned for future development of the island. It is clear that the CBO's are open to almost any member of the island and most carry out island level courses and are active at the community level.

Table 4a. Results from the Consultations - Meedhoo Community Based Organisations, June 2006

Questions Asked	Community Based Organisation		
	IDC – Island development Committee	**Women Development Committee**	**School Clubs**
How old is your organisation?	Formed approx 20 yrs ago	Formed in 1981. 25 years	Formed in 1997
What are the main activities of the organisation?	Aim is to take the lead role in the development of the community, to give advice and assistance to island office	To bring awareness among women and work for their betterment, or development	Every club is to form a calendar and organise different competitions
How does the organisation raise funds?	Money from Dhigali (on rent), rent out guest house, electricity, distribute land, collect fees from boats on drydocks,	Weaving roof mats, running the pre-school	No regular activity for raising funds but to finance certain programmes we hold working day programmes in the island
What are the future plans for your organisation?	Community pharmacy, community fuel depot, RO plant management and get money from selling RO water, build more guest houses	To build a community center for women and to run different courses aimed to increase earnings of women	Publish a magazine, plant trees
What sort of difficulties do you face/have?	Not enough funds	Not getting enough support from all women, lack of awareness	Not being able to have activities as planned. Not having able coaches or trainers
How much success does your organisation		Effectively run the pre-school	

have?			
Who are the organisers?	President, Island Chief, vice president, secretary	President, vice president, secretary and treasurer	One person overall in charge and one leader in every club
Do you have relations/co-ordination with other organisations?	No / Red Cross (IFRC)	UNDP	Other Jamiyyas and clubs
Are there requirements for joining the organisation?	To have studied up to literacy standard, 18yrs+	To be a Maldivian citizen and to be 18 years+	No criteria

Table 4b. Results from the Consultations with Meedhoo Community Based Organisations, June 2006 (contd)

Questions Asked	Scout	Meedhoo Ekuveri Club	IDP Committee	Jamiyyathul Salah
How old is your organisation?	Initially formed 20 years ago, however, after a gap of no activity, restarted in 2003	Formed in 1978 (27 years old)	2005	Formed 19th Sept 1979
What are the main activities of the organisation?	To take part in all school activities	To work in the development of the island, in raising the standard of education and all community works	To give assistance and aid to IDP's, to take note of their needs and problems and to bring it to the attention of the government, pass information on to them that is honest/truthful,	To work in the development of the island in sports, community work
How does the organisation raise funds?	To go on camps and get different badges	By planting and growing coconut trees and renting out buildings (rooms, houses, plots of land etc.)	No specific programme is being conducted to raise funds	Before we get funds by doing netting for reef fish, however, now from coconut grove. Have tried unsuccessfully to obtain funds from other organisations
What are the future plans for your organisation?	No appropriate scout teacher or trainer	To have an island development plan, to extend the office building, to run different courses to raise the educational standard, to run sports programmes	Assist the government and organisations (like Red Cross) in assisting and giving information. Awareness programmes - improve inter community communication	To finish new building of the Jamuiyya. To continue holding the annual sports competition and religious programmes
What sort of difficulties do you face/have?	Working for the second badge, taking the oath	Not enough funds	IDP members not turning up for meetings, with reasons given as lack of time, working earning, members don't get a salary	Not enough funnds, no place or building hinders some activities
How much success does your organisation have?	Runner up at the scout jamboree	Electrical wiring course making of stage, 2 week computer course, one month Quran recital class	Brought IDP's closer, disseminating information, working as a bridge between the government and the community	1st in atoll competition and participated in zone competition, built 2 mosques, preparation for world environment day (like finishing the stage, work on the jetty, install rainwater tanks)
Who are the organisers?	One overall leader (Abdul Razzaq) and every group has a group leader	President (Ibrahim Hassan), 2 vice presidents	President, vice president and secretary	Two founding members, 1 president, 3 vice presidents
Do you have relations/co-ordination with other organisations?	No relations	Care Society		No
What are the requirements for joining the organisation?	Those students who have good conduct and good in studies	To oblige to the fundamental rules and regulations of the club and to be 18yrs+	Anyone who is sympathetic and has good intentions	To be 18 yrs+, finish school and good conduct

Livelihood

Information was collated on the variety of livelihood activities by questioning a selection of community members. Information is summarised in Table 5.

