

**THE REPUBLIC OF MAURITIUS
MINISTRY OF ENVIRONMENT, SUSTANAIBLE
DEVELOPMENT, AND DISASTER AND BEACH
MANAGEMENT (MOESDDBM)**

**THE PROJECT FOR CAPACITY
DEVELOPMENT ON CLIMATE
CHANGE MEASURES
IN THE REPUBLIC OF MAURITIUS
PROJECT COMPLETION REPORT**

June 2016

**JAPAN INTERNATIONAL COOPERATION
AGENCY**

KOKUSAI KOGYO CO., LTD.

Location of the Study Area



Detail Map



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Abbreviations

Abbreviations	Proper Name
AAP	African Adaptation Programme
BLP	Building and Land Use Permit
CCD	Climate Change Division
C/P	Counterpart
DRR	Disaster Risk Reduction Strategic Framework and Action Plan
ESA	Study of Environmentally Sensitive Areas
GCM	Global Climate Model
GIS	Geographic Information System
GPS	Global Positioning System
ICZM	Integrated Coastal Zone Management
I&ED	Information and Education Division
IOC	Indian Ocean Commission
JAMSTEC	Japan Agency of Marine-Earth Science and Technology
JET	JICA Expert Team
JICA	Japan International Cooperation Agency
LAVIMS	Land Administration, Valuation, Information and Management System
MHL	Ministry of Housing and Lands
MOESDDBM	Ministry of Environment, Sustainable Development, and Disaster and Beach Management (changed from MoESD)
MOI	Mauritius Ocean Institute
NCCAPF	National Climate Change Adaptation Policy Framework
NDRRMC	National Disaster Risk Reduction and Management Centre
NGO	Non-Governmental Organization
NILIM	National Institute for Land and Infrastructure Management, Japan
PDCA	Plan-Do-Check-Action
PDM	Project Design Matrix
PPG	Policy Planning Guideline
R&D	Research and Development
R/D	Record of Discussion
RDA	Road Development Authority
SIDS	Small Island Developing States
S/C	Steering Committee
T/C	Technical Committee
UNDP	United Nations Development Programme
UPS	Uninterruptible Power Supply
VA	Vulnerability Assessment
VCA	Village Council Area

1 Basic Information of the Project

1.1 Country

Republic of Mauritius

1.2 Title of the Project

The Project for Capacity Development on Climate Change Measures

1.3 Duration of the Project

The duration of the Project is two years from the date when the expert team arrives.

1.4 Background

Mauritius is highly vulnerable and fragile to adverse effects of climate change, such as sea-level rise, reduced rainfall, and increasing and more intense extreme weather events. In these respects, Government of Mauritius (hereinafter referred as “GoM”) has made climate change adaptation a high priority. In order to prepare for possible adverse risks of climate change, the GoM has recently launched the “National Climate Change Adaptation Policy Framework (NCCAPF)”, which is one of the outcomes of the Africa Adaptation Programme (AAP) funded by the Government of Japan (GoJ) through the United Nations Development Programme (UNDP). This is the first comprehensive policy framework for climate change in GoM.

The main objectives of the said framework are as follows: enhance the resilience of key economic sectors, namely water, agriculture and coastal management; mitigate risks and damages to human settlements and infrastructure; and avoid the loss of lives due to the extreme climatic events. At the same time, mainstreaming climate change into core development policies, strategies and plans is duly planned in the framework in order to avoid, minimize and adapt to the negative impacts of climate change. Due to sea-level rise and extreme weather events such as intense cyclones, proper countermeasures against them need to be taken particularly for coastal protection and management. Since JICA and GoM have already implemented the project for the capacity development on coastal protection and rehabilitation, the priority will be given to develop sectoral guidelines on climate change adaptation for coastal protection and management.

The framework also emphasizes the need to ensure that society at all levels and in all sectors is adequately informed on climate change and its implications. In this context, the Ministry of Environment, Sustainable Development, Disaster and Beach Management (hereinafter referred as “MOESDDBM”) has formulated a Climate Change Information, Education and Communication Strategy and Action Plan meant to inform, educate, empower and engage all citizens in combating climate change. It aims to enhance the awareness and understanding necessary to create a climate conscious culture for achieving a sustainable future. The target is to sensitize 400,000 citizens by the year 2016 and 1 million citizens by the year 2020.

The 3 strategic objectives of the Action Plan are namely to enhance:

- (i) Public access to information on climate change
- (ii) Public awareness raising and education on climate change; and
- (iii) Public participation and engagements in addressing and responding to climate change.

In line with the framework, a request was made to JICA to support MOESDDBM in developing sectoral guideline/policies on climate change adaptation, as well as enhancing public awareness for climate change through various education methods. Based on the request from the GoM, both parties agreed to implement the Project.

1.5 Overall Goal and Project Purpose

Overall Goal: The implementation of climate change adaptation measures is enhanced

Project Purpose: The capacity of GoM to deal with climate issues is strengthened

1.6 Implementing Agency

Ministry of Environment, Sustainable Development, Disaster and Beach Management
(MOESDDBM)

2 Result of the Project

2.1 Result of the Project

2.1.1 Input by Japanese Side

a. Dispatch of Experts

Table 2.1 Input by the Japanese Side (Planned and Actual)

Experts	Planned	Actual
Kensuke ICHIKAWA (Chief Advisor / Climate Change & Disaster Prevention Policy)	14 th Jul ~ 12 th Aug 2014 (30 days)	14 th Jul ~ 12 th Aug 2014 (30 days)
	13 th Nov ~ 12 th Dec 2014 (30 days)	13 th Nov ~ 13 th Dec 2014 (31 days)
	9 th Jan ~ 7 th Feb 2015 (30 days)	9 th Jan ~ 7 th Feb 2015 (30 days)
	1 st Oct ~ 30 th Oct 2015 (30 days)	12 th Oct ~ 10 th Nov 2015 (30 days)
	22 nd Mar ~ 20 th Apr 2016 (30 days)	15 th Jan ~ 26 th Jan 2016 (12 days)
24 th Mar ~ 9 th Apr 2016 (17 days)		
Yoshimizu GONAI (Vulnerability Analysis / GIS)	14 th Jul ~ 12 th Aug 2014 (30 days)	14 th Jul ~ 31 st Jul 2014 (18 days)
	5 th Nov ~ 19 th Dec 2014 (45 days)	5 th Nov ~ 19 th Dec 2014 (45 days)
	1 st Jun ~ 30 th Jun 2015 (30 days)	18 th Jun ~ 17 th Jul 2015 (30 days)
	1 st Sep ~ 30 th Sep 2015 (30 days)	29 th Nov ~ 25 th Dec 2015 (27 days)
	1 st Mar ~ 30 th Mar 2016 (30 days)	23 rd Feb ~ 7 th Apr 2016 (45 days)
Makoto TOKUDA (Data Analysis)	5 th Nov ~ 19 th Dec 2014 (45 days)	5 th Nov ~ 28 th Nov 2014 (24 days)
	1 st Jun ~ 15 th Jul 2015 (45 days)	11 th Jun ~ 10 th Jul 2015 (30 days)
		12 th Nov ~ 17 th Dec 2015 (36 days)
Haruka YOSHIDA (Environmental Education / ICT)	15 th Oct ~ 13 th Dec 2014 (60 days)	15 th Oct ~ 13 th Dec 2014 (60 days)
	1 st Mar ~ 30 th Mar 2015 (30 days)	17 th Mar ~ 15 th Apr 2015 (30 days)
	1 st Sep ~ 30 th Oct 2015 (60 days)	28 th Jul ~ 5 th Aug 2015 (9 days)
		7 th Nov ~ 25 th Dec 2015 (49 days)
1 st Mar ~ 30 th Mar 2016 (30 days)	2 nd Mar ~ 2 nd Apr 2016 (32 days)	
Total	585 days	585 days

b. Training in Japan

The training in Japan was from 27th July to 10th August 2015 with five trainees (four from MOESDDBM and one from National Disaster Risk Reduction Management Centre (hereinafter referred as “NDRRMC”). Through this training, the trainees had an opportunity to learn the policies, Vulnerability Assessment (hereinafter referred as “VA”) and environmental education in Japan.

Table 2.2 Schedule of the Training in Japan

Date	Day	Training Organization	Content	Stay
25 Jul	Sat	Weekend	Arrival	TIC
26 Jul	Sun	Weekend		TIC
27 Jul	Mon	Kokusai Kogyo Co. Ltd	[Lecture] Briefing on the outline of the training	TIC
		Ministry of Environment	[Lecture] Japan's Climate Change Policies	
			[Lecture] Support for Local Governments For Environmentally Sustainable Cities	
			[Lecture] Cool Biz	
			[Lecture] For Promotion of Environmental Conservation Activities	
	[Lecture] Climate Change Adaptation in Japan and International Activities			
28 Jul	Wed	City of Yokohama City	[Lecture] Climate Change Policy of the City of Yokohama	TIC
		Japan Agency of Marine-Earth Science and Technology, Yokohama (JAMSTEC)	[Lecture] Introduction	
			[Lecture] Research on climate change and sea level rise, Research on Indian Ocean monitoring (1)	
			[Lecture] Research on climate change and sea level rise, Research on Indian Ocean monitoring (2)	
	[Site visit] Earth Simulator			
29 Jul	Tue	Meteorological Research Institute, Tsukuba	[Lecture] Introduction of MRI, Global Warming Projection, GCM (20km)	TIC
			[Lecture] Hydroclimate Change in Asia (Greenhouse Gas Emission Scenario)	
			[Lecture] Observational Data and Climate Monitoring	
30 Jul	Thu	Center of Computational Science, Tsukuba University	[Lecture] Introduction of Dynamical Downscaling for Regional Climate Change	TIC
		National Institute for Land and Infrastructure Management (NILIM), Tsukuba	[Lecture] 1) Investigation between Coastal Disaster and Meteorological Phenomenon by the Typhoon and Depression Data-set, 2) Setting of Benchmark Value of Previous Sea Level Rise along Japan Coasts for Climate Change Adaptation, 3) Toward adaptation measures of storm surge protection in Japan, 4) Variation Characteristics of Typhoon Surge in the Future of Three Major Bays	
31 Jul	Fri	Ujigawa Open Laboratory, Kyoto University	[Lecture] Recent Flood Disaster in Japan	Shiga
1 Aug	Sat	Morning Tour		Shiga
2 Aug	Sun	Weekend		Shiga
3 Aug	Mon	Institute of Physical and Chemical Research (RIKEN)	[Lecture] Necessity of HPC for better understanding of tropical meteorology	JICA Kyushu Center
4 Aug	Tue	City of Kita-Kyushu	[Lecture] International Environmental Strategies in Kitakyushu	JICA Kyushu Center
			[Lecture] Countermeasures for Climate Change at Kitakyushu City	
		Kita-Kyushu Environment	[Site visit] Introduction of environmental education	

		Museum	activities in Kita-Kyushu	
5 Aug	Wed	Mitsui Fudosan Co. Ltd	[Site Visit] Smart City in Kashiwa No Ha	TIC
6 Aug	Thu	JICA Tokyo International Centre(TIC)	Preparation for the presentation	TIC
7 Aug	Fri	Japan Centre for Climate Change Actions	[Lecture] Hands-On Learning Program for Global Warming Countermeasures	TIC
		JICA Tokyo International Centre(TIC)	Preparation for the presentation	
8 Aug	Sat	Weekend		TIC
9 Aug	Sun	Weekend		TIC
10 Aug	Mon	Nihon University (Tokyo, Chiyoda-ku)	[Lecture] A Study on the Ideal Policy of Beachfront Management - Report on the advanced management in Maui county in Hawaii, US -	TIC
		JICA Tokyo International Centre(TIC)	Presentation	
			Evaluation session, Closing	
11 Aug	Tue		Departure	
12 Aug	Wed			

c. Equipment

The table below shows the list of equipment which were purchased during the Project. The specification of most of the equipment has been discussed with the counterpart.

Table 2.3 List of the Equipment Purchased

No.	Item	Qty.	Receipt Date	Delivery Place
1	Workstation (desktop computer)	1 set	11 th Dec. 2014	CCD ¹
2	Laptop computer	1 set	12 th Nov. 2014	CCD
3	LCD monitor	2 sets	11 th Dec. 2014	CCD
4	LCD projector	1 set	11 th Dec. 2014	CCD
5	Uninterruptable Power Supply (UPS)	1 set	11 th Dec. 2014	CCD
6	Network equipment	1 set	30 th Mar. 2016	CCD
7	GIS Software (ArcGIS advanced with spatial analyst extension)	1 set	4 th Dec. 2014	CCD
8	Sound system (speaker and microphone) for sensitisation campaign	1 set	5 th Dec 2014	CCD
9	Digital video camera	1 set	8 th Dec. 2014	CCD
10	Consumable supplies and maintenance for copier	1 set	1 st Apr. 2016	CCD
11	Data storage (hard disk)	1 set	1 st Apr. 2016	CCD
12	Printer	1 set	1 st Apr. 2016	CCD
13	Handy GPS	3 set	8 th Jul. 2015	CCD
14	Satellite data (World View 3)	1 set	10 th Apr 2015	CCD

¹ Climate Change Division (CCD), MOESDDBM
7th Floor, Ken Lee Tower, Barracks Street, Port Louis

2.1.2 Input by Mauritian Side

The MOESDDBM has taken necessary measures to provide the items described below.

