

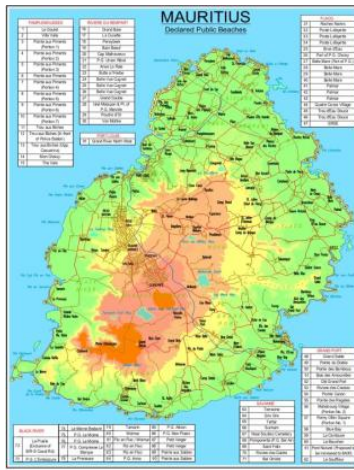


ADAPTATION FUND



# INCEPTION REPORT

## “Climate Change Adaptation Programme in the Coastal Zone of Mauritius”



04 October 2012

Hennessy Park Hotel, Ebene

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## 1.0 Introduction

Mauritius has secured a grant of **USD 9,119,240** from the Adaptation Fund for the implementation of the project “**Climate Change Adaptation Programme in the Coastal Zone of Mauritius**” over a duration of five years.

This fund is targeted to assist developing-country parties to the Kyoto protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects. As at to date **18 countries** have benefitted from the grant of Adaptation Fund and Mauritius is the **second largest beneficiary** of the Fund (behind Uruguay).

Following a series of reviews and final submission to the Adaptation Fund Board at its 15<sup>th</sup> Board Meeting on 29 September 2011, it was finally approved with the project document signed by the Ministry of Environment and Sustainable Development, Ministry of Finance and Economic Development and UNDP on 19 July 2012. The official signatories of the final project document signaled the official start date of the project.

The inception workshop was held on the 30<sup>th</sup> August 2012 at Hennessy Park Hotel, Ebene, to officially launch the project among high level Government and UN officials and stakeholders. The afternoon session involved a more in-depth technical discussions and presentations with working groups. (See Workshop Agenda, Annex 1)

The Inception Workshop is the first activity under this project and serves to assist the stakeholders to understand and take ownership of the project’s goals and objectives, as well as discuss the project’s workplans, activities, budget allocations, risks and the proposed monitoring and evaluation plan. This Report documents the proceedings and outcomes of the Workshop.

## 2.0 Background and project summary

The Intergovernmental Panel on Climate Change (IPCC) is clear in its message to the global community that climate change has become an unavoidable process. The third IPCC assessment report also stressed the fact that some countries, namely small island developing states like Mauritius, and the least developed countries in Africa were particularly vulnerable to the effects of climate change. The report also recommended that a new adaptation strategy be devised to respond to the threat of climate change.

An accelerated sea level rise, increasing storm intensity and larger storm surges will result in more coastal erosion and inundation of low lying areas. This implies that the islands of the Republic of Mauritius (RoM) will face increased risks of severe climate change impacts.

The coastal zones of Mauritius are critically important to the economy in terms of domestic and international tourism, as well as fisheries. Mauritian communities at risk of flooding from storm surges and erosion of the shoreline (those living on the coast) are the primary beneficiaries (estimated at 3,150 individuals directly benefiting from the project, but with a multiplier value of many fold). Riviere des Galets and QuatreSoeurs are not tourist beaches at all; these are communities which are located immediately on the coast. It is important to note that the coastal areas are home to about 30% of the RoM population.

The beaches, from the highwater mark down to the sea and into the lagoons, are public property. There has been a serious problem in the past with private entities, including hotel operators, undertaking their own civil works (often inappropriate for the intended function) on and near the beaches, which have in fact accelerated beach erosion in adjacent areas. The project is aiming to stop these *ad hoc* approaches by demonstrating the most technically appropriate measures for coastal protection, mostly addressing beach erosion.

It is expected that the coastal protection measures, to which tourism operators will be exposed through training sessions, information dissemination, and visits to the project sites, will lead to replication of these approaches, during and after the project, with private investment and Government co-financing for beach protection works at all the other public beaches throughout Mauritius. Apart from the beaches, other sites have experienced surges and flooding in the

recent past where the livelihood of the coastal community is also at risk. All of them need special attention, with sound adaptation policies and measures that will make these coastal sites resilient and sustainable.

## 2.1 Project objective

The **Project Objective** is: “To increase climate resilience of communities and livelihoods in coastal areas of Mauritius”.

The anticipated **project key results or outcomes** include:

1. Application of adaptation measures to protect currently vulnerable coastal communities at three priority sites, using proven technologies:

### **Mon Choisy, QuatreSoeurs and Rivière des Galets**

2. Development and implementation of an early warning system for incoming storm surges;

Given the previous experiences with storm surges on the south coast, an early warning system around each island, Mauritius, Rodrigues and Agalega will be defined such that coastal communities have at least three hours warning to safely evacuate.

3. Training and capacity building of relevant stakeholders;

Capacity development will cover a range of Ministries, NGOs, the private sector and the community at large to promote compliance with adaptation planning and coastal protection infrastructure design guidelines. Training sessions will be delivered on a regular basis over the course of the programme. Courses on coastal engineering will be developed and delivered to engineers, both in the public and private sectors.

4. Policy mainstreaming;

A National Coastal Zone Adaptation Strategy that addresses all climate perceived risks in the coastal zone of Republic of Mauritius will be determined, as well as recommendations for economic instruments to scale up adaptation in the coastal zone.

#### 5. Knowledge dissemination and management.

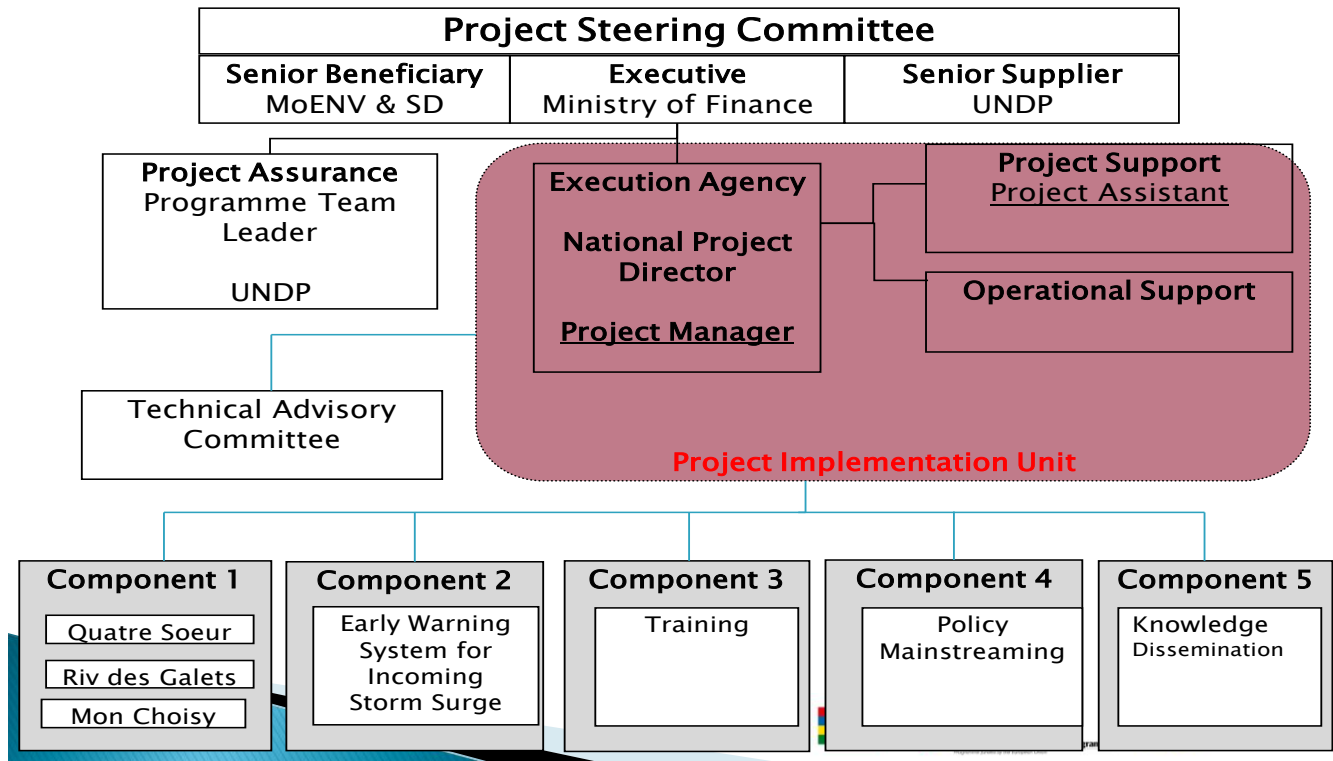
A handbook, training modules and website content capturing best coastal adaptation practices in Mauritius will be developed. A priority ranking of vulnerable coastal sites will be developed in order to guide future investments in Government of Mauritius and the private sector. Public awareness campaigns on climate change in the coastal zone will be broadcasted in the media. Interpretive signs and small-scale models of coastal protection measures will be installed at each site. The project will also have a regional dimension whereby the lessons learned from this Adaptation project will be disseminated to other countries in the Southern Indian Ocean.

