



United Nations Development Programme
Country: Maldives



Project Document 2010-2012

Project Title: Project on developing guideline on life-cycle management of safe shelter facilities of vessels in Maldives

UNDAF Outcome(s): By 2010, communities enjoy improved access to environmental services and are more capable of protecting the environment and reducing vulnerability and disaster risks with enhanced disaster management capacity

Expected CP Outcome(s): Communities enabled to manage impact of climate change and reduce disaster vulnerabilities

Expected Output(s): Increased knowledge base of communities of appropriate options and mechanisms for disaster risk reduction, and adaptation to climate change

Implementing Partner: Ministry of Housing, Transport and Environment

Other Partner: Japan International Cooperation Agency (JICA)

Project on Establishing Life-Cycle Management System of "Vessel Safe Shelters" in the Maldives

Project aims at establishing the foundational system to achieve both appropriate safety standard and optimal Life-Cycle Cost of vessel safe shelters in pilot islands.

Project consists of two outputs: 1) Guideline for technical standard and Life-Cycle Management of vessel safe shelter facilities developed, tested and communicated with users responsible for pilot islands. 2) Database for efficient and effective Life-Cycle Management of vessel safe shelter facilities developed and communicated with users responsible for pilot islands.

Programme Period:	<u>2010 - 2012</u>	2010-2012 Budget:	<u>USD 310,000</u>
Key Result Area	<u>Crisis Prevention & Recovery</u>	Total resources required	<u>USD 310,000</u>
Atlas Award ID:		Total allocated resources:	<u>USD 310,000</u>
Start date:	<u>January 01, 2010</u>	• Government	<u>USD 10,000</u>
End Date	<u>March 31, 2012</u>	• Regular	_____
LPAC Meeting Date	<u>October 27th, 2009</u>	• Other:	_____
Management Arrangements	<u>National Implementation</u>	◦ Japan-UNDP Partnership Fund	<u>USD 300,000</u>
		Unfunded budget:	_____
		In-kind Contributions	_____

Agreed by (Implementing Partner):

Akram Kamaluddin,
Deputy Minister of Housing, Transport and Environment

Agreed by UNDP:

Arun Kashyap,
Officer-in-Charge

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1. SITUATION ANALYSIS

Maldives is the sixth smallest state (in land area) comprised of about 1,192 islands, of which 199 are inhabited with a population of some 0.3 million in 2006. The territory of Maldives is comprised by less than 1% land mass (non-contiguous) and more than 99% sea waters. Most islands (80%) have an elevation of only 1 meter above sea level and none are elevated as much as 3 meters above sea level. It sees harbours and ports as central to people's life since they are primary and sometimes sole accesses to the outside world for the islands. In 2004 Tsunami, over 25% of 199 inhabited islands suffered from major damages on their harbour facilities. A lot of reconstruction support has been provided for the harbour sector, which forms a precondition of their livelihood, transportation system and even national development in view of January 2011 graduation to middle income country.

A study on Disaster Risk Profile of the Maldives conducted by UNDP in 2006 reveals that Maldives is vulnerable to multi natural hazard risks including storm surge, cyclones, strong winds, flooding, tsunami. It is obvious evidence of this that the 2004 Tsunami imposed on the country USD 470 million in losses that is equivalent to 62% of its GDP compared to less than 2% in Indonesia and Thailand. More than the Tsunami, what has become alarming is climate change risk. Increasing frequency and intensity of extreme weather events has been experienced over the past few years such as the May 2007 Sea Swells, which inundated around 88 islands across the country. The close proximity of the settlements to the sea and low elevation of the islands make people especially vulnerable to sea-borne hazards such as storm surges, high tides and tsunami. These vulnerabilities are expanding their human insecurity, which leads to the downside risk of their economic and social life by sudden and profound reversals.

Under such highly vulnerable environment to the sea-born hazards in Maldives, vessel safe shelters are essential to enhance human security of island communities. A concept of "vessel safe shelter" refers to the space (see below photo) in the harbour protected by robust harbour facilities such as breakwater, quay wall, jetties and sea wall.

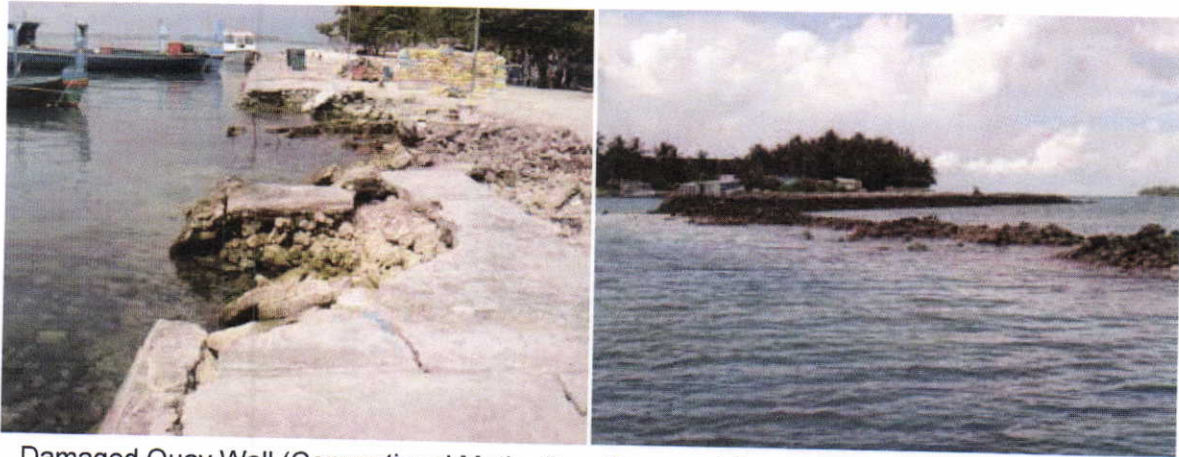


← Vessel Safe Shelter

Vessel safe shelters themselves play an important role in mitigating the sea-borne hazards not only inside the shelters but also in their backyards where many residential houses and commercial facilities exist. Moreover, vessel safe shelters are the key to safeguard livelihood of island communities such as fishing, trading and tourism from those hazards. As island communities largely depend it on their vessels, damage and insecurity of vessel safe shelters directly jeopardise their livelihood. The very high degree of livelihood dependence on vessels increases their socio-economic vulnerability to the sea-borne hazards.

However, many existing harbours adopt conventional construction method, which is structurally vulnerable to the increasing sea-borne hazards, thereby limited capacity to mitigate the hazards.

This clearly indicates the importance and necessity of mainstreaming disaster risk reduction in construction and reconstruction of vessel safe shelters.