The primary livelihood currently on Meedhoo Island is fishing, and construction (boat building). Secondary livelihoods include some business workers, public servants (government workers), small scale agriculture and home making activities (food and sewing). There is a mix of individual and family based livelihood opportunities (e.g. business is predominantly family run, whilst fishing is undertaken by individuals).

The main threat to most livelihood opportunities is from the lack of appropriate materials. Increased training, involvement of more people (including youth) and diversification of skill sets are seen as the most appropriate ways to reduce the livelihood losses associated with potential risk and future hazards on Meedhoo (such as another tsunami).

Historical Chart, Historical Profile and Historical Visualisation

The historical chart (Table 6) and historical profile (Table 7) were compiled to document the changes and development of Meedhoo Island over the past 89 years. Neither is intended to be 100% representative of all events or developments that have occurred at Meedhoo, or have affected Meedhoo people, however, both tables aim to capture the events that are considered particularly important to the community.

It is clearly obvious that the standard of education, level of community services provided and overall living conditions have improved significantly over time. There has been an overall increase in job opportunities (and diversification of livelihood opportunities) over time, which has led to an increase in the income of the island at a household and community level. Many events in the more recent history of Meedhoo (i.e. the past 10 years) indicate that change is occurring reasonably fast.

Some of the key events highlighted include:

- Recent national celebrations held on the island and visits from the president
- Construction of the school and development of the school curriculum
- Construction of health services
- Installation of communication systems (landline and mobile phone towers)
- Upgrade of harbours (transport, travel and access opportunities
- Opening of nearby resort (livelihood opportunities)
- Tsunami of December 2004

The historical visualisation tool (see Table 8) was used to project the community needs and likely developments over the next 15 years. The factors considered included population, services, livelihood and environmental concerns. The general outcomes of the historical visualisation exercise mimic the fast pace of change that has been observed over the past 10 years

Some of the key projections include:

- Continued increase in population and demand for housing which would result in loss of “green space”
- Continued increase in the level of education which would reduce the necessity for young people to travel away from Meedhoo in the future to seek higher education
- Increase in the demand for electricity which would be serviced by green solutions
- Increase in the quality and service provided by the health profession at Meedhoo
- Reliance of a combination of rainwater and desalinated water to service the drinking water needs of an increasing population

Whether any of the above projections could be realistically worked into the development of Meedhoo Island was not fully explored. However, it was noted that due to potential resource constraints, financial constraints, availability of skilled personnel and environmental limitations it may be likely that some of these projections could not be met, or could only be partially achieved in the time frame indicated.

Table 6. Historical Chart of Meedhoo Island (2006 – 1914)

EVENT	2006……1914
President visit	X (2006)
Environment day	X (2006)
A Level	X (2005)
Tsunami	X (2004)
Health Center	X (2004)
Fishermen's day	X (2003)
Cambridge	X (2002)
Mobile Phone	X (2001)
Resort	X (2000)
O Level	X (1997)
Harbor	X (1997)
Telephone	X (1996)
Tamil Attacks	X (1988)
President Visit	X (1983)
School	X (1983)
Electricity	X (1983)
Cholera	X (1977)
Independence	X (1965)
2nd World War	X (1939)
1st World War	X (1914)

Table 7. Historical Profile of Meedhoo Island (1914 – 2003)

Year	HISTORICAL EVENTS
1914	Great food scarcity during 1st World War (communities living on leaves which caused several deaths).
1944	First boat built meant for transport from/to Male' and, as a consequence, there has been an increase in supplies as well as easy travel to Male for Meedhoo community..
1948	First urban island plan (layout of the island) in place. New roads opened as well as improvement of infrastructures and general organisation of the island.
1950	First community store/shop opened, meaning easy access to food and other supplies for the community as well as opportunities to increase other businesses.
1983	Maadressa was changed into Educational Center which was an upgrade in the educational standards.
1993	Old mosque is demolished to build Island Office, Island Court and Women Center.
1996	Land line phone introduced to the island and eventual mobile phone services (2001).
1997	New harbour built which has given the opportunity of more people to visit the island.
2000	New resort is opened bringing new jobs and opportunities for Meedhoo community.
2003	Fishermen's day celebrations were held, which opened more opportunities for the development of the island as well as more national celebrations to be held in Meedhoo.