### **3.0 Establishment of Project Office and Initial Activities**

The establishment of the project office and team started on July 2012 with the recruitment of the Project Manager. As the implementing partner of the project, the Ministry of Environment and Sustainable Development made a space available for the project office.

The implementation structure for the project management was established, as depicted below and in the Project Document. The Steering and Technical committees were constituted with the appointment of members with representatives of relevant ministries and organizations.

# Institutional Arrangement



The Responsible party for outcomes of the respective project component is depicted below;

Component	Responsible Party
Application of adaptation measures for coastal protection	Ministry of Environment and Sustainable Development
Early warning system	Mauritius Meteorological services
Training	Ministry of Environment and Sustainable Development / University of Mauritius
Policy mainstreaming	Ministry of Environment and Sustainable Development
Knowledge dissemination	Ministry of Environment and Sustainable Development

#### **4.0 Agenda and Participants**

The Ministry of Environment and Sustainable Development, the Implementing Partner for the project organized the inception workshop which was held on Thursday 30 August 2012 at the Hennessy Park Hotel, Ebene. Seventy-six participants from various professional fields, which included representative from stakeholder ministries, university, Non-Governmental Organization, meteorological services, and the three target Communities attended the workshop.

An outline of the programme is at **Annex 1**. A list of participants together with their contact details is at **Annex 2**.

#### **5.0 Goals & Objectives**

The Goal of the Workshop was to enable the various stakeholders to understand better the project “Climate Change Adaptation Programme in the Coastal Zone of Mauritius” as well as to get their advice and suggestions and their role in effectively implementing the project.

The specific objectives were the following:

- Create awareness among workshop participants on the threats of climate change on the coastal zone and the need to adapt and increase climate resilience of communities and livelihoods.
- Describe the project components and UNDP role and responsibilities.
- Get endorsement among the workshop participants on the project’s objectives, implementation modalities and responsibilities outputs, implementation plan as well as the project’s logical framework (risks, assumptions, and indicators), budget allocation and reporting obligations.



## 6.0 Local stakeholder consultation

Local stakeholder consultations are a basis for stakeholder cooperation and to create a local project ownership. This is a critical process for the successful implementation of the adaptation projects.

Local stakeholder consultations were held between 15 – 28 August, 2012 in the three target Communities: QuatreSoeurs, Riviere des Galets and Mon Choisy where the construction of physical coastal protection interventions are planned under component 1 of the project - *Increase adaptative capacity within relevant development and natural resource sectors.*

A process was designed to introduce the proposed project and underlying concepts of coastal adaptation, provide background information on the effects and vulnerability to climate change impacts.

The representatives from each of the community were thereafter invited to attend and participate in the inception workshop so that a participatory approach is build up from the initial stage of the project implementation. Moreso, part of the presentations and working group discussions at the workshop were conducted in creole (*widely used local language*) to ensure that the community representatives present were fully involved.

The following outcomes were expected from the local stakeholder consultations:

- Local stakeholders have a clear understanding of the project, objective, outcomes and components.
- A foundation for stakeholder cooperation, active participation and ownership of the project is established in the target areas.
- Fruitful stakeholders' participation in the Inception workshop, especially during working groups sessions.

## 7.0 Opening Ceremony

Mr **Premhans Jhugroo, Permanent Secretary**, Ministry of Environment & Sustainable Development, welcomed distinguished guests and participants for the inception workshop on behalf of the Ministry of Environment. He extended a warm welcome to Mrs Jessica Troni, the UNDP Regional Technical Adviser. He expressed his gratitude to the Adaptation Fund for the financial assistance to help the implementation of appropriate adaptation strategies and stated that such financial aid is becoming an important thrust for small island states like Mauritius to enable them to better cope with climate change impacts.

He ended with an appeal to all the representatives for their commitment and ensure that the different ministries, departments and stakeholders including NGOs participate fully in the implementation of the various components of this project.

Mr. **Simon Springett, UNDP Resident Representative** highlighted the involvement of UNDP and its eagerness as the Implementing Agency to ensure that the objectives of this project be realized. He further briefly elaborated on the specific outcomes of the project.

He also mentioned that the UNDP Country Office would ensure the project assurance and extend its assistance to develop local capacity by drawing on the resources of UNDP and their wide range of partners.

**Honourable Louis Herve Aimee, Minister of Local Government** gave its support and ensured the commitment of the local authorities and parastatal bodies falling under the ageis of his Ministry particularly the Beach Authority and Outer Island Development Corporation which would provide all their support in the implementation of the project.

He also recalled the surge events that hit the southern region of the island, Riviere des Galets in May 1987 and May 2007 and the need to undertake adequate protection measures in face of climate change to build up resilience.

**Honourable Devanand Virahsawmy, Minister of Environment & Sustainable Development** remarked the specificities of Mauritius as a highly vulnerable and densely populated Small Island Developing State. He also elaborated on the findings of the different reports published by the Intergovernmental Panel on Climate Change (IPCC) which alerted the world to the looming problem of climate change.

He highlighted the fact that with the grant of 9.1 million USD from the Adaptation Fund, this undoubtedly represents the largest Adaptation project ever implemented in the local and regional context. He stressed on the importance of putting the community at the center of the project and the opportunity for Mauritius to demonstrate innovative adaptation methods.

He also stipulated that the proposed coastal protection measures will benefit directly some 3,150 people whose jobs, houses, and families are currently threatened by coastal erosion, storm surges, and tidal flooding. He added that this project represents a very important step forward on the journey in migrating from a **vulnerable island to a resilient island state**.

He then declared the workshop open.

The inception workshop was reported in the local press 'Le Mauricien' on the 30 August 2012, at the government Information system and in the website of Acclimate <http://www.acclimate-oi.net> hosted by the Indian Ocean Commission.

A copy of the press release is at **Annex 3**

## 8.0 Presentations

Mr Nuvin Khedah, Project Manager made a presentation which covered the following:

1. A brief introduction of the project

An overview of the project was presented as stipulated in the project document to sensitise all stakeholders (*including private sector, public officials, NGOs and the community*) on the project outputs and objective.

2. The justification of implementing Adaptation projects

The participants were exposed to the actual trend of increasing sea surface temperature, sea level rise, effects of global warming and climate change. The vulnerability of the coastal zones and the livelihood of the coastal communities living in the low lying areas were also elaborated.

3. Project components and deliverables

The five components of the project were detailed indicating the corresponding activities and outputs as stipulated in the Results Framework of the project Document to assist partners to fully understand and take ownership of project. A particular attention was brought to the three project sites (*Mon Choisy, Riviere des Galets and Quatre Soeurs*) under component 1 targeted to the direct beneficiaries of the respective communities.

4. Tentative Annual Workplan and budget plan

The annual workplan and the corresponding budget plan were presented depicting the activities and main schedule of deliverables.

5. Presentations on suggested implementation structure, technical and steering committees

The membership of the Technical Committee and the Project board including the respective terms of reference was highlighted.

A copy of the presentation is attached at **Annex 4**.

**Mrs Jessica Troni**, Regional Technical Adviser explained and illustrated the process on the Adaptation Fund Board reporting procedures and the role and responsibilities of the UNDP during the implementation of the project. She further elaborated on the potential risks including environmental, political, financial, operational, and institutional risks that need to be managed during the project cycle.

A copy of the presentation is attached at **Annex 5**.

**Mr M. Heetun**, Acting Divisional Meteorologist from the Mauritius Meteorological Services made a brief presentation on the existing warning system on the cyclones and Tsunami and indicated the actual operation mode currently in place at the Meteorological services. The probable linkages with the existing warning system and the proposed storm surge warning was highlighted.

A copy of the presentation is attached at **Annex 6**

## **9.0 Working Groups Discussion**

The afternoon sessions were devoted to discussing the different outcomes and themes by working groups.

The stakeholders were briefed on the terms of reference for each Working Group (WG). The discussion and outputs thereof were the main focus of the second session of the Inception Workshop.