Damaged Quay Wall (Conventional Method)

Damaged Breakwater (Conventional Method)

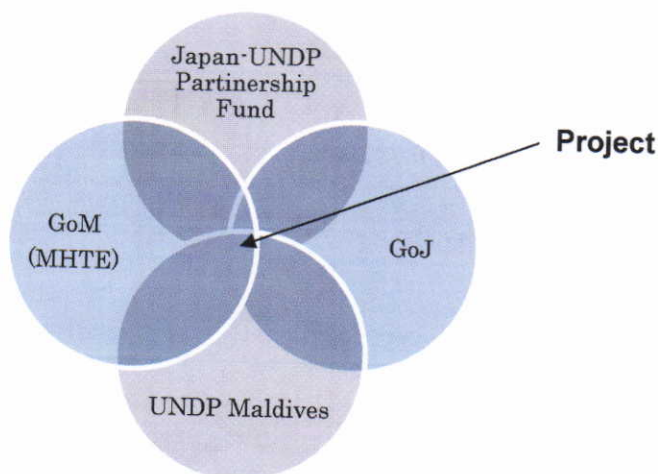
The structural vulnerability of conventional method also requires frequent maintenance work. This contributes to the fact that over 40% of annual budget for harbour management at Ministry of Housing, Transport and Environment (MHTE) is mobilised only for maintenance cost of harbour facilities. Construction and re-construction without views of Life-Cycle Management (LCM) also implies more future burden of maintenance cost associated with high socio-economic vulnerability to the said sea-borne hazards.

Maldives Tsunami Reconstruction Project financed by Japan International Cooperation Agency (JICA) and implemented by MHTE targets on 8 damaged harbours scattered from northern, central to southern regions. This project adopts more reliable and adequate technical standard, which allows substantially lower Life-Cycle Cost (LCC) of the facilities despite higher initial investment cost. In addition, based on the research on tsunami damage mechanism, it designs reinforcement works for quay walls and seawalls as the tsunami countermeasures.

Maldives is both strongly and urgently placed to initiate to address the necessity of establishing national technical standard and Life-Cycle Management (LCM) of vessel safe shelters, as the impact of climate change is becoming more evident. As it is one of the most vulnerable countries to predicted climate change, no action is not an option for the country.

2. RATIONALE

2.1. Focus Areas of Four Parties



The below tables show on priority areas of 4 parties; Japan-UNDP Partnership Fund, Government of Japan (GoJ), Ministry of Housing, Transport and Environment (MHTE), Government of Maldives (GoM) and UN Country Team and UNDP Maldives. The objective of Project (hereinafter, "Project" refers to Project on Establishing Life-Cycle Management System of "Vessel Safe Shelters" in the Maldives) falls on to the shared areas of these 4 parties as shown above.

Under the priority areas of Japan-UNDP Fund, Project is categorized as a disaster reduction project whereas its super goal aims at enhancing human security. In Japan's ODA policy documents such as ODA charter and Japan's medium-term policy on ODA, GoJ regards disaster reduction as a priority issue in its policy and states Japan's active commitment to disaster reduction as a global issue. Priority areas of UN Country Team and UNDP Maldives also capture the Project in their domains of United Nations Development Assistance Framework (UNDAF) and Country Programme Action Plan (CPAP). For example, Project will contribute to CPAP output "Increased knowledge base of communities of appropriate options and mechanisms for disaster risk reduction, and adaptation to climate change" through ensuring the approach of disaster risk reduction in national technical standard of vessel safe shelters. Above all, MHTE policy No.1 and its strategies exactly and clearly cover the issue and theme of Project.

A) Priority Areas of Japan-UNDP Fund

Matrix of priority issues and types of projects	
Pilot project (Operational)	Research and joint study (Analytical)
<ul style="list-style-type: none"> ➤ Democratic governance ➤ Gender ➤ South-South Cooperation to promote Asia-Africa partnerships and partnerships with emerging donors for poverty reduction through growth. ➤ Sustainable energy and the environment ➤ <u>Disaster reduction</u> ➤ Private sector development 	<ul style="list-style-type: none"> ➤ <u>Human security</u> ➤ Poverty reduction through economic growth (e.g., development of infrastructure) ➤ Gender ➤ South-South Cooperation

Source: Japan-UNDP Partnership Fund

B) Government of Japan (GoJ)

ODA Policy Documents	Statement
Japan's Official Development Assistance Charter (August, 2003)	As for global issues such as global warming and other environmental problems, infectious diseases, population, food, energy, natural disasters, terrorism, drugs, and internationally

	organized crimes, further efforts must be given immediately and in a coordinated manner by the international community. Japan will address these issues through ODA and will play an active role in the creation of international norms.
Japan's Medium-Term Policy on ODA (February, 2005)	Japan provides assistance for policy proposals, institution building, human resources development and a steady implementation of the plans that are necessary for making disaster prevention an integral part of national policy, city planning and rural planning. In addition, Japan will also make efforts to rapidly deliver assistance to disaster victims in the aftermath of a disaster and to reduce the vulnerability to disasters of the poor by ending the vicious circle of disaster and poverty during the reconstruction phase.

Source: Ministry of Foreign Affairs of Japan Website

C) Priority Areas of UN Country Team and UNDP Maldives

UN Policy Documents	Outcome and Outputs
Outcome(s) of United Nations Development Assistance Framework (UNDAF)	By 2010, communities enjoy improved access to environmental services and are more capable of protecting the environment and reducing vulnerability and disaster risks with enhanced disaster management capacity
Expected Outcome(s) of Country Programme Action Plan (CPAP)	Communities enabled to manage impact of climate change and reduce disaster vulnerabilities
Expected Output(s) of Country Programme Action Plan (CPAP)	3.1 Increased knowledge base of communities of appropriate options and mechanisms for disaster risk reduction, and adaptation to climate change

Source: UNDAF 2008-2010 and CPAP 2008-2010

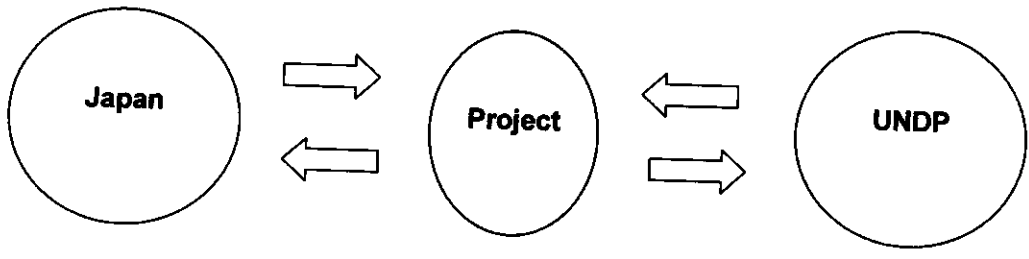
D) Priority Areas of Ministry of Housing, Transport and Environment (MHTE)

MHTE's Policy and Strategy	
Policy 1	Formulate and enforce standards for reclamation development and maintenance of roads, drainage and coastal infrastructure
Strategies for Policy 1	1.1 Create and maintain a national registry of all coastal infrastructures
	1.3 Prepare guidelines and standards for roads, drainage and coastal infrastructure development and maintenance, across the nation

Source: MHTE Website

2.2. Synergetic Collaboration with the Existing Project of Japan

In the Project, Japan and UNDP will be able to further deepen and widen their partnership through synergetic collaboration of sharing the results of the following studies and experience for the mutual priority areas of disaster risk reduction and human security in Maldives.



