



Africa Adaptation Programme-
Republic of Mauritius:



Knowledge Fair on Climate Change

AAP Activities in Mauritius

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DoE, Ministry of Environment & SD

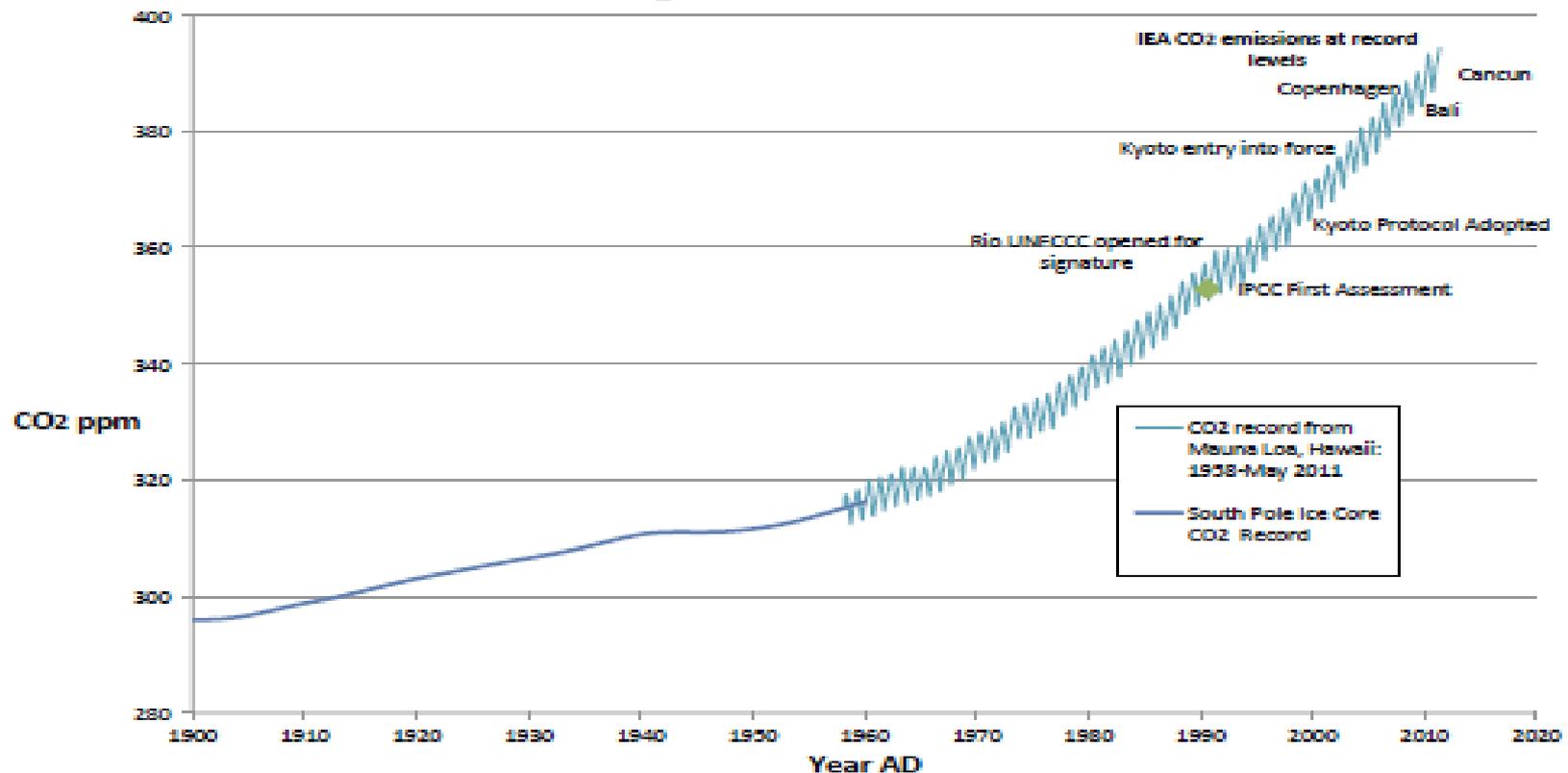
Outline

- Climate Change Science Update
- Observed and Projected Impacts for ROM
- Urgency to Act
- AAP Activities
- Snapshots of key AAP achievements
- Conclusion