The participants were split up in five working groups (WG) as follows:

Working Group	Project component	Chair
WG 1	Application of Adaptation measures for coastal protection at Mon Choisy	Mr M.Desha, Environment Programme Officer, UNDP
WG 2	Application of Adaptation measures for coastal protection at Riv des Galets	Ms Poinen, Environment Officer, Ministry of Environment and SD
WG 3	Application of Adaptation measures at QuatreSoeurs	Mr S.Permala, Head of Works Grand Port/Savanne District Council
WG 4	Early Warning Systems for incoming surge	Mr Ragoonaden, Secretary NGO
WG 5	Training, Policy mainstreaming and Knowledge dissemination	Dr M. Nowbuth, Head Civil Engineering Department, University of Mauritius

The working groups, WG 1, WG 2 and WG 3 also included the representatives of the respective communities. The objective of the community consultation was to collect community perspective on the proposed technical interventions, physical viability, experiences on their current situations and livelihood and a basic understanding on the acceptance of the project by the community.

### 9.1 Total Budget and Work Plan

The proposed annual work plan was reviewed following the stakeholder consultations and team discussions. The work plan for the beginning phase of the project (2012-2013) would lay emphasis on the recruitment of the consultants, in particular for component1 which involves the physical works and carries 82% of the project expenditure. The implementation of component 2 – *Early Warning System* and component 3 – *Training* shall also be started as from Year 1.

## Total Budget and Workplan

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
	JUL 12- JUN 13	JUL 13- JUN 14	JUL 14- JUN 15	JUL 15- JUN 16	JUL 16- JUN 17
<b>Outcome 1: Increased adaptive capacity within relevant development and natural resource sectors</b>					
Output 1.1 Detailed technical assessment to inform the design of coastal protection measures	112,000				
Output 1.2 Technical design of coastal protection measures		150,000			
Output 1.3 Vulnerable physical, natural and social assets strengthened in response to climate change		685,800	3,676,575	1,353,400	
Output 1.4 Development of recommendations on how interventions in other vulnerable areas can be adjusted				150,000	
Output 1.5 Monitoring programme designed				100,000	
Output 1.6 Installation of monitoring programme					240,000
<b>Outcome 2: Reduced exposure at national level to climate-related hazards and threats</b>					
Output 2.1 Assessment report of the current sea state monitoring systems and recommendations for operational requirements of EWS	33,155				
Output 2.2 Early Warning System installed		99,550			
<b>Outcome 3: Strengthened institutional capacity to reduce risks associated with climate-induced socio economic and environmental losses</b>					
Output 3.1 Handbook on good CCA practice packaged as training modules developed		133,600	26,000	5,000	
Output 3.2 Short course on coastal engineering designed and delivered (twice during programme period)	73,000	41,600	20,000		
Output 3.3 Course on CBA of coastal adaptation measures designed and delivered (annually over 4 years)		50,000	15,000	15,000	15,000
<b>Outcome 4: Improved policies and regulations that promote and enforce resilience measures</b>					
Output 4.1 A national coastal zone adaptation strategy developed		144,000			
Output 4.2 A set of recommendation for best practice and institutional adaptation practices suitable for coastal zone		46,000			
Output 4.3 Creation of a climate change 'clearing house' to guide the climate appropriateness of development projects			72,000		
Output 4.4 Recommendation for new economic instruments developed				88,050	
<b>Outcome 5: Effective capturing and dissemination of lessons learned</b>					
Output 5.1 Handbook and website content capturing best coastal adaptation practices for Republic of Mauritius		86,000			
Output 5.2 Dissemination of lessons learned regionally			20,000	80,000	31,100
Output 5.3 Interpretive signs and small-scale models of coastal processes designed and installed at each site					135,000
Output 5.4 Public awareness campaigns designed and delivered involving the media		40,000	40,000	40,000	40,000

Output 5.5 Priority ranking of vulnerable coastal sites established to guide the order of future investments					<b>48,000</b>
Execution Costs	<b>116,000</b>	<b>119,000</b>	<b>80,000</b>	<b>88,000</b>	<b>97,000</b>
TOTAL	<b>334,155</b>	<b>1,595,550</b>	<b>3,949,575</b>	<b>1,919,450</b>	<b>606,100</b>



## 9.2 Working Group 1-3

- **(Output target: Quatre-Soeurs)**, the working group studied the proposal, as per the prodoc to set up a refuge centre at the locus of the existing community Centre. However the following observations were made

1. the building and plot size may not be adequate to cater for the targeted number (1000) of beneficiaries.
2. People would have the intuition and tendency to move upland to seek refuge in event of storm surge alert.
3. The coastal road leading to the community centre may be prone to flooding thus may compromise the use of the building during and in the aftermath of a surge event.

Accordingly, the working group made a suggestion to consider an alternative site, preferably upland, for the proposed refuge centre in lieu of the existing community centre. A multipurpose use of the building shall also be explored at design stage.

- **(Output target: Mon Choisy)**, the representatives from the community requested that public beach should not be closed for a long period of time during project implementation as this could impact the livelihoods of the economic operators.
- **(Output target: Riv des Galets)**, The working group appealed that the livelihood of the fisherman community shall not be compromised, in particular the design of the submerged wave attenuating structures shall allow navigational options for fishermen to accede to high sea.

### 9.3 Working Group 4

Following the discussions of the working group, the observations/suggestions hereunder listed were made:

- Measuring instrument at a reasonable distance to the South of the Mascarenes Islands may be warranted to monitor incoming southerly swells for a pre-warning of heavy swells 3 hour in advance. For this purpose, a wave rider buoys need to be deployed.
- There are two Wave rider buoys presently operational and maintained by the Mauritius Meteorological Services (1 km off South East coast) and Mauritius Oceanography Institute (North East Coast) respectively.
- Meteorologists and Oceanographers may warrant specialized training on storm surge formation and propagation for implementation of the Early warning system.
- The group perceived the budget earmarked (US\$ 133 705) may be inadequate taking into consideration that one wave rider buoy may cost around US\$ 60 000 or more.
- Effective and efficient communication links for the dissemination of Tropical Cyclone and Tsunami warnings are now well established in Mauritius and an Early warning system on incoming surge could be based on/integrated within the existing warning systems.
- It was also remarked that the Early warning system shall be at the seat of the Mauritius Meteorological services in lieu of Mauritius Oceanography Institute as stipulated in the Results Framework.

## 9.4 Working Group 5

The Group identified the following requirements in respect to training, policy mainstreaming and knowledge dissemination:

### a) Training

- Modules in coastal engineering may also be developed and incorporated in the course curriculum of the University of Mauritius. This would have a broader outreach and ensure a continuous learning process.
- Awareness for Policy makers
- Training for trainers, who would subsequently be involved in the training at the Community level.

### b) The preferred means of knowledge dissemination as stated by the working group are:

- TV/radio, internet, newspapers, newsletters, pamphlets, talks
- Creation of a website
- Workshops
- Create awareness on climate change as from primary school level through talks.

### c) The working group recommended that community based committees be set up for a better community outreach.

## 9.5 Monitoring and Evaluation (M&E) Framework

All the working groups commented that the Monitoring and Evaluation activities were elaborate and adequate for a comprehensive assessment of the project outputs, and progress in achieving Outcome targets. Accordingly the M&E be undertaken according to the Monitoring and Evaluation Workplan hereunder depicted, and established UNDP procedures during the project cycle.

## Monitoring and Evaluation Workplan

<b>SN</b>	<b>Monitoring and Evaluation Activity</b>	<b>Responsible parties</b>	<b>Time Frame</b>
1.	Inception Workshop	Project Manager	30 August 2012
2.	Verification of Programme results	UNDP RTA Project Manager Independent evaluations	Annually Start, Mid and End of Programme
3.	Measurement of Project progress	Project Manager and team	Annually
4.	Annual Review Report and Project Implementation Report	Project Manager UNDP RTA UNDP CO	Annually as from Y1 programme implementation.
5.	Periodic status/progress report	Project Manager and team	Quarterly
6.	Independent Mid-term evaluation (uploaded to UNDP Evaluation Resource centre)	Project Manager UNDP RTA UNDP CO External consultant	At Mid point of programme
7.	Final Evaluation	Project Manager UNDP RTA UNDP CO External consultant	At least 3 months prior to end of project implementation
8.	Project Terminal report	Project Manager UNDP RTA UNDP CO External consultant	At least 3 months prior to end of project
9.	Audit	Project Manager UNDP CO	Yearly
10.	Field Visits	UNDP RCU UNDP RTA UNDP CO Govt Agencies Local Authorities	Yearly

## 10.0 Conclusions

The workshop was successful in bringing the different stakeholders including the governmental organization, parastatal bodies, experts from the University of Mauritius, NGOs and representatives from the community of each of the project site.