	Name of Studies and Projects	Project Period
Japan	Maldives Tsunami Reconstruction Project (Harbour Component)	2008 - Present
	The Development Study on the Seawall Construction Project for Male Island	1991 - 1992
UNDP	Disaster Risk Profile in Maldives	2006
	Detailed Island Risk Assessment in Maldives (DIRAM)	2008 – 2009
	Cost-Benefit Analysis of Risk Mitigation Measures (CBA)	2009 – 2009

The above 2 studies conducted by Japan will present exemplary technical standard and approach for design, construction and maintenance of vessel safe shelter facilities in the Maldives. On the other hand, 3 studies conducted by UNDP Maldives will provide both nation-wide and island-specific disaster risk data as well as cost-benefit analysis of some types of vessel safe shelter facilities against potential hazards. Utilisation of data both from Japanese and UNDP studies will be able to produce disaster-risk-reduction-oriented technical standard and database for design and maintenance of vessel safe shelter facilities in the Maldives, which will contribute to their optimal structure and Life-Cycle Cost (LCC).

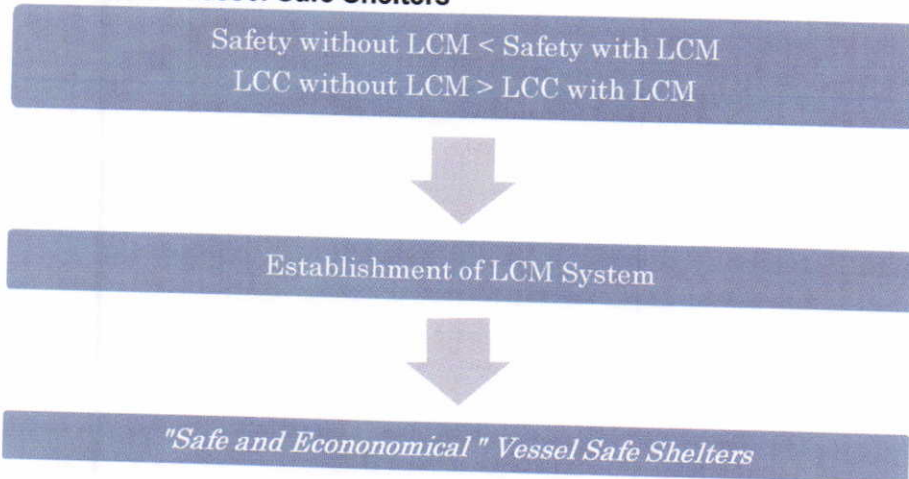
Project will also present precious opportunities to Japan that it will be able to add the value on its on-going and completed harbour reconstruction projects for disaster risk reduction and human security enhancement in the Maldives. Likewise, UNDP Maldives will be able to make the most of fruits of its studies for hazard mitigation, where relatively less support has been provided compared to preparedness, response and relief and reconstruction.

3. PROJECT OUTLINE

Title of Project:	Project on Establishing Life-Cycle Management System of "Vessel Safe Shelters" in the Maldives
Duration of Project:	January 2010 – March 2012 (2 years and 3 months)
Target Area:	6 pilot islands in Maldives (Foakaidhoo, Kulhudhuffushi, Male, Thulusdhoo, Dhaandhoo and Viligilli)
Implementing Partner:	Construction Industry Development Section, Ministry of Housing, Transport and Environment (MHTE)
Total Project Budget	USD 310,000

3.1. Objectives

A) Objective of LCM for Vessel Safe Shelters



As indicated in the above chart, Project aims at establishing LCM system for safer and more economical vessel safe shelters. To achieve this objective, Project will accomplish the below 2 outputs by March 2012:

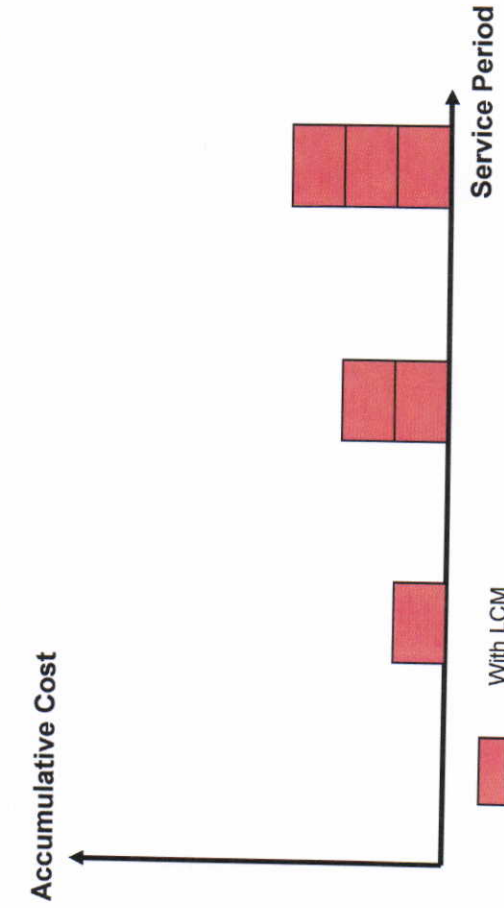
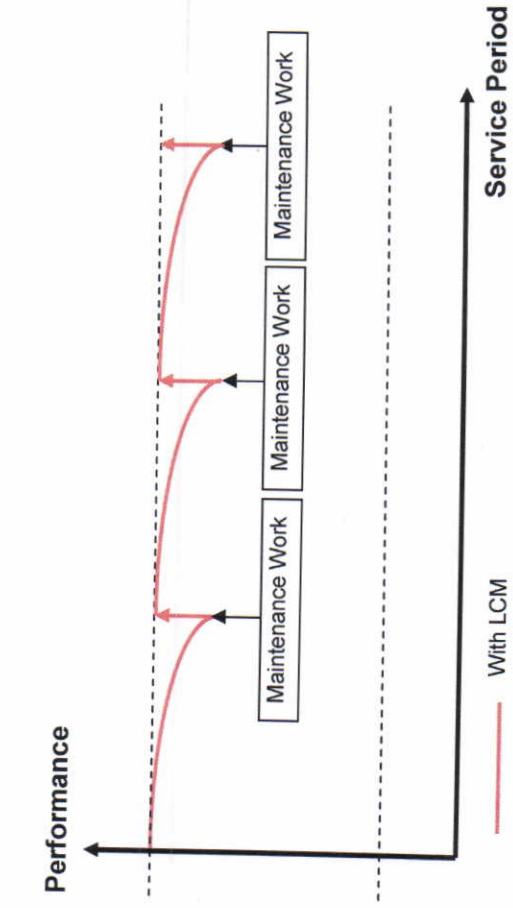
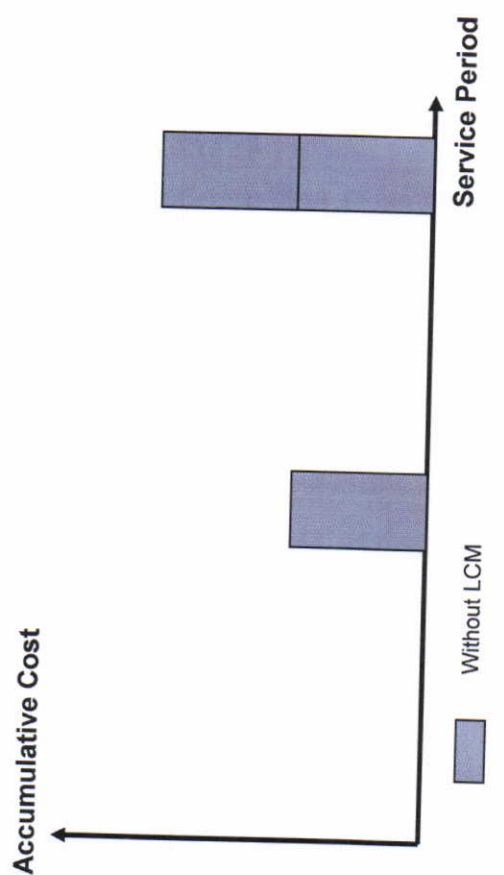
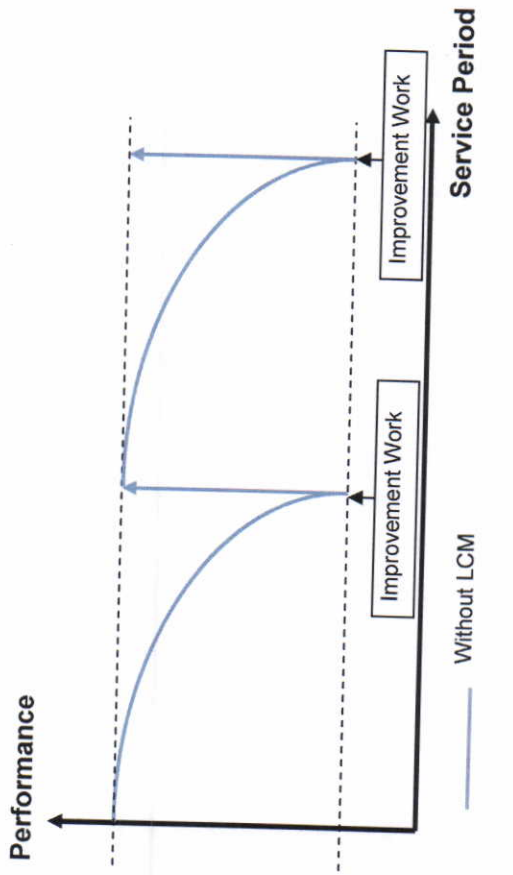
1. Guideline for technical standard and Life-Cycle Management of vessel safe shelter facilities developed, tested and communicated with users responsible for pilot islands
2. Database for efficient and effective Life-Cycle Management of vessel safe shelter facilities developed and communicated with users responsible for pilot islands

These 2 outputs all together will establish the foundational system to ensure the safety level of vessel safe shelters as well as optimal LCC. The guideline will set up the national technical standard for design, construction and maintenance of vessel safe shelter facilities to be complied. Database will support guideline-based facility management so that harbor managers can monitor the conditions of the facilities, analyze the maintenance priority for optimal LCM and decide which facilities should be maintained for the following years.

The below charts describe the difference of "with LCM" and "without LCM" in performance and accumulative cost against the same service period. Optimal LCM enables the facilities to keep its performance higher so that they can defend the vessel safe shelters against the potential hazards. Besides, small scale maintenance can realize smaller LCC by avoiding big scale improvement work at the time when the facilities are almost out-of-service level.

Furthermore, higher technical standard of new construction and reconstruction will also contribute to sustaining the higher performance for longer service period as its performance level itself is higher than that of conventional construction method. Application of LCM onto new construction and reconstruction will also lead to lower LCC.

B) Performance and Accumulative Cost of "Without LCM" and "With LCM"



3.2. Target Beneficiaries

A) Beneficiaries of Project

Regions	Atoll	Island	i	ii	iii	iv	v	Purpose of Piloting
North	Shaviyani	Foakaidhoo	✓			✓	✓	Maintenance (Conventional)
	Haa Dhaal	Kulhudhuffushi	✓	✓		✓	✓	Design/ Construction
Central	Kaafu	Male	✓		✓	✓	✓	Maintenance (Permanent)
	Kaafu	Thulusdhoo	✓	✓		✓		Design/ Construction
South	Gaaf Alif	Dhaandhoo	✓		✓	✓		Maintenance (Permanent)
	Gaaf Alif	Viligilli	✓	✓		✓	✓	Design/ Construction

Project tentatively proposes above 6 pilot islands based on the following known criteria to test the validity and practicability of guideline and database:

- i) Island with high multi-hazard risk (Disaster Risk Profile in Maldives)
- ii) Island targeted in UNDP studies (DIRAM and CBA)
- iii) Island targeted in Japan studies/ projects
- iv) Island with bigger size of beneficiaries
- v) Government priority

3 regions were designated to reflect regional difference in geological and oceanographical features onto the guideline and database. In each region, Project appoints 2 pilot islands for testing the guideline in all the life-cycle stages from design to maintenance. Maintenance guideline will be tested both in harbors in conventional and permanent construction method given that there are still many harbors constructed by conventional method. Tentative report from MHTE says that there are 187 harbour facilities in Maldives, out of which 72 are constructed in permanent method whereas 70 are in conventional method. Particularly, islands with high multi-hazard risk and larger population were selected to take into account disaster risk reduction in LCM. The target beneficiaries of pilot islands are 118,624 residents (2006) accounting for about 40 % of the national population. However, Project will flexibly and appropriately review the tentative selection of pilot islands based on the forthcoming criteria such as feedbacks from consultants and stakeholders and MHTE's harbor development plan for 2011 to be drafted in July 2010.

B) Users of Guideline and Database

Project assumes that users of guideline for technical standard and LCM of vessel safe shelter facilities are those who supervise design, construction and maintenance at the below 3 national, local and site levels. Namely, they are MHTE harbour management staff (7 staff), local government harbour management staff (3 staff per Province to be recruited by Province by October 2009), and engineering consultants (29 registered) and contractors (7 registered).