- (1) Services of MOESDDBM's counterpart personnel and administrative personnel as described in the Record of Discussion (hereinafter referred as "R/D").
- (2) Furnished and air-conditioned office space for JICA missions with office furniture, telephone lines, a copy machine, and internet connection, and a meeting room or a seminar room for training sessions, necessary for the implementation of the Project.
- (3) Enough storage space for equipment to be procured in the Project.
- (4) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA.
- (5) Information as well as support in obtaining medical services.
- (6) Residents Permit (Working Permits, etc)
- (7) Available data (including meteorological data, maps, and photographs) and information related to the Project.
- (8) Running expenses necessary for the implementation of the Project.
- (9) Expenses necessary for transportation, within Mauritius, of the equipment referred to in the R/D as well as for the installation, operation and maintenance thereof; and
- (10) Necessary facilities for the members of the JICA missions for the remittance as well as utilization of the funds introduced into Mauritius from Japan in connection with the implementation of the Project.

2.1.3 Activities

The activities have not been amended since the beginning of the Project (as agreed in the R/D)

a. [Output 1] Sectoral guidelines/policies on climate change adaptation are established

a.1 Identify line Ministries or other organizations for climate change adaptation measures in the fields of coastal protection and management. (Activity 1-1)

The actual organization and activities have not been clarified although it has been noted that many organizations are engaging the climate change countermeasures in Mauritius. To clarify the organizations related with climate change and their activities in Mauritius, a preliminary investigation was conducted, and the organizations are identified as shown in Table 2.4

Table 2.4 Organizations related with climate change in Mauritius

LINE MINISTRIES	Ministry of Fisheries
	Ministry of Agro-Industry and Food Security
	Ministry of Tourism and Leisure
	Ministry of Housing and Lands
	Ministry of Education and Human Resources
	Ministry of Energy and Public Utilities
	Ministry of Public Infrastructure, NDU, LT & Shipping - (no need for LT & Shipping)
	Ministry of Local Government and Outer Islands
	Ministry of Gender Equality, Child Development and Family Welfare
	Ministry of Tertiary Education, Science, Research & Technology
	Ministry of Foreign Affairs, Regional Integration and International Trade
STATUTORY/LOCAL BODIES	Mauritius Oceanography Institute (MOI)
	Albion Fisheries Research Center
	Mauritius Meteorological Services (MMS)
	Food and Agricultural Research & Extension Institute (FAREU)
	Mauritius Research Council (MRC)
	Mauritius Institute of Education (MIE)
	Outer Islands Development Corporation
	MSIRI/Mauritius Cane Industry Association (MCIA)
	National Disaster Risk Reduction Management Center (NDRRMC)
	Maurice Ile Durable Commission (MIDC)
	Mauritius Ports Authority (MPA)
	Road Development Authority (RDA) - (responsible for main roads)
	National Parks and Conservation Services (NPCS)
	Forestry Services
	Beach Authority
	Tourism Authority (permits for recreational activities along coast)
	Local Authorities - Grand Port
	Local Authorities - Pamplemousses
	Local Authorities - Port Louis
	National Empowerment Foundation
INTERNATIONAL DEVELOPMENT PARTNERS	Japanese International Cooperation Agency (JICA)
	European Union (EU)
	African Development Bank (AfDB)
	Agence Francaise de Development (AFD)
	United Nations Development Programme (UNDP)
	Global Environment Facility (GEF) - Small Grants Programme (SGP)
	United Nations Environment Programme (UNEP)
	Indian Ocean Commission (IOC)
	World Bank
SADC	
COMESA	
LOCAL ASSOCIATIONS	Association Des Hoteliers et Restaurateurs de L'ile Maurice (AHRIM)
	Small & Medium Hotels Association of Mauritius
	Tourism Industry Workers

	Fishermen's Associations - Fishermen Cooperative Association
	Farmers Cooperative Society
	Scouts Association - Baden Powell Trianon
	Women's Association
	Junior Chamber International (JCI)
PRIVATE SECTOR	Rogers Foundation
	Espitalier Noel Group (ENL)
	Omnican
	Ireland Blyth Ltd (IBL)
	Mauritius Commercial Bank (MCB) Foundation
ACADEMIA	University of Mauritius (UoM)
	University of Technology Mauritius (UTM)
	Universite des Mascareignes (UdM)
NGO	Mauritius Council of Social Services (MACOSS)
	Mauritian Wildlife Foundation (MWF)
	Mauritius Marine Conservation Society (MMCS)
	Reef Conservation
	EcoSud
	Association des Petit Planteurs
	Belle Verte

To understand the actual activities of the climate change organizations which are identified above, organizations from line ministries, parastatal bodies, municipal/district councils, international development partners, local associations, private sectors, academies, and NGOs were targeted. About 80 organizations from various sectors were surveyed between 25th September 2014 and 13th December 2014, using a detailed questionnaire. In addition, close to a dozen in-person interviews were conducted to gain further insight into organizations initiatives, projects, and programmes related to climate change. Figure 2.1 shows an example of the survey result.

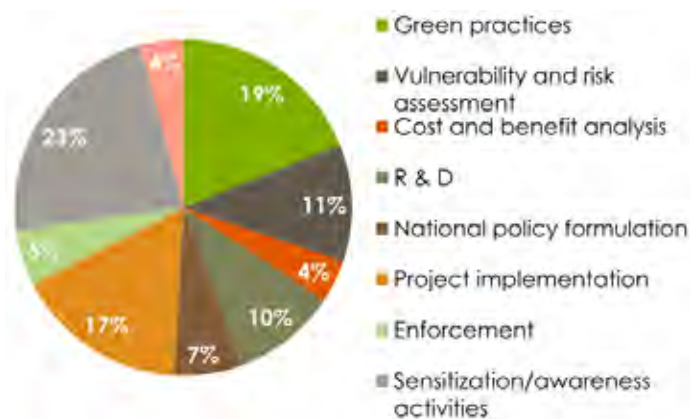


Figure 2.1 Climate Change Activity Sectors

The following documents related to climate change in Mauritius were reviewed:

- ÿ Tourism Development Strategy and Action Plan;
- ÿ Tourism Sector Strategy Plan 2009-2015,
- ÿ Hotel Development Strategy;
- ÿ Road Development Act;
- ÿ The Environment Protection Act 2002,
- ÿ Integrated Coastal Zone Management Framework (ICZM);
- ÿ EIA Guidelines for coastal construction;
- ÿ Planning Policy Guidelines (PPG);
- ÿ Building and Land Use Permit (BLP);
- ÿ Pas Geometriques Act.

a.2 Analyze impacts of climate change on these sectors, especially with focus on negative impacts. (Activity 1-2)

A wide range of skills, knowledge and experience will be required to work on climate change adaptation measures. It is difficult to acquire the skills/knowledge/experience of all the fields. As a starting point, this Project attempted to introduce a methodology of the impact analysis through a case study of the inundation risk and setback examination in the coastal area. Figure 2.2 shows the conceptual image of the analysis. And Figure 2.3 shows Village Council Area(VCA) population which will be affected by coastal inundation. The detailed method of the analysis is included in the Annex of the Guideline.

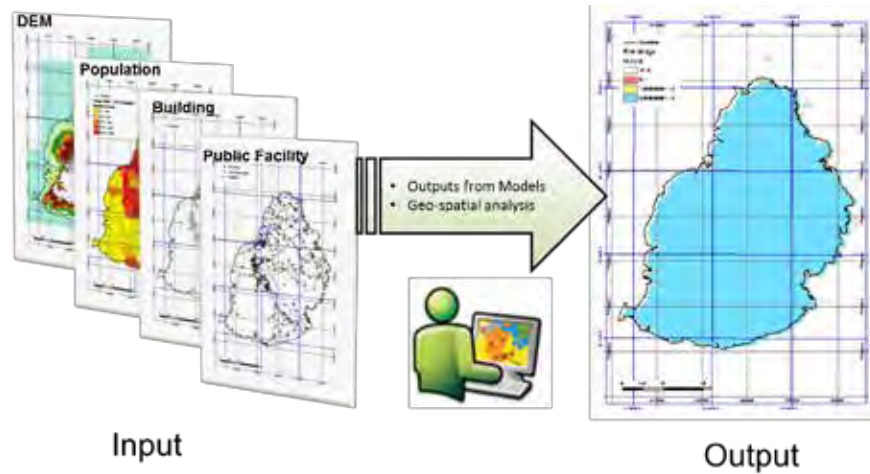


Figure 2.2 Conceptual Image of the Analysis

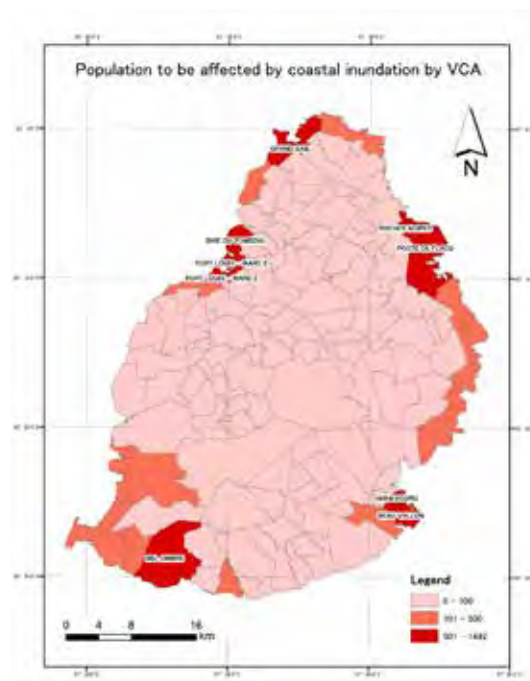


Figure 2.3 Population to be affected by Coastal Inundation by Village Council Area

a.3 Collect the baseline data (from the line ministries, international sources and ongoing JICA projects). (Activity 1-3)

The baseline data (from the line ministries, international sources and ongoing JICA projects) has been collected such as existing reports (AAP, Indian Ocean Commission (hereinafter referred as “IOC”) and existing data (GIS, meteorological data, etc). The list of the collected data is shown in Table 2.5.

Table 2.5 Collected Data

No.	Name	Attribute	Type	Scale/Resolution	Source	Remarks
1	Built-up Area	-	Polygon	1:50,000	MHL	
2	Setback Buffer	-	Polygon	1:50,000		Generated from coastline by GIS
3	Coastal Erosion/Accretion	-	Line	1:50,000	JICA ²	Extent of the prioritized coastal area
4	Sand Beach and Dune	-	Polygon	1:50,000	ESA ³ , DRR ⁴	
5	Mangrove	-	Polygon	1:50,000	ESA	
6	Marshland	Conservation Value	Polygon	1:50,000	ESA	3 classification conservation value (High, Moderate, Low)
7	Cultural and Historical Asset	Name	Point	1:50,000	DRR	Waiting for response of NHF ⁵
8	Storm Surge/Coastal Inundation	Hazard Exposure Level	Polygon	1:50,000	DRR	Exposure of storm surge inundation (highest scenario 6m)
9	Coral Reef	-	Polygon	1:50,000	ESA, DRR	
10	Marine Park	Name	Polygon	1:50,000	ESA	
11	National Park	Name	Polygon	1:50,000	ESA	
12	Gazetteer	Name	Point	1:50,000	ESA, DRR	
13	Road	Class	Line	1:50,000	ESA, DRR	
14	Stream	Name	Line	1:50,000	ESA, DRR	
15	River	Name, Type	Line	1:50,000	ESA, DRR	
16	Reef	-	Line	1:50,000	ESA, DRR	
17	Islet	Islet Name	Polygon	1:50,000	ESA, DRR	
18	Coast Line	-	Line	1:50,000	ESA, DRR	
19	Gazetteer	Name	Point	1:50,000	ESA, DRR	
20	Road	Class	Line	1:50,000	ESA, DRR	

²JICA: The Project for Capacity Development on Coastal Protection and Rehabilitation in the Republic of Mauritius by JICA (Japan International Cooperation Agency), 2015

³ESA: Study of Environmentally Sensitive Areas (ESA), Ministry of Environment and National Development Unit, Government of Mauritius, 2009

⁴DRR: Final Report of Disaster Risk Reduction Strategic Framework and Action Plan (DRR) by AAP (African Adaptation Programme), 2012

⁵ NHF: National Heritage Fund

a.4 Analyze (GIS, Vulnerability Assessment, etc) the collected data and identify adaptation measures. (Activity 1-4)

The collected data has been analyzed with the available data in Mauritius and recommendations have been made in the studied area based on the viewpoint of building and land use development.

However, more countermeasures can be recommended after the implementation of detailed survey at each area in the future.