The participants endorsed the different project activities, projected outputs, Outcomes and Objective targets, possible risks, and corresponding budget allocations.

The working group discussions provided a platform for the members to advocate their views to the project. It further encouraged the project ownership and secured the commitment of stakeholders for a successful project implementation.

## Annex 1

Ministry of Environment and Sustainable Development

Adaptation Fund

Climate Change Adaptation Programme in the Coastal Zone of Mauritius

### INCEPTION WORKSHOP

30 August 2012

*Venue: Hennessy Park Hotel, Ebene*

#### Programme

09.00 – 09.30	Registration of participants
09.30 – 09.35	Welcome by Mr P. Jhugroo, Permanent Secretary, Ministry of Environment & S.D
09.35 – 09.45	Address by Mr Simon Springett, UNDP Resident Representative
9.45 – 10.00	Address by Hon. Aimee Louis Hervé, Minister of Local Government & O.I
10.00 – 10.15	Address and Opening of Inception Workshop by Hon. Devanand Virahsawmy GOSK, Minister of Environment and Sustainable Development
10.15 – 10.45	Coffee Break
10.45 – 11.15	Presentation of the AFB project by Project Manager, Mr Nuvin Khedah
11.15 – 11.35	Presentation by UNDP Regional Technical Adviser, Ms Jessica Troni
11.35 – 11.55	Presentation on existing Early Warning Systems by Div Meteorologist, Mr M. Heetun
11.55 – 12.15	Discussions
12.15 – 13.15	Lunch Break
13.15 – 15.00	Working Group Discussions
	WG 1: Application of Adaptation measures for coastal protection at Mon Choisy
	WG 2: Application of Adaptation measures for coastal protection at Riv des Galets
	WG 3: Application of Adaptation measures at Quatre Soeurs
	WG 4: Early Warning Systems for incoming surge
	WG 5: Training, Policy mainstreaming and Knowledge dissemination
15.00 – 15.30	Coffee break
15.30 – 16.00	Wrap up

## Annex 2

SN	Name	Designation	Organisation	Tel No	Fax No	Email
<b><u>Members of the Parliament</u></b>						
1.	Hon. VirahsawmyDevanand, GOSK	Minister	Ministry of Environment and Sustainable Development	2111652	2119455	
2.	Hon Aimee Louis Hervé	Minister	Ministry of Local Government and Outer Islands	2102014		
<b><u>Participants</u></b>						
3.	A. Nunkoo	Chairman	Beach Authority	212 0059	212 0060	<a href="mailto:beachauthority@intnet.mu">beachauthority@intnet.mu</a>
4.	A.K. Dosieah	Divisional Scientific Officer	Ministry of Environment & SD			<a href="mailto:adosieah@mail.gov.mu">adosieah@mail.gov.mu</a>
5.	ATAWOO Alfaz	Senior Research Scientist	Agricultural Research and Extension Unit (AREU)	464 4878	464 8809	<a href="mailto:areu@intnet.mu">areu@intnet.mu</a>
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7.	Boolkah S	AFB Project Assistant	Ministry of Environment & SD			
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10	Calotte Indranee. Mrs	Representative	Riv des Galets			
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19	F. Echazar. Mrs	MFO	Ministry of Environment & SD			<a href="mailto:fechazar@mail.gov.mu">fechazar@mail.gov.mu</a>
20	FELIX Marie Doris. Mrs	Mon Choisy	Trou Aux Biches			
21	Gujadhur	Senior Tourism Planner	Ministry of Tourism and Leisure	210 3640	208 6776	<a href="mailto:mtou@mail.gov.mu">mtou@mail.gov.mu</a>
22	Gungah Y. Rai	Technical Officer	Beach Authority	212 0059	212 0060	<a href="mailto:beachauthority@intnet.mu">beachauthority@intnet.mu</a>
23	H. Cauleechurn	Inspector of Police	National Coast Guard	208 3931 724 9314	212 2773 212 2760	<a href="mailto:cauleehas@yahoo.com">cauleehas@yahoo.com</a>
24	H. Ramdour. Ms	Environment Officer	Ministry of Environment & SD	211 3190	210 6687	<a href="mailto:hramdour@mail.gov.mu">hramdour@mail.gov.mu</a>
25	Heetun Bye Muslim	Ag Director	Meteorological Services	6861031		<a href="mailto:meteo@intnet.mu">meteo@intnet.mu</a>
26	Idoo. F	Financial Operations Officer	Ministry of Environment & SD	6840213 2134246		
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## ANNEX 3

### (Press Release)

**GIS - August 31, 2012:** No nation, however big or small, wealthy or poor, can escape the impact of climate change, cautioned the Minister of Environment and Sustainable Development at the opening yesterday of an Inception Workshop on Climate Change Adaptation Programme in the Coastal Zone of Mauritius at Hennessy Park Hotel, Ebène.

The Climate Change Adaptation Programme is financially supported by the Adaptation Fund Board which has been set up under the Kyoto Protocol of the United Nations Framework Convention on Climate Change. Out of eighteen countries, Mauritius is the second largest beneficiary after the Uruguay with a grant of Rs 275 million.

With regard to the accelerated erosion around the coastal zones in Mauritius, Minister DevanandVirahsawmy, pointed out that these sites need special attention, with sound adaptation policies and measures that will render them resilient and sustainable. In the wake of the findings of the Fourth Assessment report, the Ministry is implementing the project “Climate Change Adaptation Programme in the Coastal Zone of Mauritius”, he said.

The objective of the programme is to increase climate resilience of the communities and reinforce their livelihoods in the coastal areas, up to year 2060, through the following interventions: application of adaptation measures to protect currently vulnerable coastal ecosystem and community features at three priority sites - Mon Choisy, QuatreSoeurs and Rivière des Galets; development and implementation of an early warning system for incoming surges; and training and capacity building of relevant stakeholders.

The programme will also focus on the development and the application of new approaches and tools to resolve specific vulnerability issues in the coastal zone. The overall approach is to work from the level of technical solutions at specific coastal sites to the policy and regulatory level.


Future replication of coastal adaptation measures will be supported by new policies, and guidelines. On that score, the coastal communities will be empowered to become increasingly resilient to climate change and be better prepared to protect their livelihoods, said the Minister.

He recalled that the proposed coastal protection measures will benefit directly some 3 150 people whose jobs, houses, and families are currently threatened by coastal erosion, storm surges, and tidal flooding.

## Annex 4

# WELCOME


Climate change Adaptation programme in the coastal zone of Mauritius  
Adaptation Fund Board



## AGENDA


- Objective of Inception workshop
- Why Adaptation ?
- Project Overview/outcomes
- Communication strategy
- Budget Allocation
- Project Progress
- Annual workplan/budget

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Adaptation Fund Board




## Objective of Inception Workshop

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- Sensitise all stakeholders (*including private sector, public and relevant NGO*) on the project output
- Assist partners to fully understand and take ownership of project
- Clarify roles and responsibilities of all project organisational structures
- Review and agree on indicators, targets and means of verification
- Recheck Assumptions and Risks
- Overview of Reporting, Monitoring and Evaluation Workplan
- Validation of Annual Workplan/Disbursement schedule

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## Why Adaptation ?