On the other hand, database will mainly benefit MHTE and local government harbour management staff for efficient and effective management of the guideline.

Guideline	Database
MHTE harbour management staff (7)	MHTE harbour management staff (7)
Local government harbour management staff (9)	Local government harbour management staff (9)
Engineering Consultants (29) and contractors (7)	

3.3. Expected Deliverables

Project will generate deliverables described in Quality Criteria in Quality Management for Project Activity Results in Monitoring Framework and Evaluation.

3.4. Gender Perspectives

In the 6 target islands, census 2006 indicates that female population is more or less same as or larger than male one. In Maldives, many males are away from their home islands working for fishing, trade and tourism sectors. These factors indicate that Project has higher possibility to

benefit females more than males. In particular, females require vessel safe shelters for their maternal and child health. One of the factors of high maternal mortality rate in Maldives is limited access to hospitals. In the serious cases, pregnant women are required to go to regional-level hospitals, which are only 8 (2003) in the country. Vessel safe shelters play a key role in safe transportation of pregnant women to regional-level hospitals.

In the outputs level, direct beneficiaries are users of guideline and database, who are MHTE harbour management staff (7), Local government harbour management staff (9) and Engineering Consultants (29) and contractors (7). 13.89% (5 out of 36) of beneficiaries are identified as females as shown below. Project will particularly pay attention to ensure the female participation in the project activities by putting priority in their schedule and convenience.

Beneficiaries	Male	Female
MHTE Harbour Management Staff	5	2
Local Government Harbour Management Staff	To be recruited in 2009	To be recruited in 2009
Engineering Consultants	26	3

3.5. Exit Strategy

Sustainability and replication of Project, in other words, widespread use of guideline and database depends on exit strategy of Project. Development and enhancement of users' capacity, ownership and motivation will form the foundation of the exit strategy.

International consultant will be deployed in MHTE to develop the technical capacity of MHTE harbor management staff through knowledge sharing and transfer in on-the-job training (office and on-site), working group meetings and training workshops. Moreover, trainings will be particularly designed to produce trainers of trainings for sustainable development of LCM system. Trained trainers are expected to conduct trainings for the other provincial government staff, which will foster the institutional capacity of MHTE and provincial government.

In addition, MHTE harbor management staff and Provincial harbor management staff will be actively involved in the development process of the said deliverables to ensure their ownership of Project. The deliverables will be prepared through the inputs, feedback and support from MHTE harbor management staff, Provincial harbor management staff and consultants and contractors in working group meetings, consultation workshops, stakeholder workshops and public comments etc. The database will also be designed in a flexible manner that beneficiaries can expand the functions for the continuous improvement of LCM.

Furthermore, a series of meetings and workshops will foster users' good understanding on budget-saving effect of LCM. The financial merit of LCM will keep their motivation to continuously invest their own financial and human resources in this initiative. Operational cost of LCM system will be mainly composed of monitoring cost for target vessel safe shelters such as transportation cost and DSA for monitoring staff. It is tentatively estimated USD 10,000 for 6 islands per year, which accounts for 1 -3 % of total maintenance cost in 2008. However, the estimation depends on monitoring frequency and number of target islands, which will be clarified through pilot activities. Project will seek measures to minimize monitoring cost for the sustainability of LCM system.

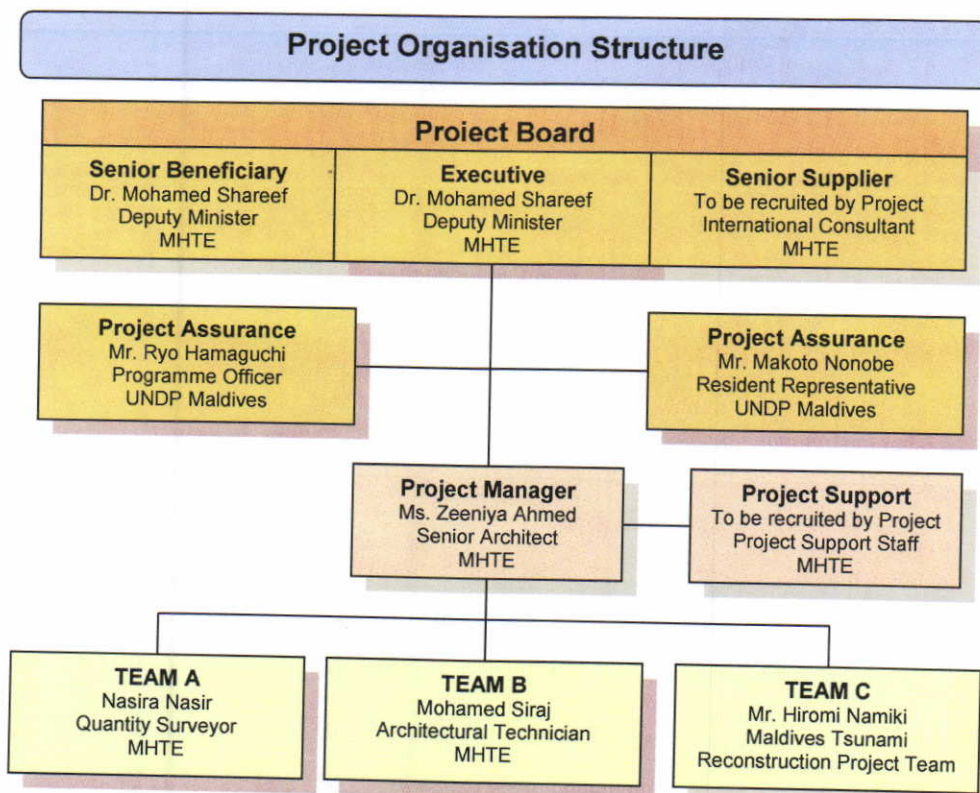
Year: 2011

EXPECTED OUTPUTS <i>And baseline, associated indicators and annual targets</i>	PLANNED ACTIVITIES <i>List activity results and associated actions</i>	2011				Responsible Party	Funding Source	Budget Description	Amount (USD)
		Q1	Q2	Q3	Q4				
1. Guideline for technical standard and Life-Cycle Management of vessel safe shelter facilities developed, tested and communicated with users responsible for pilot islands <i>Baseline: No guideline exists</i> <i>Indicators: Guideline</i> <i>Targets: Guideline developed</i>	1.4 Guideline and implementation framework tested in pilot safe shelters	X	X	X	X	MHTE	Government Contribution	Travel and DSA	5,000
	- Pilot the draft guideline in designated pilot safe shelters								
	- Organize stakeholders workshop to present findings in piloting				X	MHTE	Partnership Fund	Cost of workshop	1,000
	- Finalize and submit final the guideline and implementation framework				X	MHTE	Partnership Fund	Cost of meeting	200
	2.3 Data collection, data input and LCM planning completed								
	- Conduct data collection survey in pilot islands	X	X	X	X	MHTE	Government Contribution	Travel and DSA	5,000
	- Input collected data into database	X	X	X	X	MHTE	Partnership Fund	Cost of meeting	200
	- Develop LCM plans in pilot islands	X	X	X	X	MHTE	Partnership Fund	Cost of meeting	200
	- Finalize database, management framework and operation guideline				X	MHTE	Partnership Fund	Cost of meeting	200
	3.1 Project management, monitoring and coordination conducted								
		X	X	X	X	UNDP	Partnership Fund	Programme staff	6,000
		X	X	X	X	UNDP	Partnership Fund	Local project support staff	13,000
SUB-TOTAL									30,800
GSM (7% of Total of Partnership Fund)									1,456
TOTAL									32,256