Table 5. Summary of Livelihood Analysis – the way people earn money in Meedhoo Island, June 2006

Livelihood	Who does it?	What % of people employed?	What % of income does it provide?	How do people cope?	What social security exists?	What are the threats to the job as an income source?	What alternative livelihoods exist?	What alternatives could be considered?	What preparedness would reduce loss of livelihood?
(WDC) Baking cakes Sewing	Family	1% (baking) 5% (sewing)	25% 30%	-	-	Not enough materials	Business (selling)	Poultry	They can run training courses on baking and sewing
Agriculture	Individual	1%	20%	-	-	Lack of materials	Masonry	Working for contractors	Training courses as well as involving more people
Health worker	Public servant / Individual	5%	100%	-	-	-	Pharmacist	Teaching	-
Fishing	Individuals	75%	100%	-	-	Lack of materials	Masonry	Working for contractors	Getting more people involved.
Carpentry	Family	5%	100%	-	-	Lack of 3 phase electrical supply	Fishing	Masonry	They can run training courses
Business	Family	2%	100%	-	-	Difficult traveling to re-supply	Working on the resort	-	Improving security measures for the shop
Boat making	Family and individual workers	30%	100%	-	-	Non continuous supply of timber	Masonry	Cement works	Providing training to younger generations

Table 8. Historical Visualisation for Meedhoo Island, June 2006

TIME PERIOD	Population	Number of houses	Education	Electricity	Health	Water condition	Fishing	Beach erosion
1965 to 1975	800 to 900	80 to 100	School	Firewood and kerosene lamp	Black magic + Dhivehi medicine +aspirin	Well water + rainwater	13 engine/sailing dhoni	Erosion started
1975 to 1985	900 to 1,100	100 to 150	Hidaya School + Meedhoo primary school + Atoll education Center	Kerosene lamp + electricity (6 hours)	Health worker + Dhivehi medicine	Well water + rainwater	17 engine dhoni	Erosion continued (taking sand and soil)
1985 to 1995	1,100 to 1,400	150 to 180	Atoll Education Center (grade 1 to 10)	Electricity (24 hours)	Health worker	Well water + rainwater	21 engine dhoni	Erosion continued (taking sand and soil)
1995 to 2005	1,400 to 1,700	180 to 230	Grade 1 to 11	Electricity (24 hours)	Health worker + health post + health center	Well water + rainwater	30 large engine dhoni	Seasonal erosion
2005 to 2010	1,700 to 1,900	230 to 400	Grade 1 to 12	Electricity (24 hours)	Health center (24 hours)	Well water + rain water + desalinated water	20 large engine dhoni	Seasonal erosion
2010 to 2015	1,900 to 2,000	400 to 430	Grade 1 to diploma	Solar energy (24 hours)	Hospital (24 hours)	Desalinated water + rainwater	Weekly fishing / large dhoni	Building protecting wall (no soil erosion)
2015 to 2020	2,000 to 2,400	430 to 520	Grade 1 to degree	Solar energy (24 hours)	Hospital (24 hours) + laboratory	Desalinated water + rainwater	Large engine dhoni + fishing boats	Protecting wall (no soil erosion)

Focus groups

Four key groups within the community were selected to be the focus groups for the Meedhoo Island VCA. They were selected on the basis of the outcomes and analysis of all previous activities, in particular the organisational capacities and transect walk exercises. Specific questions were tailored to each group, depending on the type of information that was being sought.