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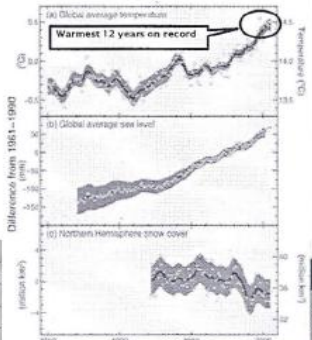
## IPCC Conclusions

Warming of the climate system

Increasing in global average air and ocean temp

Rising global average sea level

Reductions of snow and ice



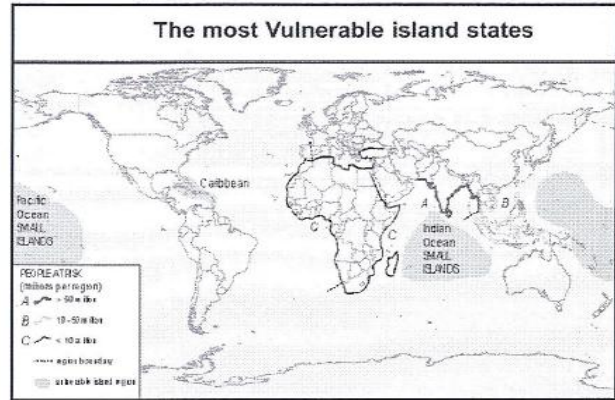
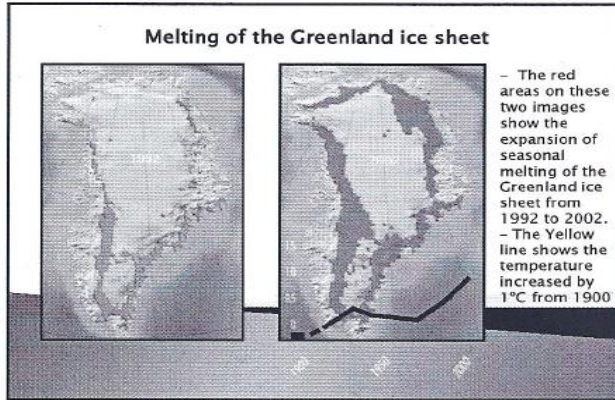
Difference from 1961-1990 (mm)

(a) Global average temperature

(b) Global average sea level

(c) Northern Hemisphere snow cover

(million km<sup>2</sup>)



Sector-Based Adaptation			
Affected Sectors	Climate Stressor	Climate Vulnerability	Adaptation Strategies
Water Resources	<ul style="list-style-type: none"> <li>Changes in precip.</li> <li>Extreme events</li> </ul>	<ul style="list-style-type: none"> <li>Decreased water supply</li> <li>Increased flooding</li> </ul>	<ul style="list-style-type: none"> <li>Create water markets</li> <li>Improve flood control</li> </ul>
Human Health	<ul style="list-style-type: none"> <li>Increased air temp.</li> <li>Extreme events</li> </ul>	<ul style="list-style-type: none"> <li>Vector-borne illness</li> <li>Heat-related health effects</li> </ul>	<ul style="list-style-type: none"> <li>Designate "cooling centers"</li> <li>Vector-borne surveillance</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>Changes in precip.</li> <li>Sea level rise</li> </ul>	<ul style="list-style-type: none"> <li>Drought</li> <li>Salt-water intrusion</li> </ul>	<ul style="list-style-type: none"> <li>Plant salt tolerant crops</li> <li>Drought management</li> </ul>
Terrestrial Ecosystems	<ul style="list-style-type: none"> <li>Changes in precip.</li> <li>Increased air temp.</li> </ul>	<ul style="list-style-type: none"> <li>Disease, Fire</li> <li>Species shifts</li> </ul>	<ul style="list-style-type: none"> <li>Fire mgmt. and control</li> <li>Invasive species mgmt</li> </ul>
Growth & Infrastructure	<ul style="list-style-type: none"> <li>Changes in precip.</li> <li>Sea level rise</li> </ul>	<ul style="list-style-type: none"> <li>Increased population growth</li> <li>Increased flooding</li> </ul>	<ul style="list-style-type: none"> <li>"Smart" site and building design</li> <li>Retrofit storm water mgmt.</li> </ul>
Coastal Zone	<ul style="list-style-type: none"> <li>Sea level rise</li> <li>Extreme events (surge, ...)</li> </ul>	<ul style="list-style-type: none"> <li>Submergence of low-lying lands</li> <li>Increased coastal flooding</li> </ul>	<ul style="list-style-type: none"> <li>Protect coastal infrastructure and livelihood</li> </ul>

### Adaptation Strategy

► The IPCC identifies three standard strategies of coastal adaptation to sea level rise:

- managed retreat** (move landward to higher ground),
- accommodate** (stay in the same location but make adjustments, e.g., elevate buildings on piles), and
- protect** (employ various hard structures such as seawalls, bulkheads, groins, and **breakwaters** or use soft measures such as beach nourishment, mangrove replanting, and preservation of coral reefs).

**Ban Ki Moon – UN Secretary General**

“..we know enough to act; if we do not act now the impact of climate change will be devastating; we have affordable measures and technologies to begin addressing the problem right now; but what we do not have is time”.

**HENCE THE TIME TO ACT IS NOW**



# Project Components

Climate change Adaptation programme in the coastal zone of Mauritius  
Adaptation Fund Board

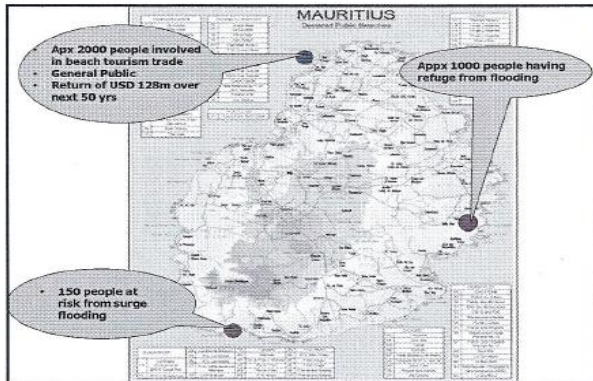


## Component 1

Application of Adaptation measures for coastal protection at three coastal sites:

- Mon Choisy,
- Riviere des Galets,
- Quatre Soeurs

Climate change Adaptation programme in the coastal zone of Mauritius  
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## Chart of actions

- Detailed technical assessment of each site
- Technical design and costing of coastal protection measures.
- Implementation of coastal protection works
- Analysis of data and develop recommendation on replicability to other vulnerable sites
- Design a monitoring programme

Climate change Adaptation programme in the coastal zone of Mauritius  
Adaptation Fund Board



Mon Choisy

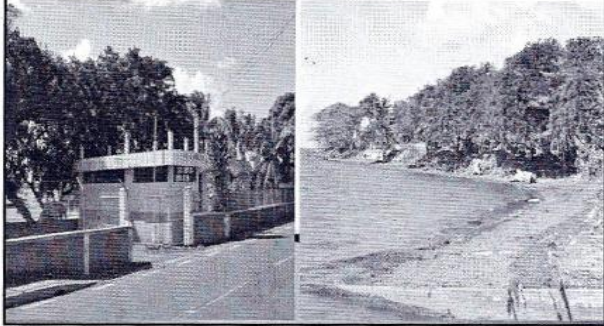


Mon Choisy

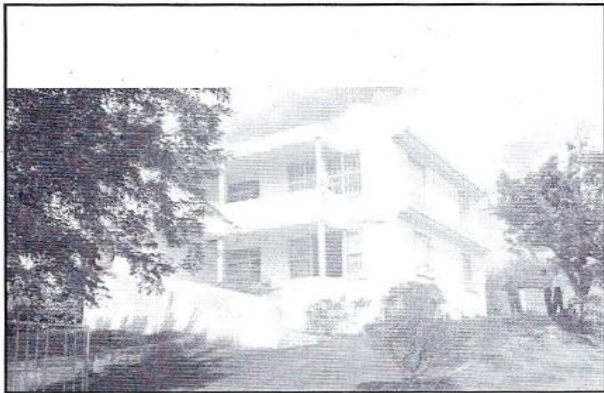
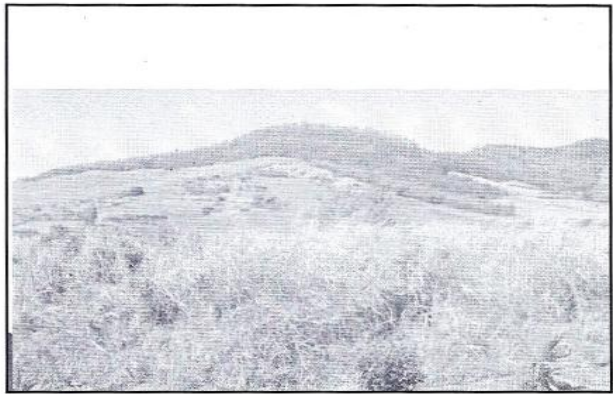