Year: 2012

EXPECTED OUTPUTS <i>And baseline, associated indicators and annual targets</i>	PLANNED ACTIVITIES <i>List activity results and associated actions</i>		2012		Responsible Party	Planned Budget		
			Q1	Q2		Funding Source	Budget Description	Amount (USD)
1. Guideline for technical standard and Life-Cycle Management of vessel safe shelter facilities developed, tested and communicated with users responsible for pilot islands <i>Baseline: No guideline exists</i> <i>Indicators: Guideline</i> <i>Targets: Guideline developed</i>	1.5 Awareness on the National Guideline enhanced - Receive public comments and advertise the guideline in effective manners		X		MHTE	Partnership Fund	Advertisement	500
2. Database for efficient and effective Life-Cycle Management of vessel safe shelter facilities developed and communicated with users responsible for pilot islands <i>Baseline: No database exists</i> <i>Indicators: Database</i> <i>Targets: Database developed</i>	2.4 Training on database management and LCM planning provided for main users - Organize training on database management and LCM planning for main users		X		MHTE	Partnership Fund	Cost of training	4,774
3. Programme Management	3.1 Project management, monitoring and coordination conducted		X		UNDP	Partnership Fund	Programme staff	1,000
			X		UNDP	Partnership Fund	Local project support staff	4,000
SUB-TOTAL								10,274
GSM (7% of Total of Partnership Fund)								719
TOTAL								10,993

5. MANAGEMENT ARRANGEMENTS



➤ Implementation modality

This project will be implemented under National Implementation Modality (NIM). Results-based management and operational, practical and targeted coordination are the main management arrangements followed under this project. In line with UNDP prevailing rules and regulations and on the basis of indicators and required capacities, MHTE will be the Lead Agency responsible for the overall accountability, management and administration of the project as well as the Implementing Partner (IP) responsible for project management. MHTE will designate the National Project Director, Project Manager and mobilize other support personnel as appropriate to support the project.

➤ Roles and responsibilities of Project Board

The Project Board will provide policy guidance and monitor the performance (timely implementation of all components) of the project, review progress on a periodic basis in terms of the delivery of project results and benefits, approve progress reports and end of project report, managing risks and ensure that project milestones are managed and completed. It provides guidance on matters concerning overall project management and project finances approves project revisions and addresses project issues as raised by the Project Manager/Assistant. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems between the project and external bodies. In addition, it approves the appointment and responsibilities of the project manager/associate and defines the latter's responsibilities. The Project Board will work on a consensus basis. The Project Board will set its rules of procedures at its first meeting following the project's signature.

➤ Roles and responsibilities of Project Manager

The Project Board will allocate responsibility for day-to-day implementation and management of the project to the Project Manager who is responsible for project implementation according to an agreed work plan and within set budget ceilings. The Project Manager will essentially be responsible for the successful running of the project, and for the delivery of outputs under this project document. The Project Manager will also provide coordination, management and oversight over the establishment and activities of the various task forces that will be established to help achieve the outputs in a participatory

manner, and coordinate also with other projects that contribute to the same outcome in the country programme. Hence the Project Manager will be responsible for all matters concerning the day-to-day running of the project on behalf of the Project Board, to ensure that the project produces the required products, to the required standard of quality and within the specified constraints of time and cost. Hence, the Project Manager will also be responsible for producing regular progress reports and end of project report. The Project Manager will meet on a regular basis with the responsible UNDP Programme Officer.

➤ **Roles and responsibilities of IP**

The MHTE is required to open a separate bank account for the project. UNDP will advance the funds to the IP according to UNDP rules, regulations and guidelines. It will be the responsibility of the MHTE to prepare a consolidated financial report, in the required format, and provide it to UNDP at regular and necessary intervals. It will also be the responsibility of the MHTE to provide the required progress reports to UNDP. MHTE will also undertake monitoring activities on the project's progress and implementation. Work environment for consultants and a project assistant such as desks, chairs, computers and printers will be arranged by MHTE.

➤ **Collaborative arrangements with related projects**

Project will be supported by MHTE's Maldives Tsunami Reconstruction Project (Harbour Component) through its data and advisory provision to develop guideline and database. Project will particularly refer to the technical standard for design in Maldives Tsunami Reconstruction Project (Harbour Component).

➤ **Prior obligations and prerequisites**

Reconstruction of 3 target harbours (Foakaidhoo, Male and Dhaandhoo) in Maldives Tsunami Reconstruction Project (Harbour Component) needs to be completed on schedule by the end of 2010. Maintenance guideline and database will be piloted in these harbours from 1Q of 2011. Furthermore, MHTE is required to timely initiate development of vessel safe shelters in 3 target islands (Kulhudhuffushi, Thulusdhoo and Viligilli) from 1Q of 2011 to pilot design standard of drafted guideline.

It is also prerequisite to employ provincial government staff for harbour management in target Province prior to the initiation of Project. These staff will join the training and take responsibility to monitor pilot vessel safe shelters on a regular basis.

➤ **Brief description/summary of the inputs to be provided by all partners**

Partners	Brief Description of Inputs
MHTE, Government of Maldives	<ol style="list-style-type: none"> 1. Select the Consultant 2. Day-to-day project implementation and coordination 3. Data provision and advisory support mainly on technical standard for design and maintenance and maintenance history (Maldives Tsunami Reconstruction Project (Harbour Component))
JICA, Government of Japan	<ol style="list-style-type: none"> 1. Attends periodic meetings and consultations with regard to the project 2. Assist the IP in monitoring progress of work undertaken by the Consultant and ensures that the set timelines are followed and milestones are achieved accordingly
UNDP Maldives	<ol style="list-style-type: none"> 1. Select the Consultant and prepare and award the contract 2. Facilitate required administrative procedures on payment of contract fees 3. Attends periodic meetings and consultations with regard to the project 4. Assist the IP in monitoring progress of work undertaken by the Consultant and ensures that the set timelines are followed and milestones are achieved accordingly 5. Bring in Experts from internal UNDP Regional and/or Global Offices to provide technical input and reviews of the Reports (as required). 6. Data provision and advisory support mainly on disaster

	<p>risks based on the below reports:</p> <ul style="list-style-type: none">- Disaster Risk Profile in Maldives- Detailed Island Risk Assessment in Maldives- Cost-Benefit Analysis of Risk Mitigation Measures
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6. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the annual cycle

- On a quarterly basis, a quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis submitted (see annex 1), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Project Progress Reports (PPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- a project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project
- a Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

Annually

- **Annual Review Report.** An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- **Annual Project Review.** Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

7. LEGAL CONTEXT

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document".