The list of focus groups and the rationale behind the selection is detailed below:

1. Island Development Committee – integral to the development of the island
2. Women's Development Committee – key player in the development opportunities for women in the island
3. Preschool children and Preschool teachers – the preschool was identified within the transect walk as being at risk, it was also deemed interesting and important to obtain views from very young people and those involved in the education sector
4. Health Centre / Community Health Worker – some of the risks and vulnerabilities in the previous tools identified have direct health related issues.

Community Health Worker / Health Post

Questions Posed to Community Health Worker	Answers
What are the reasons for the apparent increase in Dengue fever on the islands, and what is the link between dengue fever and mosquitoes?	o mosquitoes go to clean water for breeding, o this leads to an increase in the number of mosquitoes. o Dengue fever is transmitted by a certain type of mosquito o Increased number of mosquitoes, leads to increased exposure to mosquito bites, which leads to an increase in transmission of the virus
What health related problems do you associate with the Meedhoo sewer system?	o Stagnant water sitting in pipes – encourages mosquito breeding o Outflow is close to the inner reef, resulting in environmental damage to coral and fish stock o Sewer waste disposal should be to deeper water to remove the waste from the recreational area and the areas important to local fishing
Do you see any health related problems with the waste management at Meedhoo, or with the spread of waste around the island?	o Waste should be further reduced, with all burnable items being burnt o Poor collection of food waste can increase the chance of disease if people come into contact with it
What do you consider to be the main water, sanitation or health related issue for the people of Meedhoo?	o Lack of awareness for health and health related practices, particularly in the older generation
What are the types of information distributed by the community health worker/health center to the Meedhoo public, why is this information distributed and who is the target audience?	o Water tank and roof maintenance – information disseminated to the household owner to ensure that drinking water is kept safe o Chlorination and regular cleaning of groundwater well – information disseminated to the household owner to ensure that wells are kept free from mosquito larvae. This was most recently done in January 2006 o Information sessions on nutrition, dental health, personal health – distributed to school children to emphasis the importance of learning good health habits from a young age o Leaflet distribution – on subjects such as dengue fever, and rats and health, distributed as required to household and persons visiting the health center

What is the incidence of disease over the past year at Meedhoo?	o There have been no recorded communicable diseases in the past 2 months (April-May 2006) o Diarroheoa cases are generally confined to children under 10 yrs, and there is on average less than one case reported per week o Some specific outbreaks of illness have occurred, such as the 2005 food poisoning outbreak with 87 cases in one day due to contaminated chicken meat. o Only one confirmed case of dengue fever was reported from Meedhoo in 2005. So far, no confirmed cases have been reported in 2006
What are some of the major limitations the community health center at Meedhoo faces?	o There is no laboratory capacity at Meedhoo. All laboratory testing is done at Ungoofaaru where there are additional trained personnel also available o Some of the older generation are not open to new information

Key Finding:

The health center is very active in the dissemination of information. There appears to be several programmes already undertaken on a regular basis which target specific water and health related concerns. Most VCA participants were aware of these programmes and have taken part in the awareness raising activities at a household level (i.e. regular tank cleaning and well chlorination).

For reference purposes, the results from the IFRC baseline survey (including summary of the information collected in June 2006) is presented in this section. The focus of the surveying was on water, sanitation, health and awareness issues.

Results from Water-Sanitation-Health Survey IFRC baseline Survey - Meedhoo Island, Raa Atoll, June 2006

General Information:

- 50 household surveys completed
- Average of 8 people per household
- Mixed livelihood opportunities
- Mixed ages in households

Water information

- Most people have at least one rainwater tank (private/household)
- All households have shallow well
- Rainwater is used for cooking/drinking
- Groundwater used for all other uses
- Rainwater is considered safe for drinking by most people
- Drinking water supply does run out (for almost 50% of people)
- Well water has some problems (salty/smelly)
- Most people currently do not use communal water supply

⇨ Water Supply and Water Quality Management

Sanitation/Health/Disease

- Flush toilet/septic tank and associated sewer line is most common
- Everyone cleans their rainwater tank, most commonly with water
- Mosquitoes are considered a problem, mainly because of bites
- All people surveyed had a high level of understanding about cleanliness, diarrohea, causes of diarrohea and prevention

⇨ Sanitation System Maintenance and continued Awareness and Education

Where does health information come from?