Technical Transfer

Four workshops/training sessions of data analysis and VA using GIS have been undertaken in this Project as part of the technical transfer as described below;

- 1) 1st Workshop/Training [November/December, 2014]

The contents of the 1st workshop/training are the basic knowledge and method of data analysis and VA using GIS software.

Table 2.6 Contents of the 1st Workshop/Training

Date	Workshop/Training	Venue	No. of Participant
14 th Nov 2014 (12:30~16:00)	Installation of GIS software (ArcGIS) [Lecture] Introduction of GIS Capacity Assessment	Conference Room (3 rd floor, MOESDDBM)	34
17 th Nov 2014 (12:30~16:00)	Review of the training [Practice] Making thematic map [Lecture] Introduction of data (shapefile, DEM, etc.)	Conference Room (3 rd floor, MOESDDBM)	33
21 st Nov 2014 (12:30~16:00)	Review of the training [Lecture] Introduction of GIS (coordinates, types of spatial information, and component of GIS software) [Practice] Spatial analysis (analyzing area of inundation by sea level rise)	Conference Room (3 rd floor, MOESDDBM)	28
24 th Nov 2014 (12:30~16:00)	Review of the training [Lecture] Basic flow of VA [Practice] Spatial analysis (calculation of the population to be affected by inundation)	Conference Room (3 rd floor, MOESDDBM)	30
26 th Nov 2014 (9:00~12:00)	Review of the training [Practice] Spatial analysis (calculation of the population to be affected by inundation)	Conference Room (3 rd floor, MOESDDBM)	27
28 th Nov 2014 (12:30~16:00)	Review of the training [Practice] Spatial analysis (mapping the population to be affected by inundation)	Conference Room (3 rd floor, MOESDDBM)	26
1 st Dec 2014 (12:30~16:00)	[Practice] VA by groups (condition settings, analysis method, selection of the target area, and preparation of presentation)	Conference Room (3 rd floor, MOESDDBM)	23
3 rd Dec 2014 (12:30~16:00)	Presentation by each group on the result of the VA	Conference Room (3 rd floor, MOESDDBM)	15

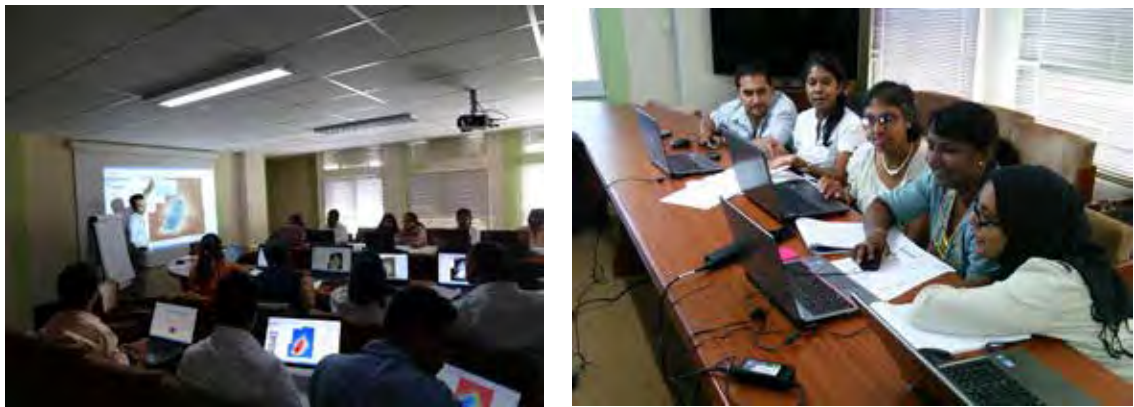
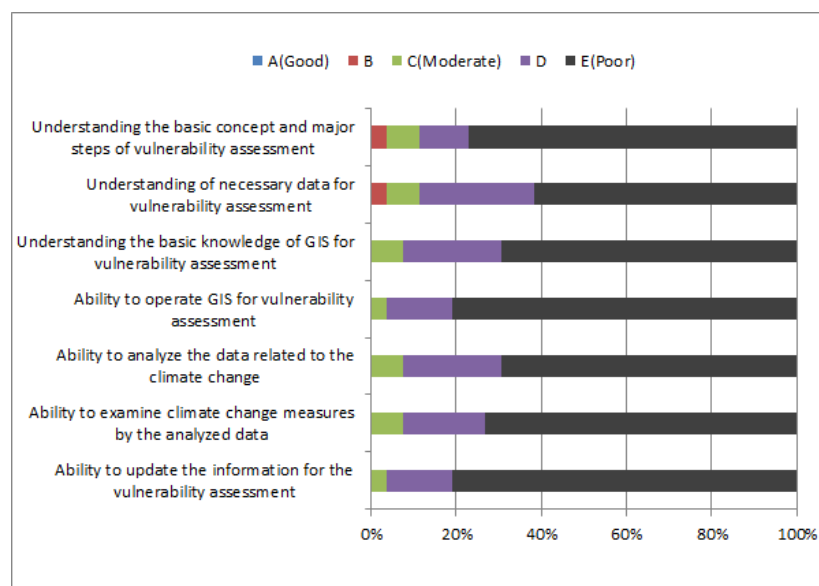


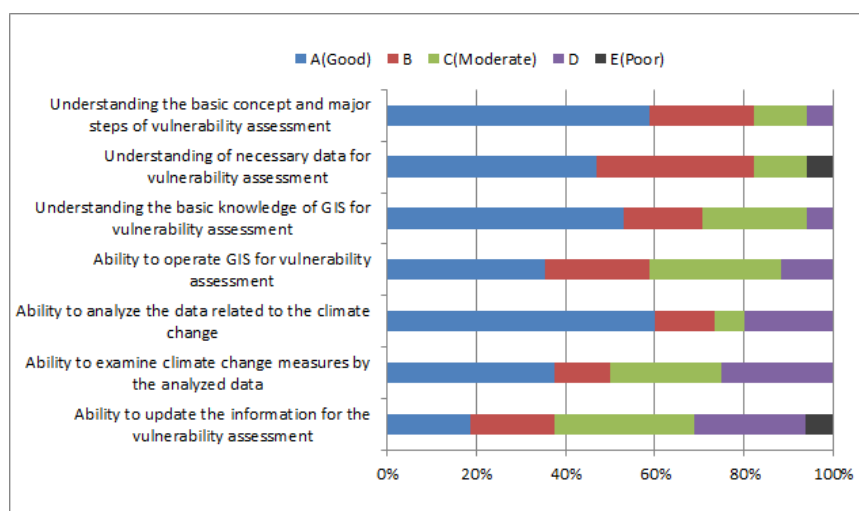
Figure 2.4 Photos of the 1st Workshop/Training

The questionnaire survey was conducted with the participants at the beginning and end of the 1st workshop/training for the capacity assessment. Figure 2.5 and Figure 2.6 shows the summary of the assessment.



(14th November 2014, N=26)

Figure 2.5 Summary of 1st Capacity Assessment for GIS, Data Analysis and VA



(4th December 2014, N=14)

Figure 2.6 Summary of 2nd Capacity Assessment for GIS, Data Analysis and VA

2) 2nd Workshop/Training [July, 2015]

The contents of the 2nd workshop/training are the practical (application) knowledge and method of data analysis and VA using GIS software. In addition, fieldwork was undertaken to acquire the coordinates and inundation height (sample) using GPS.

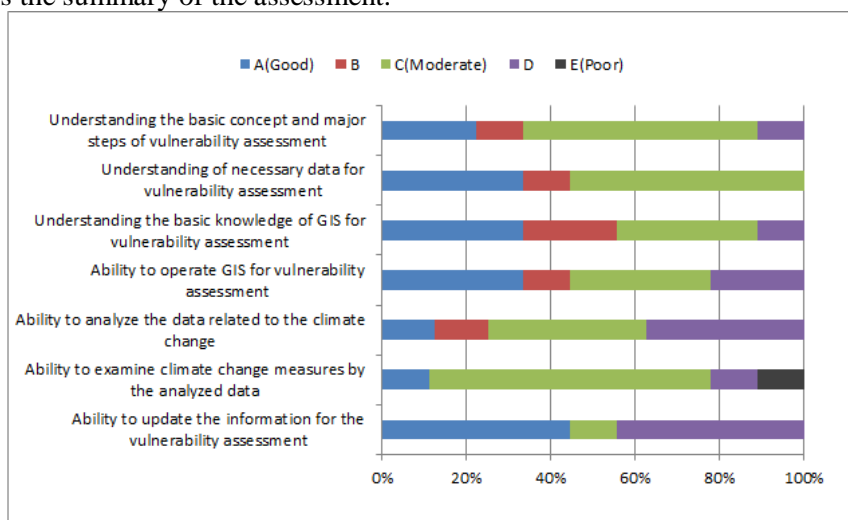
Table 2.7 Contents of the 2nd Workshop/Training

Date	Workshop/Training	Venue	No. of Participant
7 th Jul 2015 (13:00~16:00)	Installation of GIS software (ArcGIS) [Lecture] Introduction of GIS (satellite images) [Practice] Review of the 1 st training /workshop [Practice] Geo-referencing, tracing the coastal line and buildings Capacity Assessment	Meeting Room (10 th floor, MOESDDBM)	10
8 th Jul 2015 (13:00~16:00)	[Fieldwork] Acquiring coordinates using GPS [Practice] Reading GPS data by GIS software [Practice] Setback calculation Capacity Assessment	Around MOESDDBM (outside) Conference Room (3 rd floor, MOESDDBM)	10



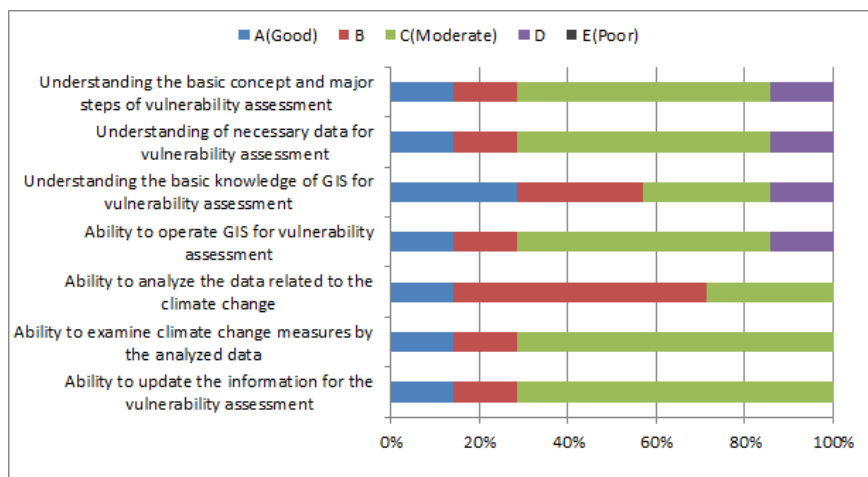
Figure 2.7 Photos of the 2nd Workshop/Training

The questionnaire survey was conducted with the participants at the beginning and end of the 2nd workshop/training for the capacity assessment. Figure 2.8 and Figure 2.9 shows the summary of the assessment.



(7th July 2015, N=9)

Figure 2.8: Summary of 3rd Capacity Assessment for GIS, Data Analysis and VA



(8th July 2015, N=7)

Figure 2.9: Summary of 4th Capacity Assessment for GIS, Data Analysis and VA

3) Review Workshop [November, 2015]

The contents of the 1st and 2nd workshop/training were undertaken in the Review workshop which was arranged and conducted (lectured) by the counterpart itself. This shows that the dissemination of this knowledge can be expected in the future.

Table 2.8 Contents of the Review Workshop

Date	Workshop/Training	Venue	No. of Participant
19 th Nov 2015 (13:00~15:00)	[Practice] Introduction of ArcGIS and screening of the inundation risk area in coastal zone Capacity Assessment	Meeting Room of CCD Division (6 th floor, MOESDDBM)	1
20 th Nov 2015 (13:00~15:00)	[Practice] Setback distance analysis with time series in coastal zone Capacity Assessment	Meeting Room of CCD Division (6 th floor, MOESDDBM)	1



Figure 2.10 Photos of the Review Workshop

4) Field Survey Training (Trial) [December, 2015]

A field survey was undertaken in Baie du Tombeau as trial training with the counterpart (CCD) to survey the actual status of the buildings.