ANNEXES

Risk Analysis:

Description of Risk	Potential Impact on the Project	Mitigation Measures
Inflation – Continuous rise in prices	Unable to meet project costs with approved budgets	<ul style="list-style-type: none"> - Activities budgeted taking into account inflationary pressures - Proactive resource mobilization efforts through strengthened donor relations
Change of project personnel in UNDP and/or MHTE	Loss of institutional memory and familiarity with project implementation and its targets	<ul style="list-style-type: none"> - Ensuring good documentation of all project activities and effective hand-over to the successors
Crisis situation – Natural Disasters etc.	Shift of focus from project activities to addressing crisis issues	<ul style="list-style-type: none"> - Project review to allow for adjustment in activities
Shortage of manpower to support Project in MHTE	Delay and lower quality of project activities	<ul style="list-style-type: none"> - Employ project assistant for Project in MHTE
Difficulty in procurement of consultants due to high technicality of TOR	Delay in subsequent project activities	<ul style="list-style-type: none"> - Utilising the network of UNDP regional expert and review of TOR

Draft Terms of Reference for Key Project Personnel:

**CALL FOR PROPOSAL FROM INTERESTED FIRM FOR CONSULTANCY ON DEVELOPING
GUIDELINE AND DATABASE FOR LIFE-CYCLE MANAGEMENT SYSTEM OF
“VESSEL SAFE SHELTERS” IN THE MALDIVES**

TERMS OF REFERENCE

Background

Maldives is the sixth smallest state (in land area) comprised of about 1,192 islands, of which 199 are inhabited with a population of some 0.3 million in 2006. The territory of Maldives is comprised by less than 1% land mass (non-contiguous) and more than 99% sea waters. Most islands (80%) have an elevation of only 1 meter above sea level and none are elevated as much as 3 meters above sea level. It sees harbours and ports as central to people's life since they are primary and sometimes sole accesses to the outside world for the islands. In 2004 Tsunami, over 25% of 199 inhabited islands suffered from major damages on their harbour facilities. A lot of reconstruction support has been provided for the harbour sector, which forms a precondition of their livelihood, transportation system and even national development in view of January 2011 graduation to middle income country.

A study on Disaster Risk Profile of the Maldives conducted by UNDP in 2006 reveals that Maldives is vulnerable to multi natural hazard risks including storm surge, cyclones, strong winds, flooding, tsunami. It is obvious evidence of this that the 2004 Tsunami imposed on the country USD 470 million in losses that is equivalent to 62% of its GDP compared to less than 2% in Indonesia and Thailand. More than the Tsunami, what has become alarming is climate change risk. Increasing frequency and intensity of extreme weather events has been experienced over the past few years such as the May 2007 Sea Swells, which inundated around 88 islands across the country. The close proximity of the settlements to the sea and low elevation of the islands make people especially vulnerable to sea-borne hazards such as storm surges, high tides and tsunami. These vulnerabilities are expanding their human insecurity, which leads to the downside risk of their economic and social life by sudden and profound reversals.

Under such highly vulnerable environment to the sea-born hazards in Maldives, vessel safe shelters are essential to enhance human security of island communities. A concept of “vessel safe shelter” refers to the space (see below photo) in the harbour protected by robust harbour facilities such as breakwater, quay wall, jetties and sea wall.



Vessel Safe Shelter

Vessel safe shelters themselves play an important role in mitigating the sea-borne hazards not only inside the shelters but also in their backyards where many residential houses and commercial facilities exist. Moreover, vessel safe shelters are the key to safeguard livelihood of island communities such as fishing, trading and tourism from those hazards. As island communities largely depend it on their vessels, damage and insecurity of vessel safe shelters directly jeopardise their livelihood. The very high degree of livelihood dependence on vessels increases their socio-economic vulnerability to the sea-borne hazards.

However, most of the existing harbours adopt conventional construction method, which is structurally vulnerable to the increasing sea-borne hazards, thereby limited capacity to mitigate the hazards. This clearly indicates the importance and necessity of mainstreaming disaster risk reduction in construction and reconstruction of vessel safe shelters.

The structural vulnerability of conventional method also requires frequent maintenance work. This contributes to the fact that over 90% of annual budget for harbour management at Ministry of Housing, Transport and Environment (MHTE) is mobilised only for maintenance cost of harbour facilities. Construction and re-construction without views of Life-Cycle Management (LCM) also implies more future burden of maintenance cost associated with high socio-economic vulnerability to the said sea-borne hazards.

Maldives Tsunami Reconstruction Project financed by Japan International Cooperation Agency (JICA) and implemented by MHTE targets on 8 damaged harbours scattered from northern, central to southern regions. This project adopts more reliable and adequate technical standard, which allows substantially lower Life-Cycle Cost (LCC) of the facilities despite higher initial investment cost. In addition, based on the research on tsunami damage mechanism, it designs reinforcement works for quay walls and seawalls as the tsunami countermeasures.

Maldives is both strongly and urgently placed to initiate to address the necessity of establishing national technical standard and Life-Cycle Management (LCM) of vessel safe shelters, as the impact of climate change is becoming more evident. As it is one of the most vulnerable countries to predicted climate change, no action is not an option for the country.

In support to this initiative, a 2.5-year project entitled "Project on Establishing Life-Cycle Management System of "Vessel Safe Shelters" in the Maldives" supported by Japan UNDP Partnership Fund will be implemented. The project will seek "safe and economical" vessel safe shelters through establishment of LCM system. To achieve this objective, Project is comprised of the below 2 outputs:

1. Guideline for technical standard and Life-Cycle Management of vessel safe shelter facilities developed, tested and communicated with users responsible for pilot islands
2. Database for efficient and effective Life-Cycle Management of vessel safe shelter facilities developed and communicated with users responsible for pilot islands

These 2 outputs all together will establish the foundational system to ensure the safety level of vessel safe shelters as well as optimal LCC. The guideline will set up the national technical standard for design, construction and maintenance of vessel safe shelter facilities to be complied. Database will support guideline-based facility management so that harbor managers can monitor the conditions of the facilities, analyze the maintenance priority for optimal LCM and decide which facilities should be maintained for the following years.

This commitment is also explicit in the Country Programme Action Plan (CPAP) for 2008-2010, specifically under Output 3.1: *national, atoll, island and sectoral disaster management plans and climate change adaptation plans developed and implemented in pilot areas, and related capacity enhanced*; and Output 3.2: *increased knowledge base of communities of appropriate options and mechanisms for disaster risk reduction, and adaptation to climate change*.