- Information related to health generally comes from health workers
- Information about safe water collection and storage is included (like cleaning roofs, netting over tanks, storage)

- Most people currently do not use communal water supply

Alternative Water Supply Management - There is some interest in paying for improved water supply, however, only if water is needed

Management Strategy required for operation, maintenance and sustainability of RO water plant

Island Development Committee (IDC)

Questions Posed to a representative from the Island Development Committee	Answers
Are there any plans to improve the sewer system?	• A project plan has been done
Are there any plans to pave the roads?	• There is a plan to construct the pavement by the households themselves with respect to the area on the road and the plot of the house
Are there any plans to build a sea wall in order to reduce beach erosion?	• Projects are planned for reclamation
Are there any plans to build a vocational training center?	• Yes there is a plan to construct a center for vocational training and its service will be provided shortly
Are there any plans to build playgrounds or parks for children?	• There are finalized plans to make a children's park
What are the plans are there to install phone lines to residential houses?	• The master plan for distributing telephone line to individual households for the next 5 years is completed
What plans are there to establish a company that can bring money to the community as a whole?	• It has been discussed to form a public co-operative company
Are there plans to build a sports stadium/center?	• A request has been submitted to the government to construct a social center
What plans are there to install a slipway to service bigger boats, and is this seen as a way to increase island income generation?	• One individual has requested to construct a slipway, however, no agreement has been reached as yet. There are thoughts about, or discussions have taken place about construction of an alternative harbour

Key Finding:

There are several development concepts in the planning stage for Meedhoo Island. Most address the increase in demand for better services, or community facilities. The VCA participants were not well informed of these plans and for many this was the first time they had heard of such proposals by the IDC.

Women's Development Committee (WDC)

Questions Posed to a representative from the Womens Development Committee	Answers
Are you considering a new pre-school or renovation of the current preschool?	• It is considered and a proposal is being forwarded to Care Society and the UNDP
Are there any plans to increase the job opportunities for women?	• The preschool is run by WDC to widen the job opportunities for women
Are there any plans to open a pharmacy or a restaurant in order to raise funds?	• No, not thought of yet
Are there any plans to introduce income generating activities for stay-at-home mothers?	• It is planned to develop a women's center to run different courses for women

How can the WDC contribute to the development of the island?	• By assisting and working together with the IDC
Are there plans to provide vocational training to women in different areas?	It is planned and even now a training programme is on going
What are the obstacles to implement specific projects?	• Not getting the support of all women of the island
How well do you the support of the youth?	• We do get support from the youth

Key Finding:

Unfortunately key members of the WDC were unable to answer questions and the only male member of the WDC was the representative for discussions. Further discussion with more representatives of the WDC needs to be undertaken to ensure that the most accurate information is collected.

Pre-school Children and Pre-school Teachers:

In addition to the questions posed to the preschool teachers, the children were asked to draw pictures of what they saw as a hazard, or risk in there island. The pictures drawn represented a variety of hazards, including the sea, household gas and knifes and falling coconuts. Some of the selected images are presented in Figure 4.

Questions Posed to the Preschool teachers	**Answers**
Do you face additional difficulties because of the close proximity to the sea? Are there any precautionary measures taken?	• There are no additional difficulties because of the close proximity to the sea, but as a precautionary measure a surrounding wall is being constructed
What are the most difficult problems that you face?	• Not enough toilets or bathrooms • No management of drinking water • No type writer • Not enough space to keep equipment • Furniture has gone old
What hazards do you perceive in the preschool and area immediately surrounding it?	• The roof is old and we feel that it could be a threat to safety
What do you do in medical emergencies?	• For cuts and minor bruises we use first aid (preschool teachers are trained). But if the emergency is serious we take treatment from the Health Centre.
Are there any plans to remove the coconut trees inside the school area?	• It is not planned. Coconut trees are cleaned up every now and then, however, the cleaning is not done as much as it should be done.