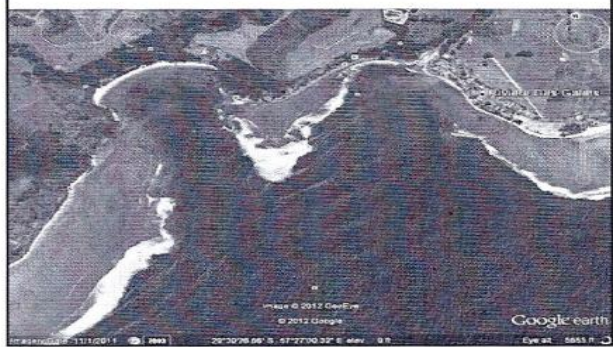
Quatre Soeur

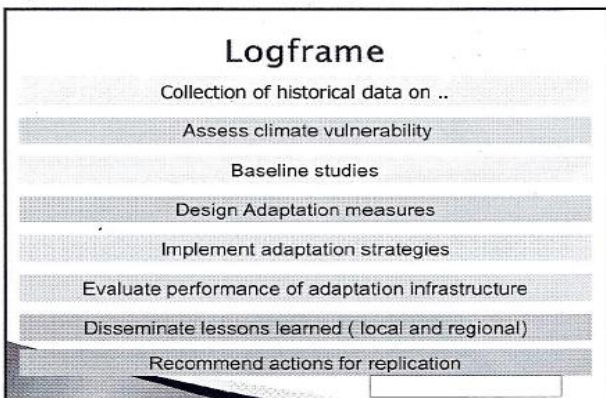
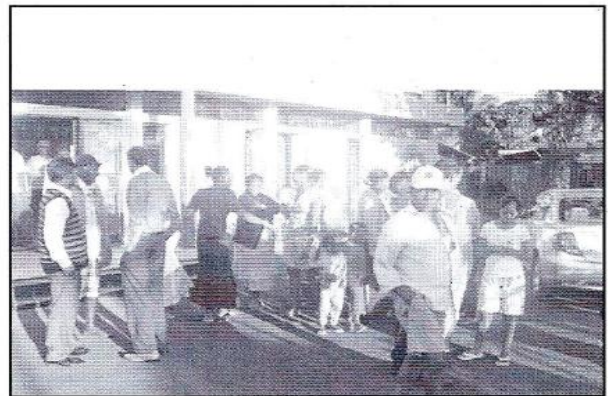
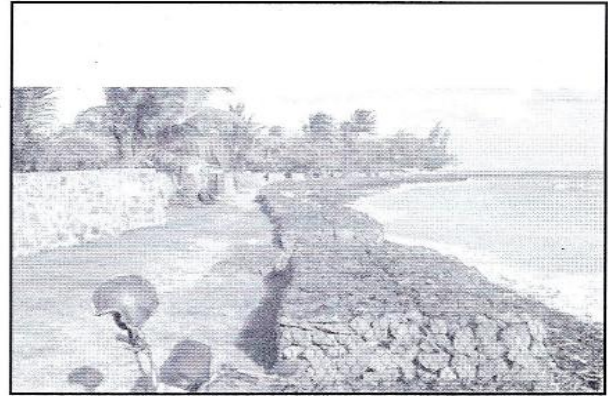
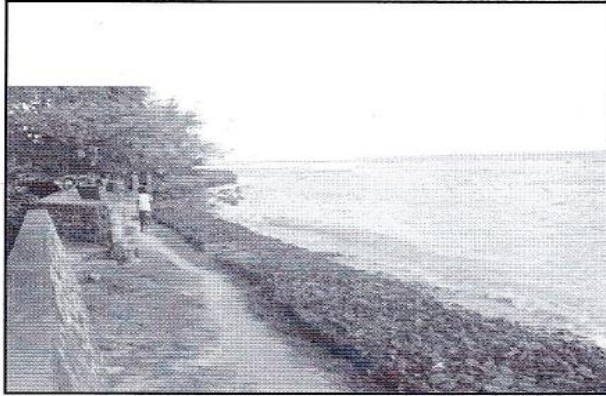


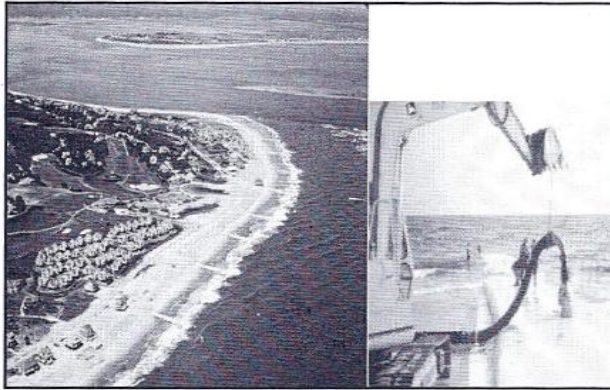
Local stakeholder consultation at Quatre Soeurs



Riviere des Galets







## Component 2

### Early warning system for incoming storm surge

This component will focus on development of an early warning system for incoming storm surge manned on 24hrs a day basis such that the coastal communities in ROM are able to safely evacuate prior to future storm surge



## Chart of actions

- ❑ Assessment of the current sea state monitoring systems
- ❑ Definition of required critical parameters and operational requirements for an early warning system.
- ❑ Implement the early warning system *(to link with existing early warning system for cyclones)*
- ❑ Establish communication linkages established from the level of NCG Headquarters down to the coastal communities.



## Component 3

### Training

- ❑ Strengthen institutional capacity to reduce risks associated with climate-induced losses
- ❑ Capacity building for ongoing replication of effective coastal adaptive measures by both the Government and private sector



## Chart of actions

- ❑ Handbook on Coastal Adaptation for coastal communities, relevant Government agencies, NGOs and private sector (e.g hotel operators)
- ❑ Training sessions for NGOs and CBOs
- ❑ Short course on Coastal Engineering
- ❑ Specialized course on Cost-Benefit Analysis of coastal adaptation measures



## Component 4

### Policy mainstreaming

Improve policies and regulations that promote and enforce resilience measures

#### Outcome:

National Coastal Zone Adaptation Strategy  
Creation of one "clearinghouse" for climate change

Climate change Adaptation programme in the coastal zone of Mauritius  
Adaptation Fund Board



## Component 5

### Knowledge Dissemination and Management.

#### Outcome:

Access to public information on climate change effects in the coastal zone

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## Chart of actions

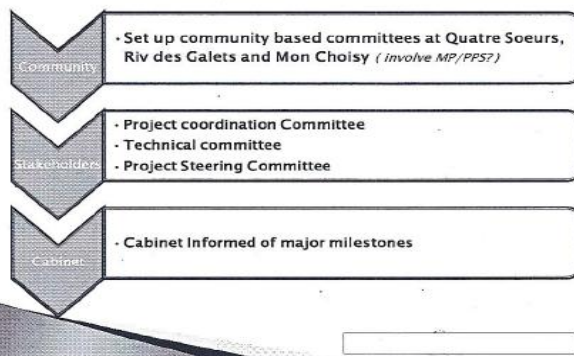
- Regional Dissemination of lessons learned from the programme
- Small-scale models of coastal processes designed and installed at each site
- Public awareness campaigns on climate change in the coastal zone involving the Mauritian media (TV, radio, Internet).
- Priority ranking of vulnerable coastal sites established, to guide the order of future investment by the Government of Mauritius and the private sector.

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## Communication strategy

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## Stakeholder participation

Coastal Protection	Early warning system	Training	Policy mainstreaming	Knowledge dissemination
PMO	PMO (NCG)	PMO		
MoESD	Met services	MoESD/Uni of Mtius	MoESD	MoESD
MoFisheries	MoESD	MoESD	Mo Tourism	Uni of Mtius
Met services	Met services	Met services	MoLG	MoLG
MOI	MOI	MOI	MoH&L	MoH&L
MPI	MPI	MPI	MPI	MPI
Beach Authority	MoLG	Beach Authority	Beach Authority	Beach Authority
DCN/GPS DC	DCN/GPS DC	DCN/GPS DC	DCN/GPS DC	DCN/GPS DC
MoFED		MoFED	MoFED	MoFisheries
MoH&L		MoFisheries	MoFisheries	NGO
		NGO		CBO
		CBO		MoFisheries
				IOC

### Constitution of committees

Committee	Members	Chairmanship
Project steering committee	MoESD, UNDP, PMO (NCG), UoM, Met services, MOI, MPI, Beach Authority, DCN/GPS DC, MoFED, MoFisheries, MoLG, MoH&L, MoTourism, AHRIM	Permanent Secretary
Project Coordination committee	Inhouse ( Director; D.Directors; PAS Mr P, AS, Mr K; CPI, ICZM & CC divisions)	Permanent secretary
Technical committee	MoESD, UNDP, NCG, UoM, Met services, MOI, MPI, Beach Authority, DCN/GPS DC, MoFisheries, MoLG, MoH&L, MoTourism.	D.Director, Mr M
Community based committee	(PPS/ MP), MoESD, Village councillors, CBO, fisherman, economic operators, farmers, CAB , Communication cell...	Project Manager