Table 2.9 Contents of the Field Survey

Date	Workshop/Training	Venue	No. of Participant
10 th Dec 2015 (10:00~12:00)	[Lecture] Method of field surveys [Practice] Survey by group	Baie du Tombeau	2
11 th Nov 2014 (10:00~12:00)	[Practice] Survey by group [Practice] Compiling/analysis of the acquired information	Baie du Tombeau, MOEDDBM	2

Table 2.10 Summary of the Field Survey

Purpose	To collect additional data for the VA	
Method	1) Interview	2) Visual observation
Item of survey	1) Building year 2) Type of building 3) Number of floors	4) Type of wall and roof material 5) Disaster record 6) Extent of damage
Item	1) Map 2) Survey sheet	3) GPS 4) Measuring tape
Time (Trial)	10 th & 11 th December 10:00 ~ 12:00 (2 groups)	
Surveyor (Trial)	1) Mr. I. Cheenacunnan 2) Mr. A.K. Dhoomun	3) Mr. Yoshimizu GONAI 4) Mr. Makoto TOKUDA
Area	Baie du Tombeau (100m within coastal area)	
No. of buildings	364 buildings* (Total surveyed buildings = 126 buildings)	

* based on building traced by satellite images



Figure 2.11 Photos of the Field Survey

a.5 Establish guidelines (policies and standards) in relation to climate change. (Activity 1-5)

The concept of the guideline was initially assumed by the Japan Expert Team (JET) to be the enhancement of coordination by the CCD to optimize/improve the climate change activities which are conducted by ministries, local authorities, agencies, international organizations, academies (schools, universities, institutes and others), local associations, private sectors and others in Mauritius. The draft content of the guideline was for the improvement/optimization of coordination (such as organizational structure, duties, roles, structure, relationship with stakeholders, action plan, and others) and was planned at that time (July to August 2014). For this concept's guideline, the questionnaire/interview survey was conducted to obtain information on activities, actual conditions, situation and more, in each organization – which has a relation with climate change matters. Based on the survey result, the gaps/needs study, mapping (confirmation/classification of the function of each organization), and other analysis were implemented in August to October 2014.

The concept/content of the guideline was discussed with the JET and CCD on the basis of the survey/study/analysis results of November 2014 and January 2015. Through a series of discussions/consultations with the JET and CCD, it was clarified that technical content (such as setback regulation of buildings/developments which have received attention in the coastal area) was required as a concept/content of the guideline rather than organizational theory/logic (such as organizational structure, relationship with stakeholders and others) – which was initially assumed to be required.

Based on the information above, the concept/content of the guideline was changed from organizational theory/logic to technical content in April-June 2015. However, there were difficulties making a guideline which could consider all requirements/comments/views of stakeholders due to limited human resources, budget and period of the Project⁶. Time was required in order to have a basic agreement and make consensus building with the stakeholders regarding the balance point of the guideline's concept/content between the limitations and the requirements.

Eventually, the draft final of the guideline was made by the C/P and supported by the JET, based on the series of discussions and collaborative works.

⁶ Over 70 comments/views/requests were collected through the bilateral/multilateral meetings which were held over seven times. Based on the meeting results, modification of the guideline, additional investigation, field survey and analysis were implemented. Over 90% of the comments/views/requests were responded to through the implementation and the consensus of the stakeholders was built. The following requests appeared in the comments/views: the standard specification of the building design including the structure calculation which can adopt to the climate change/sea level rise in the coastal zone; proposal of new construction of the civil engineering works for coastal management; and computer software development decision support system for climate change measures. C/P and stakeholders understood that those requests shall not be covered in this Project through the meetings with C/P and stakeholders because the requests can be considered to be out of the scope of the Project.



Figure 2.12 Photos of Making the Guideline by Collaborative Works of C/P and JET

Outline and flow of cooperation during the guideline draft final draw up phase is indicated in Table 2.1.

Table 2.1 : Outline and flow of cooperation during the guideline draft final draw up phase.

Date	Overview of cooperation works
Beginning of March, 2016	<ul style="list-style-type: none"> ∅ The final chapter of the guideline draft⁷, reflecting the background of the project⁸, was explained in a consultation held with the Director and the Deputy Director of the Bureau of Environment, and the CCD Section Manager. ∅ An overall review of the guideline is attempted, in response to comments in which the guideline was not what the C/P had requested⁹ ∅ Policy for review tasks were considered through five working group meetings, which were composed by CCD and related departments of the Bureau of Environment (such as Integrated Coastal Zone Management, Policy Planning, Environmental Impact Evaluation)
Mid-March, 2016	<ul style="list-style-type: none"> ∅ A consultation was held, where work status was reported, and future schedule and considerations were discussed, once a certain level of work results took shape¹⁰.

⁷ Outline of the final chapter (action plan) at the end of February 2016, was as follows.

- (1) Preparation period: Stakeholder investigation (stakeholders identification, actual activity, etc.) and project design regarding setback promotion activity.
- (2) Baseline survey for pilot site selection (priority coasts).
- (3) Detailed survey for setback activity conducted in the selected pilot site.
- (4) Stakeholder participatory setback guideline settlement.
- (5) Guideline application, evaluation and revision as needed. Consideration of developing plans to other sites.

The above mentioned (2), was carried out by the application of priority coasts selection matrix and AHP (Analytic Hierarchy Process—decision making methodology for problem resolution considering both subjective human judgement and system approach, regarding decision making through problems analysis).

The above mentioned (4), was carried out by the application of decision making support tools, considering detailed guideline contents provided by the C/P (such as new setback contents, distance, area selection, and guidance mechanisms).

⁸ Outline of the background was as follows.

From November to December, 2015: bilateral and multilateral consultations were held (Large-scale consultations where stakeholders assembled were held five times, other than that, bilateral consultations were held several times). Guideline revision was carried out, based on over 70 opinions, views and requests, gathered from stakeholders.

The 4th of December, 2015: A basic agreement was reached towards finalizing the guideline, in a multilateral consultation, where the revised guideline was handed out previously (although there were some questions that were responded to and solved there).

In the SC (Steering Committee) held the 21st of December, the above mentioned basic agreement towards finalizing the guideline was programmed to be checked, but the Director and the Deputy Director of the Ministry of Environment, and the CCD Section Manager requested a revision of the plan of operations after the completion of the project.

The 23rd of December, a Technical Committee was held between the Director and the Deputy Director of the Ministry of Environment, and the CCD Section Manager. Finalization of the guideline was confirmed, by the revision of the plan of operations (=Action plan: basic policies for future operations, requested data, work assignment of each stakeholder) after the completion of the Project.

Accordingly, JET carried out the revision of the above mentioned contents during January-February.

⁹ C/Ps (the Director and the Deputy Director of the Bureau of Environment) requested immediately available “tools”, but not a long term action plan. At this moment, many examinations regarding development in coastal areas (residential houses and hotel construction) are being requested to the Ministry of Environment. Regarding these examination requests, permissions for the coastal development need approval. In case of rejection, the basis for rejection is necessary. “Tools” (such as setback distance calculation formula or plans) which are able to deal with this are demanded by the C/P.

¹⁰ The outline of the consultation is as follows.

- (1) Guideline operation status report
 - Explanation of the final chapter of the guideline during its draw up.

	<ul style="list-style-type: none"> ∅ The course of direction for guideline revision was confirmed through a technical committee. The committee, formed by the Director and the Deputy Director of the Bureau of Environment and departments related inside the Ministry of Environment, was held in order to share the above mentioned base policy consideration results for the review tasks. ∅ Revision tasks were carried out in cooperation with C/P and working group members, based on the facts mentioned above.
Late March, 2016	<ul style="list-style-type: none"> ∅ Guideline draw up (chapters/sections) were to be modified, regarding the results of the work up to this moment¹¹. ∅ Revision tasks were continued, in cooperation with CCD Section Manager and CCD members. Meetings were held (six times) once a certain level of work results took shape. ∅ Once the guideline final draft took shape, it was explained to the Director of the Bureau of Environment, by the CCD Section Manager, and basic acknowledgement was obtained. Subsequently, a circulation with the final draft was remitted to the stakeholders. ∅ Revision tasks were continued in order to deal with views and advetences from Mrs. Ng Yun WING, the Minister, the Cabinet, stakeholders, etc.¹² ∅ The final guideline proposal was explained in the steering committee. <ul style="list-style-type: none"> ∑ Stakeholders pointed out that consensus building between the actors involved (not only public organizations but private sector and inhabitants, etc.) would be difficult for setback realization if prerequisite conditions on climate change were modified (considering a disaster of once in hundreds of years, etc.). ∑ Regarding this, the Director and the Deputy Director of the Bureau of Environment, and the CCD Section Manager, answered/explained to stakeholders as follows. ∑ The guideline is a starting line for working on climate change adaptation and from now on, stakeholders and actors involved would be responsible for its improvement, as a prerequisite. ∑ Extreme prerequisites might also be requested for consideration, but this would not link to problem solving. ∑ A week after the steering committee was finalized; the Stakeholder's comments regarding the guideline were accepted. The guideline will be finalized, if no big issues occur, and the Ministry of Environment (CCD) will draw up a cabinet paper in order to submit the guideline to the cabinet.

Through the collaborative works, the methodology (principles behind the examination of the coastal setback, data collection, target coastal zones, geo-spatial approach/analysis, and setback distance calculation) was examined. The conceptual diagram for the methodology using the geo-spatial approach is shown in the Figure 2.13 below. Figure 2.14 below shows an example of a map with reference information for the examination of coastal setback .

- Report of the reference information providing operation results, regarding the setback considerations.
 - Report of the results of illustrations obtained by overlaying main data on GIS (existing setback areas, beaches/dunes, marshes, flood risk areas, etc.) of the 13 coastal zones selected in the previous projects.
 - Additional data about marine national parks, mangroves and coral reefs were requested. (As data had been prepared previously, it was resolved at the site.)
 - Guideline writing tasks were being advanced in cooperation with the C/P (Staff member of other departments of the Ministry of Environment, Mr. Seewoodabuth) at the same time illustrations mentioned above where being created.
- (2) Consideration of the schedule draft.
- (3) Discussion of the matters of consideration.
- Finalizing the guideline was confirmed by the inclusion of setback consideration results, based on the illustrations which were going to be created in the final chapter of the guideline,.
 - The "Formula" discussed until this moment will be dealt onwards in this Project.
 - The "Formula", is a "tool" the counterparts had requested as an example, but from now on, instead of the "Formula", the aim will be the "Model" development for setback consideration.
 - Drawings created during this Project will be used as base information for this "Model".
 - This Project will not deal with the development of this "Model" as it will need the participation of organizations such as universities and research institutions, and will be considered as a future issue.

¹¹ Modification results of the guideline structure (chapter, section) is as follows.

Chapter 1 Introduction

Chapter 2 Methodology

Chapter 3 Findings

Chapter 4 Way forward/Recommendation

¹² Contents of the specific revision tasks are as follows.

- Base images (background images) for analysis works were modified to the latest satellite images.
- Foundation data collection and revision in order to bolster theoretically the setback distance calculation formula (comparison between past and latest aerial and satellite photos of coastal erosion with addition of the following: spatial distribution drawings on sea level rise (1m) influence range; wave height observation data drawings during cyclones in the past; and foundation explaining texts and concept maps for wave height supposition based on formulas).

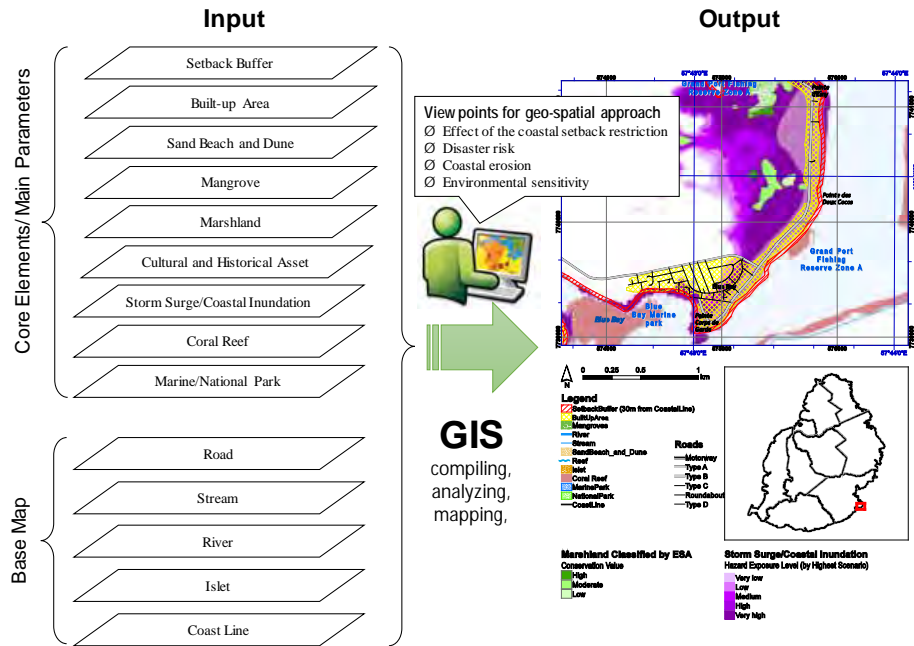


Figure 2.13: Conceptual Diagram of the Methodology (Geo-Spatial Approach)

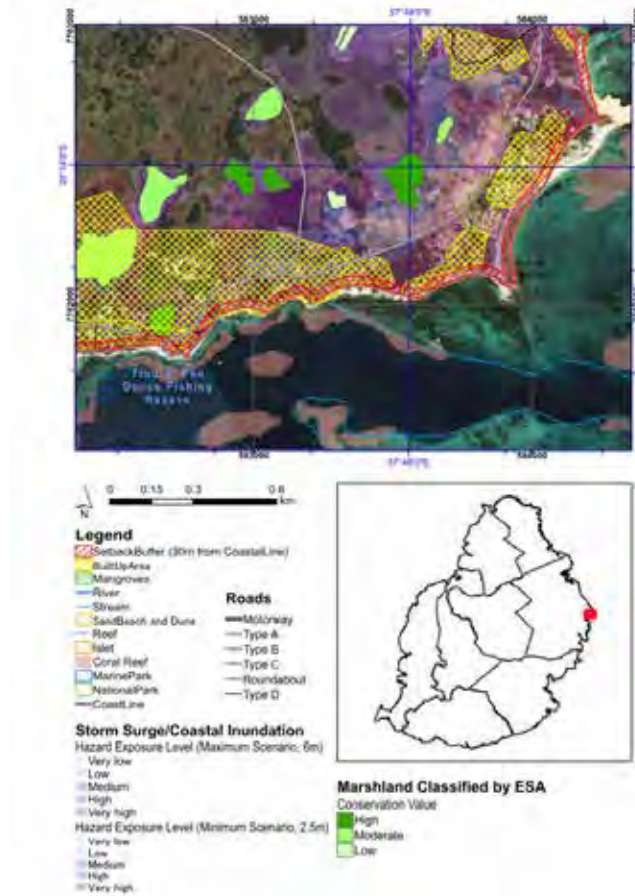


Figure 2.14: Sample Map for Coastal Setback Examination

Consensus Building (collection of the views/comments from stakeholders)

- 1) Steering Committee (hereinafter referred as “S/C”) / Technical Committee (hereinafter referred as “T/C”)

The following table shows the process of the consensus building and collaborative works for the revision/modification of the guideline after the S/C of December 2015.