For this purpose, UNDP Maldives will be engaging the services of a recognized Firm to develop guideline and database for life-cycle management system of "vessel safe shelters" in the Maldives.

Expected Outputs

Based on an agreed schedule (as stipulated in the contract), the Contractor (Team of Consultant/s) is expected to complete and submit the following:

Guideline	Database
1. Inception report	1. Inception report
2. Completion report on consultation workshop	2. Completion report on consultation workshop
3. Draft guideline	3. Draft database
4. Draft implementation framework	4. Draft management framework
5. Final plan for TOT training on the guideline	5. Draft operation guideline
6. Completion report on TOT training	6. Final Plan for data collection survey and pilot LCM planning in pilot islands
7. Final plan for piloting the guideline and implementation framework	7. Completion report on data collection survey and LCM planning in pilot islands
8. Completion report on piloting the guideline and implementation framework	8. Database (Final Version)
9. Final guideline	9. Management framework (Final Version)
10. Final implementation framework	10. Operation guideline (Final Version)
11. Completion report on advertisement and public comments	11. Completion report on TOT workshops on database management and LCM planning

Management Arrangements

The Contractor will be directly responsible to the Ministry of Housing, Transportation and Environment (MHTE). The Contractor will be based in MHTE and supervised by the Project Manager or designated official of the MHTE. UNDP Maldives will provide necessary technical assistance and administrative support. Project Board shall certify final acceptance of the output submitted by the Contractor. Approval of the output submitted shall be granted by the UNDP Maldives upon receipt of Final Certification from the Project Board.

Aside from MHTE, the Consultant is expected to work very closely, interact and coordinate with various ministries and departments i.e. National Disaster Management Centre, Department of National Planning, Ministry of Home Affairs and other government agencies. Interaction with government staff both at the policy and technical levels is imperative in this assignment. This will also involve consultation and interaction with engineers and consultants.

Reporting and Monitoring of progress shall be done as follows:

Activity	Deliverables	Timelines
1.1 Existing management framework of harbour project reviewed	Inception report including at least below items: <ul style="list-style-type: none"> - Analysis on key issues on physical structure and maintenance of vessel safe shelters against disaster risks - Findings in research visits to nominated pilot vessel safe shelters - Strategies for drafting the guideline - Draft plan for TOT on the guideline - Draft plan for test the guideline and implementation framework in pilot vessel safe shelters - Draft table of contents of the guideline 	3 rd month after the contract begins
1.2 Guideline and	Completion report on consultation	8 th month

implementation framework drafted	workshop	
	Draft guideline including at least below items: <ul style="list-style-type: none"> - Design technical standard for vessel safe shelters - Maintenance technical standard for vessel safe shelters - Procedures to design vessel safe shelters - Maintenance procedures of vessel safe shelters 	9 th month
	Draft implementation framework including at least below items: <ul style="list-style-type: none"> - Roles and responsibilities of stakeholders - Road map to implement the Guideline effectively 	9 th month
	1.3 Training workshop on the guideline provided for main users	Final plan for TOT training on the guideline
	Completion report on TOT training	12 th month
1.4 Guideline and implementation framework tested in pilot vessel safe shelters	Final plan for piloting the guideline and implementation framework	12 th month
	Completion report on piloting the guideline and implementation framework	24 th month
	Final guideline	24 th month
	Final implementation framework	24 th month
1.5 Awareness on the National Guideline enhanced	Completion report on advertisement and public comments	27 th month
2.1 Database framework analysed	Inception report including at least below items: <ul style="list-style-type: none"> - Functions of the database - Analysis framework of the database - Management framework of the database - Necessary data to operate the database - Means to collect the data - Draft plan for data collection survey and pilot LCM planning exercise - Draft plan for TOT workshop on database management and LCM planning 	3 rd month
2.2 Draft database, draft management framework and draft operation guideline developed	Completion report on consultation workshop	8 th month
	Draft database	9 th month
	Draft management framework	9 th month
	Draft operation guideline	9 th month
2.3 Data collection, data input and LCM planning completed	Final Plan for data collection survey and pilot LCM planning in pilot islands	12 th month
	Completion report on data collection survey and LCM planning in pilot islands	24 th month
	Database (Final Version)	24 th month
	Management framework (Final Version)	24 th month
	Operation guideline (Final Version)	24 th month
2.4 Training workshop on database management and LCM planning provided for main users	Completion report on TOT workshops on database management and LCM planning	26 th month

Duties and Responsibilities

Under the overall guidance of Project Director and direct supervision of project manager in MHTE, the Contractor is expected to perform the following tasks working closely with UNDP Disaster Risk Management Unit:

- Undertake a comprehensive review of existing management framework of harbour project
- Develop a work plan detailing activities and steps to be undertaken to complete Project
- Design and develop the methodologies for Life-Cycle Management in design and maintenance of vessel safe shelters in Maldives, based on models and knowledge of national/international best practices
- Ensure that consideration on disaster risk reduction and climate change adaptation are deliberately and explicitly incorporated into guideline and database
- Analyse database framework including required functions, data, data collection method and analysis/management framework
- Organize stakeholders' consultation for the development of the guideline and database
- Based on consultation with stakeholders and key findings in research and field visits, draft guideline, implementation framework, database, database management framework and database operation guideline for design and maintenance of vessel safe shelters
- Conduct training of trainers for the main users both to pilot the draft guideline and database and to impart the knowledge on final guideline and database
- Test the practicability and validity of draft guideline, implementation framework, database, database management framework and database operation guideline in pilot vessel safe shelters and reflect the feedbacks to them for their finalization
- Propose and implement effective measures for enhancing awareness on the Guideline
- Suggest recommendations and roadmap to further develop the guideline and database based on the results of Project
- Submit all the deliverables as above indicated including incorporation of comments received on the draft
- In the performance of the above duties, coach and/or mentor concerned staff and personnel of the MHTE on the technical and procedural aspects of the work.
- Perform other tasks deemed necessary for the achievement of the assignment's objectives.

Qualifications

The Contractor must possess the following minimum requirements as follows:

- At least 5 years of experience in providing similar and/or related consultancy services to Governments, UN organizations, and other institutions.
- Can bring in a team of experts with specialization and extensive experience on developing Life-Cycle Management System particularly in the harbour sector
- Demonstrated experience in the field developing Life-Cycle Management System particularly in the harbour sector

- Technical and working knowledge of climate change adaptation, disaster risk management, risk reduction and development links
- Sensitivities to local culture and ability to work in a multi-cultural environment
- Background knowledge of both technical and socio-economic context of the Maldives is desirable
- Past experience with UNDP /UN/International organizations would be an asset.

Others

This Terms of Reference may be partly revised based on discussions and agreement with Project Board and the contracting party during the initial stages of the work to ensure the effectiveness and efficiency of Project.