Science update – CO₂ emissions

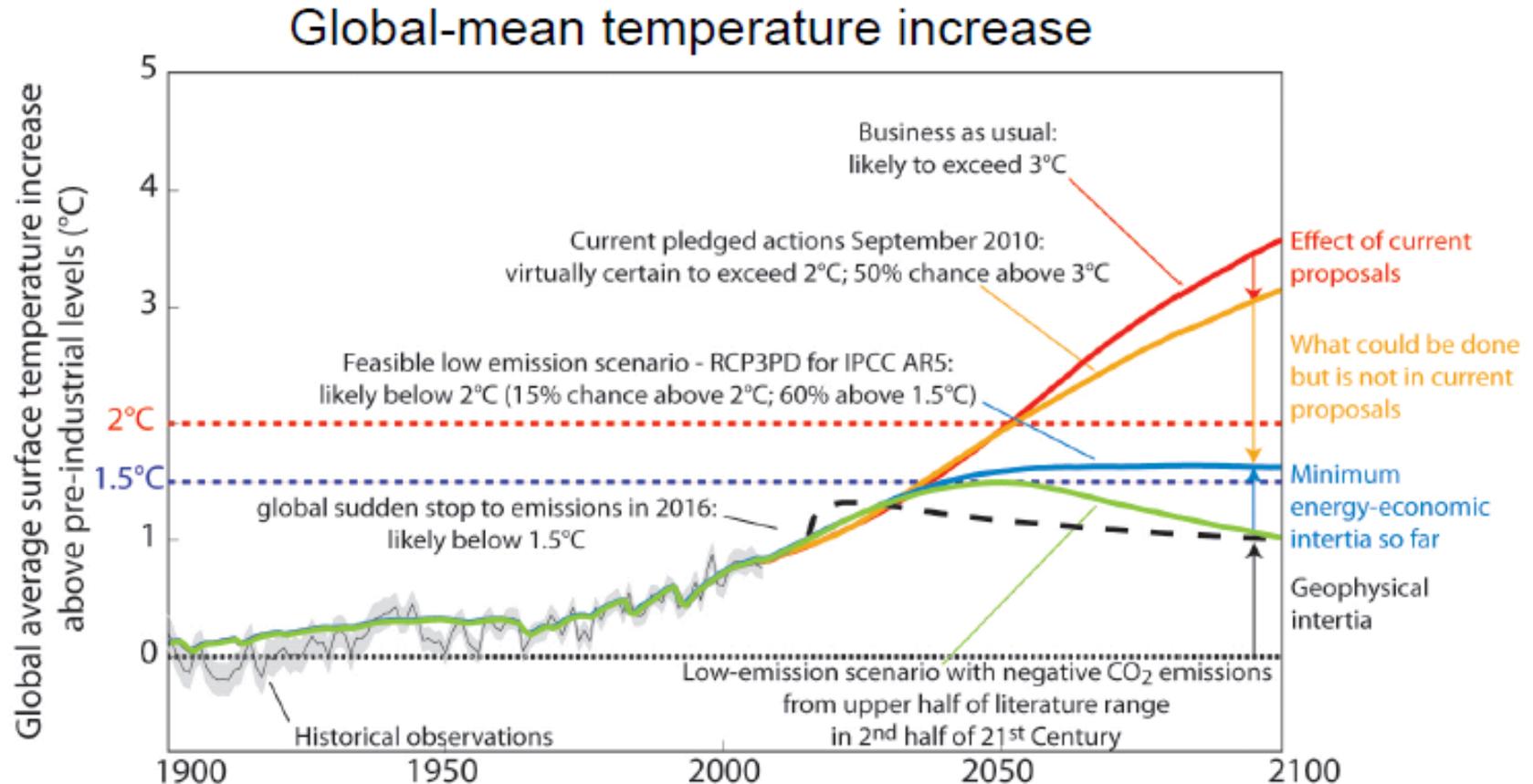
- CO₂ concentration is rising –over 390 parts per million (ppm) compared to 280 ppm two centuries ago.