Table 2.11 Process of the Consensus Building and Collaborative Works for the Revision/modification of the Guideline

Date/Time	Type of Meeting	Contents
21 st Dec. 2015 14:00-16:00	S/C	<ul style="list-style-type: none"> - The process for making the guideline was confirmed with the stakeholders. - The achievement (draft of the guideline) through the above process was confirmed. - And there were some comments/views regarding the action plan after the Project.
23 rd Dec. 2015 10:00-12:00	T/C	<ul style="list-style-type: none"> - Based on the comments/views of the S/C, the basic policy for modification of the guideline was discussed. - The discussion was concluded to the action plan after the Project, which includes the following: basic policy of the further works; required data; and specific tasks of each stakeholder. - The above contents were added to the guideline before the S/C (21st Dec.). And the stakeholders confirmed/agreed on the action plan through multilateral meetings (26th Nov. and 4th Dec.). However, more detailed contents were required in the T/C (23rd Dec.)
1 st Mar. 2016 9:15-10:15	T/C	<ul style="list-style-type: none"> - Explanation of the draft of the last chapter (action plan) of the guideline. - Discussion for the modification of the guideline.
1 st Mar. 2016 10:15-11:30	Working Group	<ul style="list-style-type: none"> - Discussion of the basic concept of the guideline modification. - Tentative schedule for the modification, and the organizational structure for the modification
2 nd Mar. 2016 10:00-11:30	T/C	<ul style="list-style-type: none"> - Discussion of the basic concept of the guideline modification.
2 nd Mar. 2016 11:30-12:00	Working Group	<ul style="list-style-type: none"> - Discussion for the review/revision of the table of contents. - Examination for specific contents such as methodology, analysis and others.
2 nd Mar. 2016 15:00-15:30	Working Group	<ul style="list-style-type: none"> - Confirmation of the above meeting results. - Data collection for the analysis - Role-sharing arrangement
3 rd Mar. 2016 11:30-12:30	T/C	<ul style="list-style-type: none"> - Confirmation of the meeting results (basic concept of the guideline modification)
9 th Mar. 2016 11:00-12:30	Working Group	<ul style="list-style-type: none"> - Confirmation of the achievement so far. - Examination of the schedule based on the above information.
9 th Mar. 2016 13:00-14:00	T/C	<ul style="list-style-type: none"> - Confirmation of the meeting results (basic concept of the guideline modification, and achievement so far)
11 th Mar. 2016 10:00-11:00	Working Group	<ul style="list-style-type: none"> - Confirmation of the achievement so far. - Review of the table of contents
14 th Mar. 2016 10:00-11:00	Working Group	<ul style="list-style-type: none"> - Confirmation of the achievement so far. - Review of the table of contents
15 th Mar. 2016 10:00-12:00 14:00-16:00	Working Group	<ul style="list-style-type: none"> - Modification work by the C/P with the support of JET
16 th Mar. 2016	Working	<ul style="list-style-type: none"> - Modification work by the C/P with the support of JET

10:00-12:00 13:00-15:00	Group	
16 th Mar. 2016 16:00-16:30	T/C	- Confirmation of the achievement so far. - Approval for circulation to the stakeholders
17 th Mar 2016	Working Group	- Modification work by the C/P with the support of JET
18 th Mar. 2016	Working Group	- Minor modifications of the guideline for reinforcement of methodology and logic of the analysis, proofreading, arrangement of layout, etc.
18 th Mar. 2016 15:00-16:00	S/C	- The draft of the guideline was explained to the stakeholders. There a few comments/views from the stakeholders. The C/P convinced stakeholders to finalize the guideline.
22-25 th Mar. 2016	Working Group	- Minor modifications of the guideline for reinforcement of methodology and logic of the analysis, proofreading, arrangement of layout, etc.



Figure 2.15 Photos of Steering Committee on 18th March 2016

2) Bilateral Meeting

Several bilateral meetings (Integrated Coastal Zone Management (hereinafter referred as “ICZM”), related divisions in MOESDDBM, and others) were held to discuss and improve the contents of the draft guideline.

3) Multilateral Meeting

Two multilateral meetings were held with the key stakeholders to receive and discuss their comments on the draft guideline.

- (i) 1st Multilateral Meeting (13:00, 26th November 2015 in 3rd floor Conference Room, MOESDDBM)

Table 2.12 List of Participants in the 1st Multilateral Meeting

SN	Name	Organization
1.	Mr. S. Buskalawa	MOESSDBM (Chair)
2.	Mr Roopen	Savanne District Council
3.	Mr. P.K.Domah	Ministry of Public Infrastructure and Land Transport
4.	Mr Roopen	District Council Black River
5.	Mr. D. S. Fokeer	City Council of Port-Louis
6.	Mr. R. Radha	Pamplemousses District Council
7.	Mr. R. M. Varma	Pamplemousses District Council
8.	Mr. K. Sookooa	MHL
9.	Mr M. Bhoysrag	District Council Savanne

10.	Mr. J. Mosaheb	Mauritius Ocean Institute (MOI)
11.	Mr. R. Booneeady	NDRRMC
12.	Mrs. Soogun	ICZM, MOESSDBM
13.	Mrs. T. Gujadhur	MOESSDBM
14.	Mr. I. Cheenaccunan	MOESSDBM
15.	Mr. A.K. Dhoomun	MOESSDBM
16.	Mrs. J. Bhandari	JET
17.	Mr. Tokuda	JET

Main points of discussion during working session are as mentioned below:

- ÿ Revision of setback on the shoreline every 20 years is considered sufficient in the Mauritian context;
- ÿ Specify the type of data needed in the guideline report for performing VA in the coastal zone;
- ÿ Specify type of data needed but which are missing or need to be updated;
- ÿ Include the formula for cliffs and the sites specified in the JICA report in the guideline (include SLR (Sea Level Rise) parameter);
- ÿ Consider the number of buildings and the surface area affected by coastal inundation instead of the number of people affected by the Village Council Area (VCA);
- ÿ Contact Statistics Mauritius for data related to buildings for VA;
- ÿ Avoid using projections for the years 2025, 2050, and 2100 as the report will be updated every 5 years;
- ÿ MHL to provide the GPS coordinates of buildings (or site plan of buildings) available from the Land Administration, Valuation, Information and Management System (LAVIMS);
- ÿ Change the title of the guideline;
- ÿ Consider issues related to coastal erosion when performing VA in the coastal zone;

(ii) 2nd Multilateral Meeting (14:00, 4th December 2015 in 3rd floor Conference Room, MOESDDBM)

Table 2.13 List of Participants in the 2nd Multilateral Meeting

SN	Name	Organization
1	Mrs. B. Bazerque	Savanne District Council
2	Mr. P. Balloo	District Council of Rivière du Rempart
3	Mr. P.K.Domah	Ministry of Public Infrastructure and Land Transport
4	Mr. M. Bhoyrag	Black River District Council
5	Mr. R. Booneeady	NDRRMC
6	Mr. L. Maghoo	Integrated Coastal Zone Management (Ministry of Environment)
7	Mr. S. Baccus	City Council of Port-Louis
8	Mr. A. Marie	Black River District Council
9	Mr. S. Khustar	MHL
10	Mr. I. Cheenaccunan	MOESDDBM
11	Mr. A.K. Dhoomun	MOESDDBM
12	Mrs. J. Bhandari	JET
13	Dr. Gonai	JET
14	Mr. Tokuda	JET

Main points of discussion during working session are as mentioned below:

- ÿ The main comments were on the “*Table 4.2: Task to be Undertaken and Necessary Information or Data*”, page 17.
 - Ø Task Item 2, Maintenance of the geospatial information of infrastructure, Road Development Authority (RDA) to be added as a key stakeholder.
 - Ø Task Item 5, Projection Information should be modified to Socio-economic Projection.
 - Ø Task Item 7, Record of disaster data, Mauritius Police Force, Mauritius Fire and Rescue Service, and MOESDDBM to be added as key stakeholders.
 - Ø Task Item 9, Socio Economic situation to be merged with task Item 5.
- ÿ Definition of coastal zone to be added before the table 4.2.
- ÿ Representative of MHL informed that the GPS coordinates of buildings will be mostly available for inland projects as most parts of the coastal zones are within State Land.
- ÿ Stakeholders were informed that any views/comments are to be submitted before the S/C.



(left: 1st Meeting , right : 2nd Meeting)

Figure 2.16 Photos of the Multilateral Meeting

a.6 Promoting climate change countermeasures to be reflected in the relevant policies and law (exp: Disaster Management Plan of Mauritius. (Activity 1-6)

MOESDDBM (CCD) prepared the cabinet paper of the guideline. They sent the paper to the cabinet at the end of March-beginning of April 2016. And then the guideline was confirmed by the GoM at the regular cabinet meeting which was held in the beginning-middle of April 2016.

b. [Output 2] Climate change education and public awareness activities are enhanced

b.1 Plan climate change education and public awareness activities with the Climate Change Division (CCD) and the Information and Education Division (I&ED) of MOESDDBM (target, curriculum and media, etc.). (Activity 2-1)

The JET in collaboration with the C/P, conducted the mapping exercise in order to obtain the information on the past and ongoing climate change activities in Mauritius, to identify the target groups and sensitisation materials, and to avoid duplication of the activities. Close to 80 organizations such as line ministries, international development partners, private sectors, academies and NGOs were targeted to answer questions on their activities that are related to climate change.

b.2 Obtain information/materials for climate change campaigns. (Activity 2-2)

The information and materials for climate change campaigns were obtained through the mapping exercise mentioned in b. 1 and some research on climate change sensitisation activities implemented in Japan.

Develop resource materials with the CCD and the I&ED for sensitisation for various targeted groups. (Activity 2-3)

Based on the results of b.1 and b.2, the following sensitisation materials were developed.

1. Video clip

The video clip has three sections: 1) global causes of climate change; 2) adverse impacts of climate change on Small Island Developing States (SIDS); and 3) future projections for Mauritius. It is produced in three languages; French, Creole and English.