## Budget Allocation

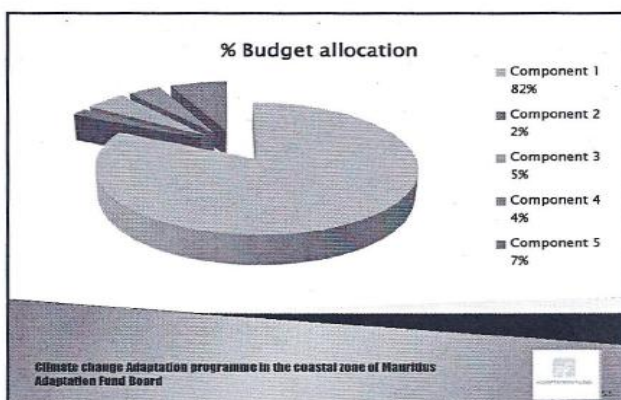
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Project Implementation cost	USD 7,004,830
Project Execution cost	USD 500,000
Project cycle management fee charged by UNDP (8.5% of programme cost)	USD 714,410
<b>Total project cost</b>	<b>USD 9,119,240</b>

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board

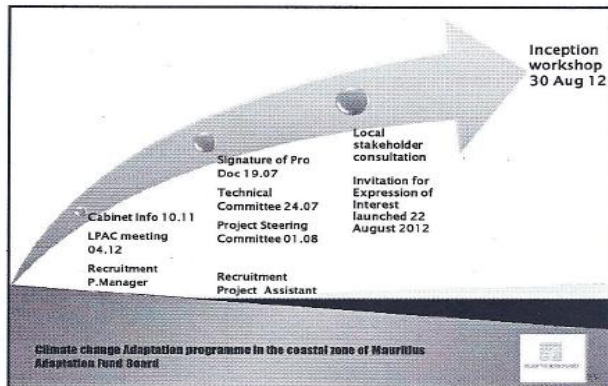
Component	Budget allocation	
1. Coastal protection measures	USD 6,465,700	(Rs 193 m)
2. Early warning	USD 133,705	(Rs 4 m)
3. Policy mainstreaming	USD 394,025	(Rs 12 m)
4. Training	USD 350,050	(Rs 10 m)
5. Knowledge dissemination	USD 561,350	(Rs 17 m)

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board



## Project Progress

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board



## Risk Assessment

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board

- Procurement procedures & requirements (procurement requirements/administrative burden even its for transparency purposes)
  - Integrating government departments ,NGOs, institution and community org in project to increase outreach to local communities.
  - Fluctuation in exchange rate
  - Representations from the fisherman community regarding works at sea
  - Climatic conditions hampering progress of work at sea
  - Navigational issues in respect to submerged breakwater from operators involved in nautical activities
- Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board

## Budget plan

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board

### Taxation

The project shall be subject to the following taxation:

- Value Added Tax
- Income Tax (Tax deduction at Source)
- Excise duties on procurement of equipment

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board

**Rate of tax deduction at source**

The rate of tax deduction at source for the different types of payments is -

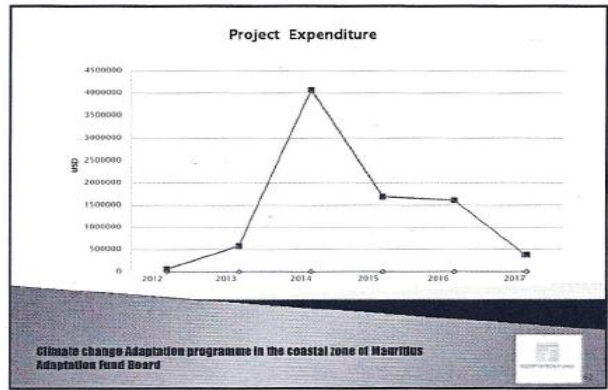
Nature of payment	Rate of tax (%)
Interest	15
Royalties for Resident	10
Royalties for Non Resident	15
Rent	5
Payments to providers of specified services	3
Payments to contractors and sub-contractors	0.75

Climate change Adaptation programme in the coastal zone of Mauritius Adaptation Fund Board

### Project Budget

Project Implementation Cost (PIC)	USD 7,904,830
Deduct VAT @ 1.5%	USD 1,185,724
TDS @ 3% (consultants) <i>(estimated 12% of PIC)</i>	USD 35,570
@ 0.75% (contractors)	USD 50,400
	(USD 1,270,000)
Actual cost of implementation	USD 6,635,000

Climate change Adaptation programme in the coastal zone of Mauritius  
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## Thank You

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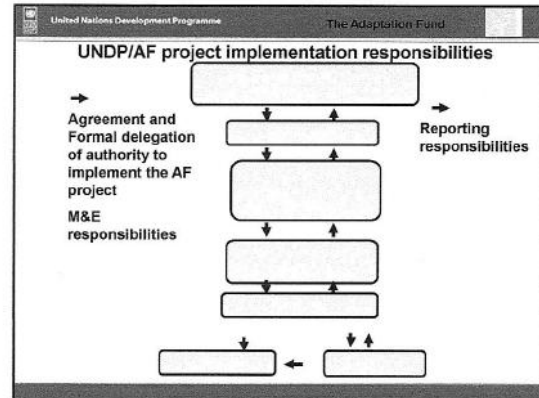
## Annex 5

United Nations Development Programme The Adaptation Fund

### UNDP-AF Project Implementation Requirements

CLIMATE CHANGE ADAPTATION PROGRAMME  
IN THE COASTAL ZONE OF MAURITIUS

Jessica Troni, Regional Technical Advisor, CC Adaptation



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### The Adaptation Fund

The Adaptation Fund  
Available: \$205-244m

Funding Approvals:  
\$165m (25 countries)

2010-2014 Expectation  
\$317-434m

- Established by the Parties to the Kyoto Protocol (UNFCCC)
- Key priority: to finance **concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol.**
- Source of funding: international levy - financed with 2% of the Certified Emission Reduction (CERs) issued for projects of the Clean Development Mechanism (CDM) and other sources of funding.
- Two modalities for accessing resources: National Implementing Entity (NIE) or Multilateral Implementing Entity (MIE)

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### UNDP project assurance role: prodoc preparation

#### Identification, Sourcing and Screening of Ideas

- Engage in upstream policy dialogue related to a potential application to the AF.
- Verify soundness and potential eligibility of identified idea for AF.

#### Development & preparation

- Source technical expertise in line with the scope of the project/programme.
- Verify technical reports and project conceptualization.
- Provide detailed screening against technical, financial, social and risk criteria and provide statement of likely eligibility against AF requirements.
- Respond to information requests, arrange revisions etc.
- Obtain clearances from AF.

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### The global carbon market

- Emissions Trading Scheme (ETS) of the European Union (EU): 97% share of global carbon market. Carbon market grew to US\$176 billion in 2011.
- Carbon markets are presently dominated by a long-term oversupply of CERs; historic low prices in the carbon market in February 2012
- 5 new cap-and-trade schemes: Australia, California, the Republic of Korea, Mexico and Quebec, Canada
- China: largest source of contracted CERs, African countries: accounted for 21 percent of post-2012 CERs contracted during 2011.
- Average price of €4.37 per ton

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### UNDP project assurance role: implementation

- Technical support in preparing TORs and verifying expertise for technical positions.
- Participate, guide and train project teams on setting up operational plan for implementation of the project during inception phases of the approved project.
- Verification of technical validity / match with AF expectations of inception/evaluation report.
- Provide technical support, participation as necessary during project activities.
- Provide troubleshooting support if needed.
- Undertake a minimum of one technical support and oversight visit per year.
- Undertake technical analysis, validate results, compile lessons.
- Disseminate technical findings



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### Agreement – project implementation

- The implementing partner (MOESD) shall be responsible for the overall management of the project, including all financial, monitoring and reporting requirements.
- Implementing partner shall carry out its obligations in accordance with :
  - AF Operational Policies & Guidelines
  - Implementing Partner standard practices and procedures
  - NB: Performance-based disbursement rule will apply

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## 2. Monitoring Progress

- Logframe/ Results Framework:
  - Developed during the project design
  - Refined and finalized at Inception Phase and reported in Inception Report;
- Annual Progress Report (Annual Performance Report)
- Quarterly operational reports
- Field visits from UNDP CO and UNDP/Regional Office;
- Independent Evaluations (Mid-term and Final); Final Audited Financial Statement; and Project Completion Report delivered within 6 months after project completion.