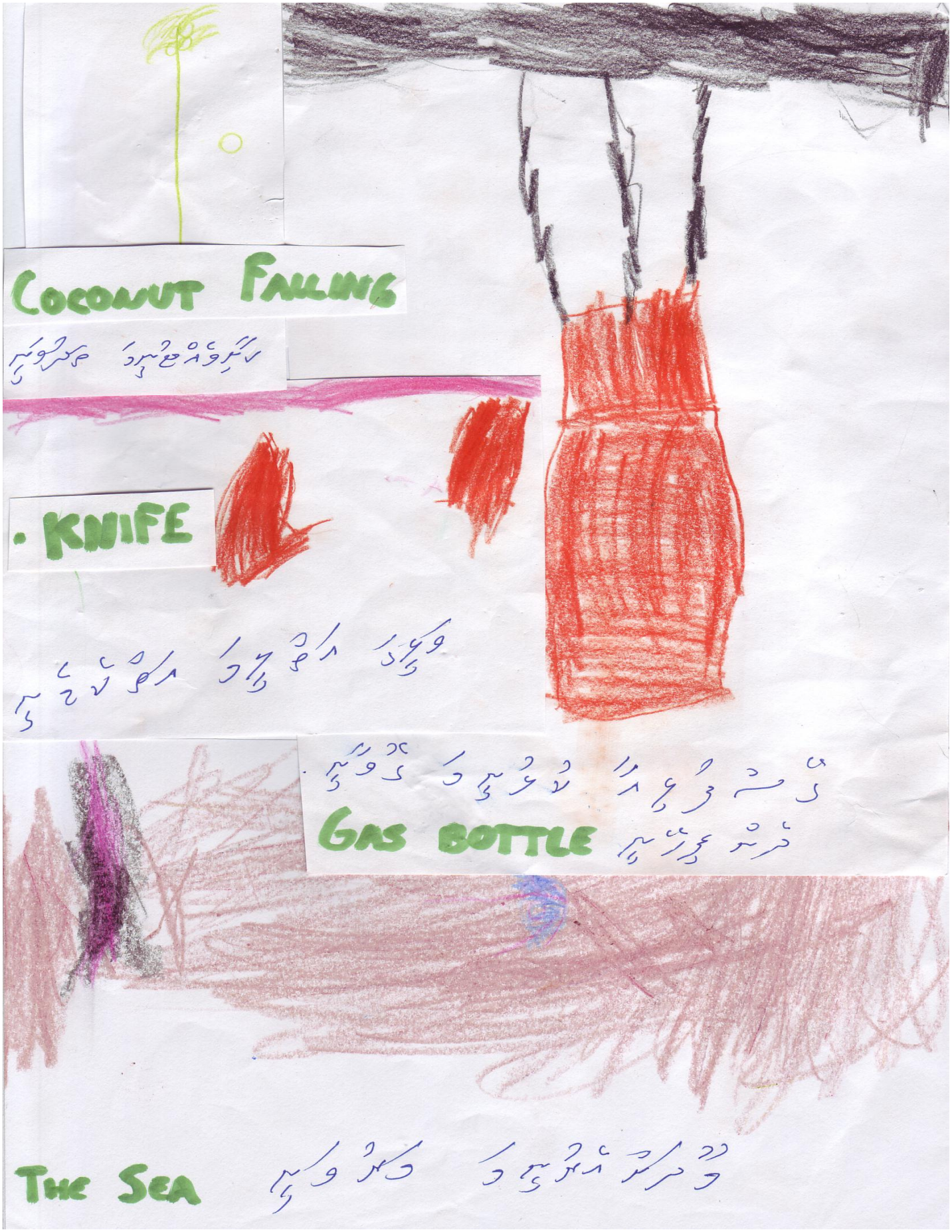


Figure 4. Important Hazards identified and drawn by the Meedhoo Preschool Students, June 2006