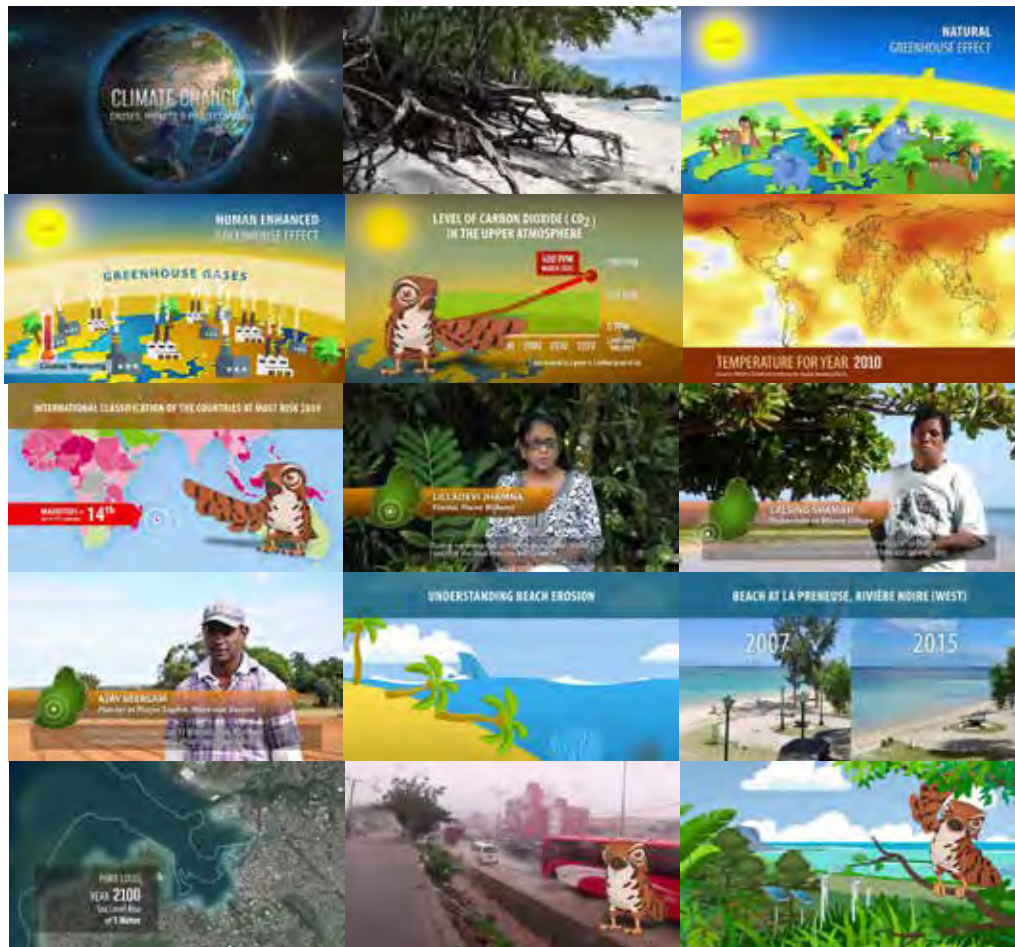


Figure 2.17 Sample Screen Shots of the Video Clip

2. Panels depicting the climate change effects and countermeasures of an imaginary island called ‘Maurits’

The panels are a tool which enables people to understand the basic concepts of climate change, unsustainable/sustainable practices and actions to combat climate change. Graphic panels, which provides the information regarding climate change, have a manual that includes the panels’ description and effective utilizing methods and guiding questions to achieve the learning outcomes that each panel aims. The panels have nine different themes:

- 1) ‘Maurits imaginary island - present day’ which illustrates common island features of ‘Maurits’- an imaginary Western Indian Ocean Island;



Figure 2.18 Panel 1: Maurits Imaginary Island - Present Day

- 2) ‘General effects of changing climate in Maurits and small Islands’ which shows the observed changes due to climate change in Maurits;



Figure 2.19 Panel 2: General Effects of Changing Climate in Maurits and Small Islands

- 3) ‘Global causes of climate change’ which depicts the effects of greenhouse gases, global warming and climate change;

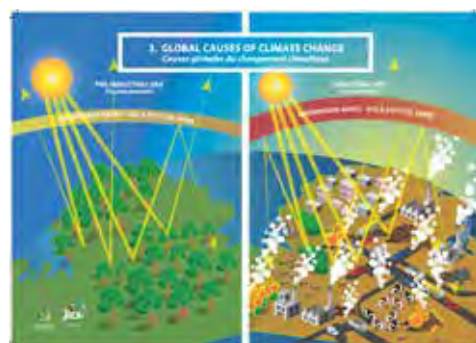


Figure 2.20 Panel 3: Global Causes of Climate Change

- 4) ‘Agriculture practices in Maurits’ which shows climate change impacts on agriculture as well as the unsustainable and sustainable practices in this sector;



Figure 2.21 Panel 4: Agriculture Practices in Maurits

- 5) ‘State of forests and nature conservation in Maurits’ which illustrates the importance of forests as well as the unsustainable and sustainable practices in this sector;



Figure 2.22 Panel 5: State of Forests and Nature Conservation in Maurits

- 6) ‘Marine and coastal environments in Maurits’ which depicts climate change impacts on the marine and coastal environments as well as the unsustainable and sustainable practices in this sector;



Figure 2.23 Panel 6: Marine and Coastal Environments in Maurits

- 7) 'Urban development in Maurits' which shows unsustainable and sustainable practices in cities/towns;



Figure 2.24 Panel 7: Urban Development in Maurits

- 8) 'Adaptation and mitigation measures that can be promoted in Maurits' which illustrates adaptation and mitigation measures which can be promoted to combat climate change; and



Figure 2.25 Panel 8: Adaptation and Mitigation Measures that can be Promoted in Maurits

- 9) 'A climate resilient and sustainable Maurits' which shows the sustainable practices which can be adopted.



Figure 2.26 Panel 8: A Climate Resilient and Sustainable Maurits

3. 3D digital model of Mauritius

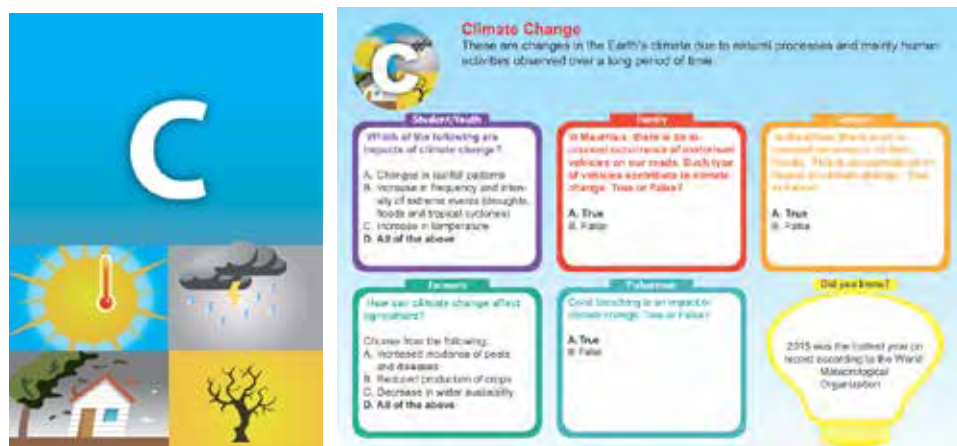
The effect of sea level rise of Mauritius Island is shown on Google Earth, which has real images of Mauritius. The model shows the sea level rise every (one) meter from one meter to 10 meters maximum. This visual aid enhances understanding of climate change vulnerability in Mauritius.



Figure 2.27 Sample Screen Shots of the 3D Digital Model of Mauritius

4. Climate change card game

The card game is inspired by a Japanese traditional card game. It is a tool to enhance knowledge of facts, terms and vocabularies relating to climate change. The game has 26 alphabet (A to Z) graphic cards and 26 script cards. Each script card provides a definition of the term, Q&A for specific target groups and ‘did you know’ which explains additional information relating to the term.



(Left: Alphabet Card, Right: Script Card)

Figure 2.28 Sample of the Card Game

5. Banner

The banner has four different topics: explaining climate change; causes of climate change; negative effects of climate change; and the actions to combat climate change.



Figure 2.29 Sample of the Banner

The quantity of the materials printed in outsourcing is as follows (additional printing such as manuals will be in-house printing). Some materials were distributed during the launching and the rest of the materials will be distributed on specific occasions such as official trainings and campaigns, and also to relevant organisations.

Table 2.14 Quantity of Sensitisation Materials Printed

Item	Distribution				Total
	launching	Official trainings	Campaigns	Relevant organisations	
Video clip (DVD)	200	100	600	2,000	2,900
Panels (A2)	20	-	-	200	220
Panels (A4)	-	100	-	30	130
Panels manual	20	100	-	-	120
3D model (CD)	20	100	-	2,000	2,120
Card game	20	100	-	650	770
Banner	2	-	-	1	3

All the sensitisation materials will be uploaded on the MOESDDBM's website.

b.3 Train the trainers – teachers, community, women and youth leaders – to conduct public awareness activities. (Activity 2-4)

Two days pilot trainings were conducted in November and December for three different target groups; youth leaders, women leaders and teachers. The purposes of the pilot training were to validate the contents of the materials and discuss the best approach to use the materials for future awareness activities and training. The details are as attached.

Table 2.15 Summary of the Pilot Training

Target group	Date and participants	Programme
Youth leaders	19 November: 22 participants 20 November: 24 participants	<First day> - Background of the project - Introduction of the sensitisation materials - Explanation, viewing and feedback of the video clip and panels <Second day> - Explanation, viewing, playing and feedback of the 3D digital model of Mauritius and a card game
Women	23 November: 25 participants 24 November: 27 participants	
Teachers	09 December: 12 participants 10 December: 14 participants	



(Top: Women Leaders Pilot Training, Bottom Left: Youth Leaders Pilot Training, Bottom Right: Teachers Pilot Training)

Figure 2.30 Photos of the Pilot Training

**b.4 Conduct the awareness campaign with local communities and general public.
(Activity 2-5)**

Campaign for general public in December 2015 in order to disseminate the information on climate change.

Table 2.16 Summary of the Campaign

Target group	Date and participants	Programme
General public	15 December: 57 participants	<ul style="list-style-type: none"> - Video clip viewing - Explanation of the details of the clip by CP - Introduction of the other sensitisation materials - Discussion, Q&A



Figure 2.31 Photos of the Campaign for General Public

2.2 Achievements of the Project

2.2.1 Outputs and Indicators

a. [Output 1] Sectoral guideline / policies on climate change adaptation are established

a.1 Sectorial climate change related activities in various organizations are collected and reviewed. (Output 1-1)

Sectorial climate change related activities in various organizations are collected and reviewed as shown above (2.1.3, a.1).

a.2 Climate change policies in the country are reviewed. (Output 1-2)

Climate change policies in Mauritius are reviewed as shown above (2.1.3, a.1)

a.3 The contents of the Guideline are decided. (Output 1-3)

The contents of the Guideline were decided through consensus building with the stakeholders as shown above (2.1.3, a.5).

a.4 Draft of guideline is established. (Output 1-4)

The draft guideline was established through consensus building with the stakeholders as shown above (2.1.3, a.5).

a.5 Usage of draft guideline is monitored (Output 1-5)

MOESDDBM (CCD) is attempting to reflect the guideline to the relevant policies/schemes/others by sending the guideline to the cabinet as shown above (2.1.3,a.6). Based on the above information, it is confirmed that the draft guideline is about to be used by the C/P.

a.6 Proper utilization of guideline is recognized by key stakeholders (Output 1-6)

The C/P has been having communications/meetings with the stakeholders such as the S/C, Technical Committee and bilateral/multilateral meetings as shown above (2.1.3, a.5) to make the consensus building for the guideline.

a.7 50% of trainees understand the basic concept and major steps of vulnerability assessment. (Output 1-7)

82% of trainees understood the basic concept and major steps of VA in the training held in November 2014.

a.8 50% of trainees improve the ability of vulnerability assessment through data analysis using GIS. (Output 1-8)

59% of trainees improved their ability of VA through data analysis using GIS in the training session held in November 2014.

b. [Output 2] Climate change education and public awareness activities are enhanced

b.1 Three training of trainers are implemented for youth leaders, women and teachers by March 2016. (Output 2-1)

Pilot training for youth leaders, women and teachers were implemented three times, once for each group, in November and December 2015 (2.1.3 b.4). The official training with the materials approved by the Cabinet will be organized by CP after the launching of sensitisation materials.

b.2 60-90 participants (20-30 participants for each group of youth leaders, women and teachers) are trained. (Output 2-2)

65 participants (24 participants for youth leaders, 27 for women and 14 for teachers) were trained in the pilot training (2.1.3 b.4).

b.3 50 % of trainers gain knowledge of how to conduct sensitisation activities. (Output 2-3)

Overall, 81 % of youth leaders, 76 % of women officers and 73 % of teachers understood the messages of the materials and how to conduct sensitisation activities.

b.4 Five campaigns for general public, farmers/planters, fishermen, seniors and working adults are organized by March 2016. (Output 2-4)

Campaign for the general public was organized in December 2015 (2.1.3 b. 5). Campaign for the other target groups will be organized by CP after the sensitisation materials are launched.

b.5 Sensitisation materials such as a video clip, a 3D digital model of Mauritius, a card game and panels are developed for training and campaigns. (Output 2-5)

Sensitisation materials including a video clip, a 3D digital model of Mauritius, a card game, and panels were developed (2.1.3 b.3).

b.6 Capacity of CCD staff for sensitisation activities is enhanced. (Output 2-5)

Capacity of CCD staff for sensitisation activities is enhanced through the process of developing the sensitisation materials and organizing the trainings and campaigns.

2.2.2 Project Purpose and Indicators

The purpose and indicators for this Project are as mentioned in the table below.

Table 2.17: Project Purpose and Indicators of the Project

Project Purpose	Indicators
The capacity of the Government of Mauritius (GoM) to deal with climate issues is strengthened.	Implementation of sectoral guidelines and utilization of environmental education materials (sensitisation material) by this Project

The C/P has been building the consensus with stakeholders for the guideline base on the knowledge, skill and experience which are obtained through this project. Moreover, the C/P is attempting to reflect the guideline in policies/schemes in Mauritius as shown on 2.1.3a and 2.2.1a.