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### UNDP/AF project implementation responsibilities

- Executing Agency:** the overall ownership and responsibility for programme results at the country level.
- Implementing partner:** The government institution responsible and accountable for managing the project and achieving the project results as well as for progress reporting.
- Responsible Party:** Entities selected to purchase goods or provide services using the project budget.
- Implementing Agency:** UNDP – provides project assurance and, if requested, direct project services.

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### Annual Performance Report

- Basic Data**
- Financial Data:** expenditures, planned disbursements
- Procurement Data:** data on the call for proposals, the number of contracts issued, and the number of bidders.
- Project/programme Risk**
- Project/programme Rating**
- Results Framework Tracker:**
- Qualitative Questions and Lessons Learned**

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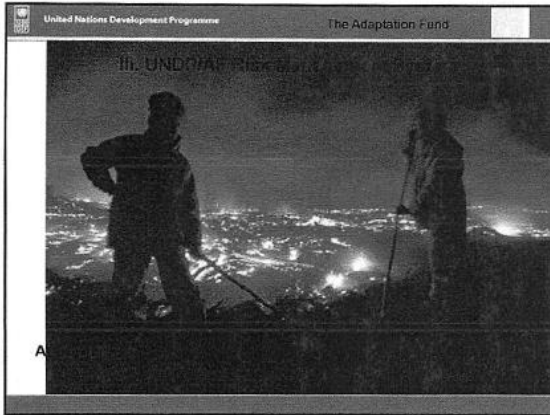
### 1. ADAPTIVE MANAGEMENT - What is it?

- Project is adaptive when it anticipates challenges and responds effectively
- Focus on "results":
  - Progress towards impact indicators
  - Achieving sustainable change
- The "process" should change to take account of:
  - New risks or change in risk rating
  - Monitoring results (current strategy not working)
  - Situation changes
  - New opportunities

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### 2.1. Logframe – Template used in UNDP/AF projects

Project Strategy	Objectively verifiable indicators				
	Indicator	Baseline value	Target (EOP) value	Sources of verification	Risks and Assumptions
Objective Should be only one objective	Impact on community resilience to climate shocks / water stress	At submission projects should have this value	At submission projects should have this value	Where do we look to check that the targeted values are achieved?	External conditions which must be in place to achieve the next level.
Outcome 1	Shows increased adaptive capacity				
Outcome 2	Shows reduced vulnerability				
Outcome 3	Shows improved water services				



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## 2. FINANCIAL

External: interest rates, exchange rate fluctuations, etc;  
Internal: co-funding difficulties; financial mechanisms

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## II. RISK PAGE

- SEVEN STANDARD RISK CATEGORIES – all projects should monitor

- ENVIRONMENTAL
- FINANCIAL
- OPERATIONAL
- ORGANIZATIONAL
- POLITICAL
- REGULATORY
- STRATEGIC
- OTHER

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## 3. OPERATIONAL RISKS

- Complex design
- Ineffective Management
- Professional negligence
- Human error/incompetence
- Safety being compromised
- Infrastructure failure
- Poor monitoring and evaluation
- Slow delivery

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## 1. ENVIRONMENTAL RISKS

Natural disasters

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## 4. ORGANIZATIONAL RISKS

Institutional arrangements. Institutional / Execution capacity. Implementation arrangements. CO capacity

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**5. REGULATORY RISKS:**  
 New unexpected regulations, policies. Critical policies or legislation fails to pass or progress in the legislative process

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**FOR EACH RISK IDENTIFIED WE NEED A MANAGEMENT RESPONSE**

- Strengthened supervision – more field visits; more frequent reporting;
- Adjustments to project strategy
- Changes to implementation arrangements
- Changes in budget allocation
- Temporary interruption
- Termination

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**6. POLITICAL RISKS**

- Government commitment
- Political will
- Political instability.
- Change in government
- Armed conflict and instability.
- Adverse public opinion/media intervention

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**Thank you!!!**

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**7. STRATEGIC RISKS**

**Partnerships failing to deliver**

## Annex 6

### Mauritius Meteorological Services

#### Early Warning Systems in the Republic of Mauritius

B. Muslim Heetun  
Ag. Div. Meteorologist

Hennessy Park Hotel, Ebene  
30 August 2012

### Daily Regular Bulletin

- General Situation – system influencing the local weather
- Expected weather
- Wind
- Sea state
- Temperature
- Tides

### State of the sea / État de la Mer

Condition (English)	État (French)	Height/ Hauteur (metres)
Calm	Calme	0 – 0.5
Slight	Peu Agitée	0.5 – 1.25
Moderate	Agitée	1.25 – 2.5
Rough	Forte	2.5 – 4.0
Very Rough	Tres Forte	4.0 – 6.0
High	Grosse	6.0 – 9.0
Very High	Tres Grosse	9.0 – 14.0
Phenomenal	Enorme	14 +

### Early warnings

- Tropical Cyclones
- Torrential Rain
- High Waves
- Tsunami
- *Strong Winds, Cold Surge*

### Tropical Cyclone

- Class I : issued 36-48 hours before Mru/Rod is likely to be affected by gusts reaching 120 km/hr
- Class II : issued as far as practicable 12 hours of daylight before occurrence of gusts of 120 km/hr
- Class III : issued as far as practicable 6 hours of daylight before advent of gusts of 120 km/hr
- Class IV : issued when gusts of 120 km/hr have been recorded in some places and are expected to continue
- Termination: no longer any risk of gust exceeding 120 km/hr

### Tropical Cyclone Bulletin

- **Serial No. and time of issue**
- **Class of Warning**
- **Name and Intensity of system**
- **Position (Latitude, longitude, distance from islands)**
- **Movement (Direction & speed in Km/hr)**
- **Expected change in conditions( wind, rain, sea, etc)**
- **Advise on Precautions**
- **Time of Next Bulletin**

### Frequency & Dissemination of Bulletins

- Class I & Class II : at 6 hour intervals
- Class III : Every 3 Hours
- Class IV : Adhoc basis

### High Waves/Swells

- High energy waves usually generated far away in the ocean
- Affects activity at sea
- Can occur at any time of the year but more frequent in winter
- Affects the lagoons and the coasts
- Can cause raz de marée

### High Waves

- Synoptic Pattern, Weather systems, Products from Numerical Models , etc
- Special Communique issued as early as possible before likelihood of occurrence
- Targets general public, fishermen and sea goers in particular
- Average height of waves & Expected time of occurrence and duration
- Regions likely to be affected
- Precautions
- Monitor progress of waves (wave rider, observations from ships & other stations

### Tsunami

- Messages from PWTC, JMA and RTSP (India, Indonesia, Australia)
- Tsunami Information Bulletin – earthquake occurred but no tsunami
- Local Tsunami Watch Bulletin – earthquake giving rise to local tsunami
- Regional Tsunami Watch Bulletin – earthquake giving rise to regional tsunami
- Indian Ocean Wide Tsunami – strong earthquake giving rise to ocean-wide tsunami which is moving towards the Southwest Indian Ocean

### Tsunami

- Tsunami Information - informs about occurrence of an earthquake and advise on potential threat to generate a tsunami
- Tsunami Watch Bulletin – tsunami alert without confirmation of a destructive tsunami
- Tsunami Warning Bulletin – imminent threat of a tsunami, 5-7 hours lead time, depending upon location
- Termination – significant tsunami waves no longer being observed.

### Dissemination of Bulletin/Information

- Prime Minister
- DPM, VPM's
- Secretary to Cabinet
- Ministries, Police, SMF, NCG, To all stakeholders as listed in the CONDS
- Media (Electronic & Press)
- Website
- Live intervention on radios/TV

## Photo Gallery



**Speech by Mr S. Springett, UNDP Resident Representative**



**Speech by Hon Herve Aimee, Minister of Local Government and Outer Island**



**Speech by Hon Devanand Virahsawmy, Minister of Environment and Sustainable Development**



**From Left to Right**

**Mrs. D. Lan Ng, National Project Director, Director of Environment**

**Hon. Aimee Louis Hervé, Minister of Local Government & Outer Islands.**

**Hon. Devanand Virahsawmy, GOSK, Minister of Environment and Sustainable Development**

**Mr Simon Springett, UNDP Resident Representative**

**Mr P. Jhugroo, Permanent Secretary, Ministry of Environment and Sustainable Development**



**Workshop Group Photo**



**Workshop participants**





**Presentation by Mr M.N. Khedah, AF Project Manager**



**Presentation by Ms Jessica Troni, UNDP Regional Technical Adviser**



**Presentation by Mr M. Heetun, Ag Divisional Meteorologist**



**Working Groups Discussions**