The sensitisation materials were approved in the cabinet in the middle of March 2016. Moreover, the C/P has been utilizing the materials for training sessions/campaigns as shown in 2.1.3b and 2.2.1b

Based on the information above, it is considered that the capacity of the Government of Mauritius (GoM) to deal with climate issues was strengthened through this Project, because the guideline and utilization of sensitisation materials were implemented.

2.3 History of PDM Modification

(1) From PDM Ver. 0 to PDM Ver. 1

The C/P ministry has changed appellation from MoESD (Ministry of Environment and Sustainable Development) to (Ministry of Environment, Sustainable Development and Disaster and Beach Management) MOESDDBM after the polls held on December 2014.

No major change has been observed and there is no change in the basic relation between the JET and counterpart organizations in terms of structural and functional aspects.

Table 2.18: Modification from Ver. 0 to Ver. 1

Ver.0	Ver.1
Achievement	
None	<ul style="list-style-type: none"> • Sectoral climate change related activities in various organizations are collected and reviewed. • Climate change policies in the country are reviewed. • The contents of the Guideline are decided and agreed in the 2nd Steering Committee held on 9th April 2015. • 82% of trainees understood the basic concept and major steps of VA in the 1st training held in November 2014. • 59% of trainees improved the ability of

	<p>VA through data analysis using GIS in the 1st training held in November 2014.</p> <ul style="list-style-type: none"> • Video clip (English, Creole and French version) and a 3D digital model of Mauritius are developed. • Design of a card game and panels is completed.
Remarks	
None	<ul style="list-style-type: none"> • The Draft Guideline is scheduled to be submitted to C/P by the end of June 2015. • Training of trainers for youth leaders and teachers are scheduled at the end of July 2015. • Sensitisation materials (a card game and a video clip) will be printed out and completed by the third week of July 2015.

(2) From PDM Ver. 1 to PDM Ver. 2

There is no modification made related to each of the outputs and activities. However, the PDM version was changed as the achievements of outputs were updated.

Table 2.19: Modification from Ver. 1 to Ver. 2

Ver.1	Ver.2
Achievement	
<ul style="list-style-type: none"> • Sectoral climate change related activities in various organizations are collected and reviewed. • Climate change policies in the country are reviewed. • The contents of the Guideline are decided and agreed in the 2nd Steering Committee held on 9th April 2015. • 82% of trainees understood the basic concept and major steps of VA in the 1st training held in November 2014. • 59% of trainees improved the ability of VA through data analysis using GIS in the 1st training held in November 2014. • A Video clip (English, Creole and French version) and a 3D digital model of Mauritius are developed. • Design of a card game and panels is completed. 	<ul style="list-style-type: none"> • Sectoral climate change related activities in various organizations are collected and reviewed. • Climate change policies in the country are reviewed. • The contents of the Guideline are decided and agreed in the 2nd Steering Committee held on 9th April 2015. • 57% of trainees understood the basic knowledge of GIS for VA in the 2nd training held in July 2015. • 71% of trainees have improved the ability of analyzing the data related to climate change in the 2nd training held in July 2015. • Sensitisation materials (a video clip, panels, the 3D model, and a card game) are being developed. • Teachers test training was organised on the 4th of August 2015.
Remarks	
<ul style="list-style-type: none"> • The Draft Guideline is scheduled to be submitted to C/P by the end of June 2015. • Training of trainers for youth leaders and teachers are scheduled at the end of July 2015. 	<ul style="list-style-type: none"> • The 1st Draft Guideline was submitted to C/P by the 1st September 2015 with some parts that remain to be completed. JET is waiting for the response of CCD and other stakeholders and additional analysis on

<ul style="list-style-type: none"> • Sensitisation materials (a card game and a video clip) will be printed out and completed by the third week of July 2015. 	<p>vulnerability analysis.</p> <ul style="list-style-type: none"> • Training of trainers for youth leaders, teachers and women as well as campaigns for general public, farmers/planters, fishermen, seniors and working adults are scheduled in November and December 2015. • Sensitisation materials (a card game and a video clip) will be printed out and completed prior to the training and sensitisation campaigns.
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(3) From PDM Ver. 2 to PDM Ver. 3

There is no modification made related to each of the outputs and activities. However, the PDM version was changed as the achievements of outputs were updated.

Table 2.20: Modification from Ver. 2 to Ver. 3

Ver.2	Ver.3
Achievement	
<ul style="list-style-type: none"> • Sectoral climate change related activities in various organizations are collected and reviewed. • Climate change policies in the country are reviewed. • The contents of the Guideline are decided and agreed in the 2nd Steering Committee held on 9th April 2015. • 57% of trainees understood the basic knowledge of GIS for VA in the 2nd training held in July 2015. • 71% of trainees have improved the ability of analyzing the data related to the climate change in the 2nd training held in July 2015. • Sensitisation materials (a video clip, panels, the 3D model, and a card game) are being developed. • Teachers test training was organised on the 4th of August 2015. 	<ul style="list-style-type: none"> • The contents of the Guideline have been agreed in principle after undertaking bilateral/multilateral meetings and Steering/Technical Committee with the key stakeholders. However, Chapter 4 remains to be modified. • Review Workshop has been undertaken on 19th and 20th November which was organized and hosted by C/P. • 24 participants attended the pilot training for youth leaders on 19th and 20th November 2015. 87% of participants have improved the knowledge of climate change. Overall 81 % of youth leaders understand the messages of the materials and understand how to use them. • 27 participants attended the pilot training for women officers on 23rd and 24th November 2015. 88% of participants have improved the knowledge of climate change. Overall 76 % of women officers understand the messages of the materials and understand how to use them. • 13 participants attended the training for teachers on 9th and 10th December 2015. 90% of participants have improved the knowledge of climate change. Overall 73 % of teachers understand the messages of the materials and understand how to use them. • Awareness raising activity for general public was organised on 15th December

	2015. 57 people participated in the activity.
Remarks	
<ul style="list-style-type: none"> • The 1st Draft Guideline was submitted to C/P by the 1st September 2015 with some parts that remain to be completed. JET is waiting for the response of CCD and other stakeholders and additional analysis on vulnerability analysis. • Training of trainers for youth leaders, teachers and women as well as campaigns for general public, farmers/planters, fishermen, seniors and working adults are scheduled in November and December 2015. • Sensitisation materials (a card game and a video clip) will be printed out and completed prior to the training and sensitisation campaigns. 	<ul style="list-style-type: none"> • JET has responded to some of the comments received from the stakeholders. Additional technical inputs from JET are required to consolidate the draft guideline so that it reflect the expected output. • Official training of trainers for youth leaders, teachers and women as well as awareness raising activities/campaigns for general public, farmers/planters, fishermen, seniors and working adults will be organised by C/P with the support of JET in February/March 2016. • Sensitisation materials will be updated based on the comments from the training of trainers

2.4 Others


2.4.1 Result of Environmental and Social Consideration (if applicable)

The appropriate consideration has been made for the environmental and social impacts of the Project as agreed in the R/D.

2.4.2 Launching of the sensitisation materials

The launching of the sensitisation materials was implemented as shown below;

Table 2.21: Summary of the Launching of the Sensitisation Materials

Date, Time	31 st March 2016 14:00-15:00
Place	Sir Harilall Vaghjee Hall
Participants (Total : about 200)	<ol style="list-style-type: none"> 1) Senior Chief Executive, MOESDDBM 2) Minister of Ocean Economy, Marine Resources, Fisheries, Shipping and Outer Lands 3) Minister of Youth and Sports 4) Minister of Civil Service and Administrative Reforms, MOESDDBM 5) Delegate of UNDP 6) Delegate of French embassy 7) Delegates of international organization 8) Staff of related ministries agencies
Organizer	MOESDDBM
Programme	<ol style="list-style-type: none"> 1) Welcome Address (Senior Chief Executive, MOESDDBM) 2) Presentation of the sensitisation materials (JET) 3) Address (Minister of Ocean Economy, Marine Resources, Fisheries, Shipping and Outer Lands) 4) Address (Minister of Youth and Sports) 5) Address (Minister of Civil Service and Administrative Reforms, MOESDDBM) 6) Handing over of the sensitisation materials 7) Projection of the Video Clip on Climate Change produced under the Project
Photos	

3 Result of Joint Review

The project result is supposed to be jointly reviewed by the Mauritian and Japanese side; however, due to the limited time, the result of the review written in this Chapter for this Project was determined only by the Japanese side.

3.1 Result of Review based on DAC Evaluation Criteria

The Project has been evaluated according to Development Assistance Committee (hereinafter referred as “DAC”)Evaluation Criteria adapted from the JICA’s Project evaluation standard.

Table 3.1: Five Evaluation Criteria

Item	Viewpoint
Relevance	Relevance refers to the validity of the Project Purpose and the Overall Goal in accordance with the policy direction of the Government of Mauritius and the Japanese Official Development Assistance as well as needs of beneficiaries and target groups.
Effectiveness	Effectiveness refers to the productivity of the implementation process, examining if the inputs of the Project were efficiently converted into the Output.
Efficiency	Efficiency refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project.
Impact	Impact refers to direct and indirect, positive and negative impacts caused by implementing the Project, including the extent to which the Overall Goal has been attained.
Sustainability	Sustainability refers to the extent to which the Mauritian side can further develop the Project, and the benefits generated by the Project can be sustained in the policy, financial, institutional and technical aspects.

a. Relevance

The relevance of the Project is high. Mauritius is highly vulnerable and fragile to adverse effects of climate change, such as sea-level rise, and increasing and more intense extreme weather events. In this respect, GoM has made climate change adaptation a high priority. The GoM has been implementing various efforts on this issue. National Climate Committee was established in 1990. A Climate Change Action Plan according to the UN Framework Convention on Climate Change was prepared and the GoM is working on the sustainable development strategy, policy and action plan including climate change. Considering the above background, the GoJ implemented the AAP for Mauritius based on the Japan-UNDP Joint Framework for Building Partnership to Address Climate Change in Africa which was agreed in the Tokyo International Conference on African Development IV (TICAD IV), 2008.

This Project aimed to establish guidelines on climate change adaptation and enhance climate change education and public awareness activities which contribute to the activities related to the climate change implemented by the Mauritian side as mentioned above.

b. Effectiveness

The outputs of this Project are establishing sectoral (coastal conservation) guidelines/policies on climate change adaptation (output 1) and enhancing climate change education and public

awareness activities (output 2). Each output involves mainstreaming the climate change adaptation systematically by making policies (guideline) and also enhancing awareness of the citizens. These outputs have direct effectiveness towards the climate change activities implemented in Mauritius.

For Output 1, the cooperation with the organizations related to the climate change measures as well as improvement in VA resulted in capacity development in both technical aspects and policies. As for Output 2, the capacity development on the method and planning related to the climate change education toward the citizens, consideration of the target groups and development of the sensitisation materials was achieved. Therefore, the Project was effective as the outputs have been attained at the required level and the Project purpose has been achieved.

c. Efficiency

[Input from Japanese side]

The input from the Japanese side was executed almost as planned. A change was made for the experts of [Data analysis] and [Environmental Education / ICT] where an additional one trip was added for each one during the Project as additional coordination / discussion was necessary with the C/P in Mauritius.

As for the Training in Japan, it was shifted from April~May 2015 to July~August 2015 as the schedule of the visiting organizations could not be secured. The contents of the training included a visit to the authorities, research institutes and private sectors related to the adaptation strategies for climate change in Japan. The purpose was to see and learn the system and policies of climate change (at the level of Ministry/ local government, case study of the local government, study on the regulation of the coastal setback, etc.), VA (research on climate change/sea level rise, Global/Regional Climate Model, downscaling, observing super-computer) and environmental education activities (facilities, examples, materials (tools), program study, etc.) which led to the capacity development of the C/P.

The equipment was purchased after the discussion with the C/P considering the existing equipment possessed by the C/P as well as the Project details.

[Input by Mauritian side]

There was a reorganization of the ministries after the election (2014) though there was no personnel shuffle involving the C/P. Also, the C/P, which has a sufficient number of staff with moderate skills level, were stationed in the division. The participation of the C/P for the workshops, trainings and seminars was sufficient, and there was also the participation from other related sectors when necessary. Furthermore, the necessary arrangements (office space for the JET, permits application for the business trip, etc.) was made by the C/P during the Project period.

Therefore, the efficiency of the Project can be accepted as high.

d. Impact

The Guideline for the Climate Adaptation Strategy (Coastal Setback) was approved by the Cabinet in May 2016. Furthermore, the launching of the sensitisation materials was organised by the C/P in March 2016. It was participated by the related Ministers and delegates from the

international organizations, and the activities related to the education on climate change were introduced as well as transmitted by the mass media in Mauritius. Therefore, the positive impacts of this Project can be recognised. Through this Project, the condition for achieving the Overall Goal has been well-regulated, however; a certain period of time will be necessary. In case of Output 1, preparation of the data (higher resolution, accumulation of the monitoring data, etc.) is indispensable for the implementation of the higher accuracy VA. At least five years will be needed to update the result of the assessment, as it has been mentioned in the guideline. In case of Output 2, although the C/P are well experienced in developing sensitisation materials related to climate change, more experience may be necessary to develop materials which require a new method. The capacity development on the climate change can be expected for all of Mauritius if the C/P is able to disseminate the knowledge or skills obtained through this Project to the other related organizations such as NGOs and private sectors.

e. Sustainability

[Policies/System]

Many policies, frameworks and action plans related to climate change have been undertaken since the establishment of the National Climate Committee in 1990.

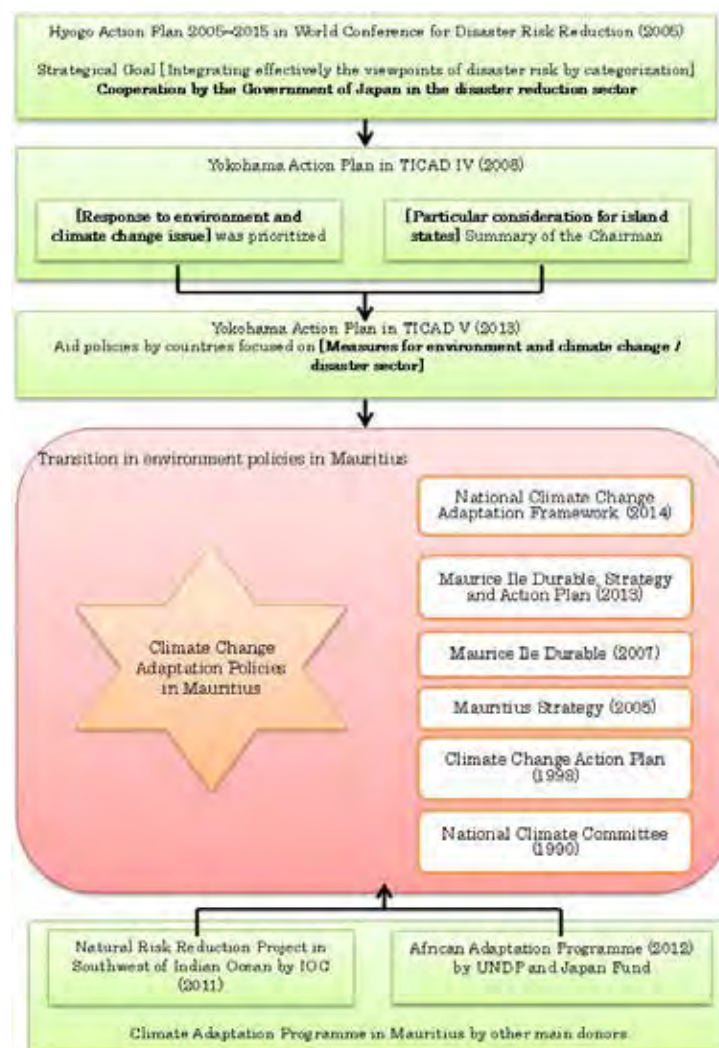


Figure 3.1: Framework of Japanese Aid and Correspondence of the other Donors

The sustainability is rather definite as CCD is considering utilizing the outputs of this Project in mainstreaming the climate change adaptation.

NCCAPF was schemed in 2012 as one of the activities for the AAP by the GoM. In order to implement the NCCAPF, the GoM established the Climate Change Information, Education and Communication Strategy and Action Plan in 2014 which focused on the capacity development of organizational system. Considering these efforts by the GoM, the sustainability can be expected in future.

[Technical]

In the activities related to the Output 1, existing data were used for the analysis and VA though the result achieved was not really accurate as most of the data and information was outdated. Therefore, the technical transfer made in this Project was not to introduce the assessment which requires difficult analysis but to transfer technical knowledge and skills which are sustainable and can be applied using the existing data.

For the activities related to the Output 2, JET has been working with C/P for the whole process of production and utilization of the sensitisation materials which gave them sufficient skills in developing the materials and implementing sensitisation activities. Therefore, the C/P can continue implementing the sensitisation activities all by themselves which will sustain the outcome of this Project.

3.2 Key Factors Affecting Implementation and Outcomes

There was a discrepancy for some time between JET and the C/P regarding the management policies of the Project. This is a technical transfer Project in which the main purpose is to transfer the knowledge, skill and experience to achieve an 'output' through a 'process' from JET to the C/P through the collaboration work. The C/P is used to the projects where the output is entrusted to the consultant or contractor¹³ and the same tendency was experienced for this Project. Due to this reason, there were difficulties in the collaboration work with the C/P as they are expecting the output rather than the process from JET.

The supervision method using monitoring sheet was introduced in this Project. The PDM was supposed to be completed with the C/P when the Project started as it was incomplete when the R/D was concluded. The completion of the PDM proceeded according to the flow-chart of the Project though the works were focused more on the activities of each output rather than the completion of the PDM as the Project started.

3.3 Lesson Learnt

Based on the issues mentioned above, JET made an effort in building an environment in which the C/P can take the initiative for each output. JET continuously explained the importance of not only the outputs (guideline and enhancement materials) but also the process in undertaking each output. In particular, JET frequently discussed the progress, issues and the solution of the Guideline with the C/P. The flow work, in which the draft of the guideline was prepared by JET then amended by the C/P, was formed later in the Project.

On the other hand, based on the issue that occurred during the preparation of the PDM, the

¹³ Site survey, compiling data, analysis using GIS, and detailed consideration of the recommendation to the government is usually entrusted to a third party. The role of CCD is the supervision of the work and CCD usually does not get involved in the specific work.

preparation of the monitoring sheet was assisted by the local consultant of the Project during the absence of JET. As a result, the monitoring sheet was able to be prepared every three months.

3.4 Future Tasks and Recommendation

The future tasks for the C/P would be the update of the guideline, further development of the sensitisation materials and implementation of awareness raising activities based on the knowledge, skills and experience obtained through the implementation of this Project. If necessary, support shall be given to the Mauritian side in the planning and monitoring of the activities towards achieving the Overall Goal mentioned in the next chapter.

4 For the Achievement of Overall Goals after the Project Completion

4.1 Prospects to achieve Overall Goal

The overall goal of the Project is set as “The implementation of climate change adaptation measures is enhanced”. This goal can be achieved through the accumulation of activities on various themes of climate change adaptation measures by setting the Project purpose of “The capacity of the GoM to deal with climate change issues is strengthened”. As this Project has secured a high capability of the counterpart to achieve the Project purpose, with their long term action plan, the achievement of the overall goal will not be a big hurdle in the future.

4.2 Plan of Operation and Implementation Structure of the Mauritian side to achieve Overall Goal

The Figure 4.1 shows a conceptual image of the action plan for the overall goal, which is composed of two elements: time schedule and PDCA (Plan-Do-Check-Action) cycle. The time schedule shows the main points/objectives of each year. The PDCA cycle part has a vertical and horizontal axis. The former indicates breadth of the effort. The latter is an indicator for the time and achievement level for the climate change adaptation. Based on the PDCA cycle, the activities can be well-rounded. Thus, accumulation of the activities can contribute to the achievement of climate change adaptation.

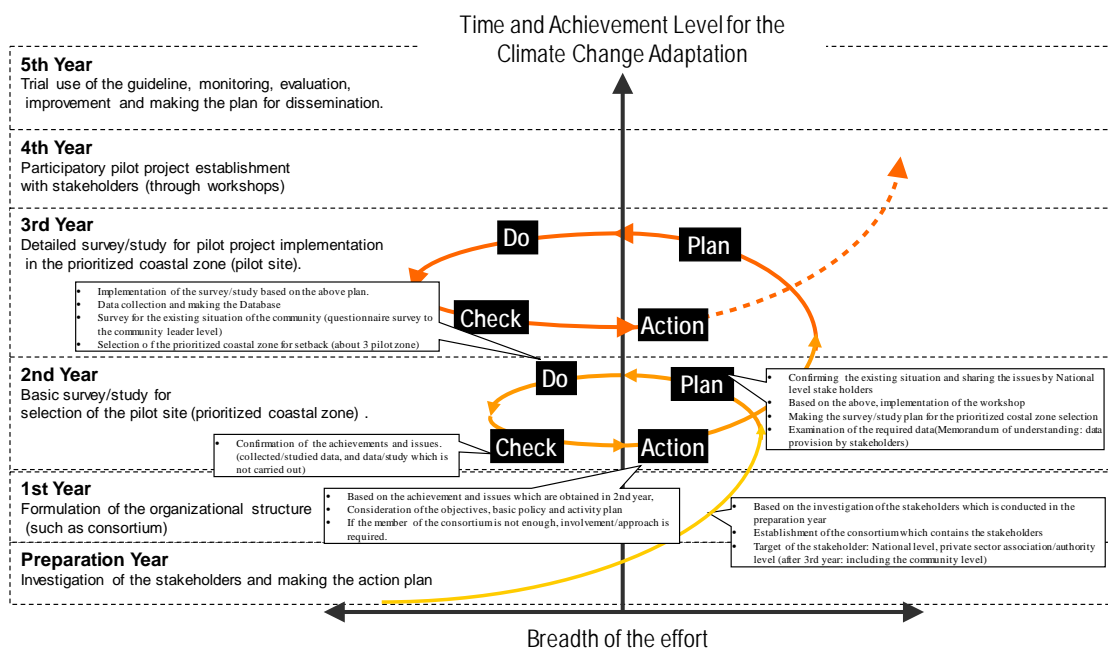
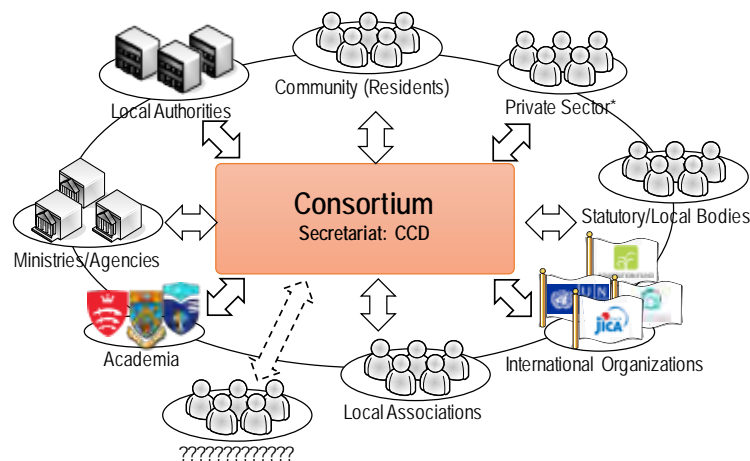


Figure 4.1: Conceptual Image of the Action Plan for Refining the Setback

Formulation of the organizational structure for the overall goal such as a public-private consortium is required. Figure 4.2 shows an image of the composition of the public-private consortium. The related organizations such as ministries/agencies, local associations, international organizations, academies, statutory/local bodies, private sectors and local authorities should be involved in the consortium. Even if the involvement is insufficient in the initial phase, the continuous approach to the related organizations is required to get them to participate from the middle phases of the activities.



* Examples of private sectors: fishery cooperative, building contractors association, architects association, real estate companies association, developer association, travel agents association, etc.

Figure 4.2: Image of the Composition of the Consortium

4.3 Recommendations for the Mauritian side

4.3.1 Output 1: Sectoral Guideline/policies on Climate Change Adaptation are established

Mauritius has had continuous control of the development in the coastal area through the PPG. The 15 m setback designated by the MHL was used until 2005, and then it was revised to 30 m from HWM (High Water Mark) in 2004¹⁴.

According to the examination result through this Project, it seems that the effectiveness of setback regulation depends on the area. Furthermore, the effects of climate change are not fully considered in the current setback policy. Although the setback has been introduced in Mauritius, the future condition is hard to predict as climate change issues vary from time to time. Therefore, it is recommended to review the relevant policies and laws based on the achievements such as existing studies, projects, the above action plan, and others.

4.3.2 Output 2: Climate Change Education and Public Awareness Activities are enhanced

Sensitisation materials for climate change education and public awareness activities have been developed based on the inputs of the JICA Expert Team (JET), MOESDDBM and stakeholders as well as the comments from the pilot training participants. These materials should be utilized and updated through the awareness raising activities. These innovative and customized climate change sensitisation materials will help enhance climate change education and public awareness activities, and reduce risks and vulnerabilities at the end.

4.4 Monitoring Plan from the end of the Project to Ex-post Evaluation

Monitoring shall be carried out every year regularly in order to do the following: examine changes of the circumstances/situation of the climate change in Mauritius; manage/utilize the guideline and sensitisation materials; and implement the activities for the climate change

¹⁴ Design sheet of residential coastal development / resort hotel development in PPG, MHL, 2004
In addition, 81 m from the HWM is state-owned land (except for some areas) as defined by the Pas Géométriques Act.

adaptation appropriately. Past records of studies regarding the cause of the natural phenomenon, especially for climate change, is still insufficient in Mauritius. Therefore, the monitoring and evaluation activities shall be emphasized more for further guideline works and sensitisation activities