CO₂ Concentration



Science Update – Surface Temperature

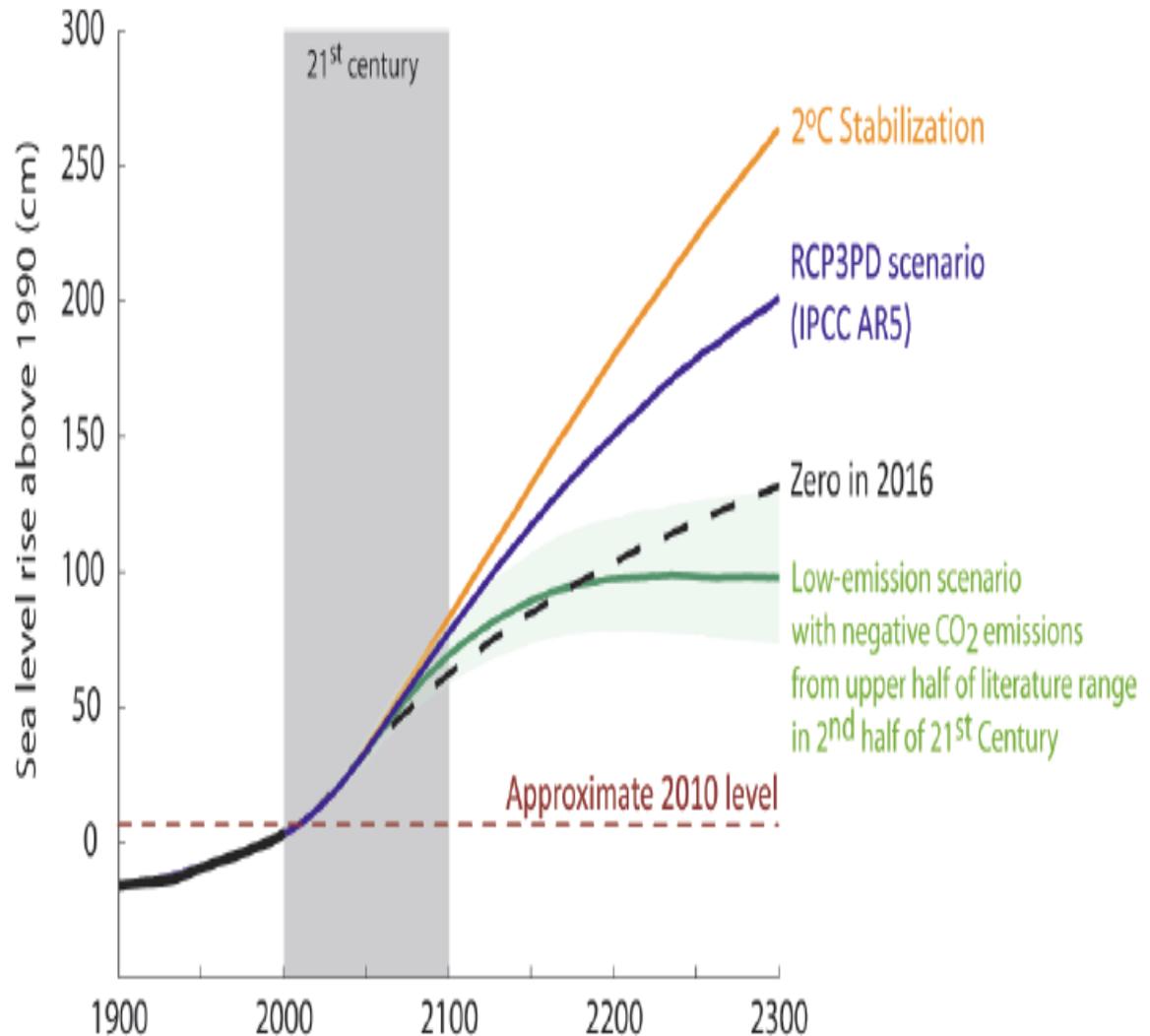
Is 1.5°C achievable?



Source: Climate Analytics, UNFCCC June 2011 session

Science Update – Sea Level Rise

- ❑ Accelerating ice loss from Greenland and Antarctic glaciers.
- ❑ Antarctic mass loss: more than doubled from 2002-2006 to 2006-2009
- ❑ Global sea level is projected to rise by 0.9-1.6m by 2100
- ❑ Science cannot exclude 2 m of sea level rise from ice sheet losses over next century



Some Observed & Projected Climate Change Impacts in Mauritius



- Observed impacts
 - Average temperature rose by **0.74°C** when compared to the 1961-90 mean.
 - Decreasing trend in annual rainfall of around **8%** over Mauritius since the 1950's.
 - Sea level has been rising by around **3.8 mm/yr** at Port Louis over last 5 years (compared to **2.1 mm/yr** in late 90's and early 2000 ; **1.2 mm/yr** in the 70's- 80's)
 - Significant **beach erosion** in the northwest, southwest and south of the island over last two decades. Loss in beach area amounts to some **18,500 m²**
 - Serious episodes of **coral bleaching** at Ile aux Benitiers, Belle Mare, Poudre d'Or and Albion.
 - **Infrastructure damages** in the coastal roads in Mauritius and Rodrigues
- Projected Climate/Impacts
 - Increase in average temp by **1-2 °C**, higher precipitation in **May- Oct** period
 - Reduction in sugar yield is expected to range from **47% to 65%** with an increase in temperature of 2°C.



Projected Impacts (Cont'd)

- The amt of utilisable water likely to decrease by **13%** by 2050.
- Live corals to be reduced by **80-100%** by the year 2100.
- Serious risks due to Flash Floods, Inundations, Landslides, Sea-Level Rise and Surges in certain areas. **5-70 km²** of built up areas, **19- 30 km²** of agricultural land, **2.4-3 km** of motorway, **18-29 km** of main roads and **68-109 km** of secondary roads are exposed to flood hazard. The estimated costs of damage from flooding in the next 50 years is estimated at Rs **101** billion while the cost of protection measures amounts to Rs 61 billion.

International/ National Context – Urgency To Act

- **Threats**

- Climate change is likely to threaten our hard-won development gains. Impacts are very likely to worsen in the for decades.

- **Urgency**

- Adaptation is no longer an option. Mauritius needs to forge a climate-resilient paradigm. Actions are urgently needed to enhance our resilience.
- We also need to start decoupling our economic growth from rising level of GHG emissions, that is, economic growth happens while greenhouse gas emissions decrease (Mitigation measures enabled)

Africa Adaptation Programme

- Government of Japan funded project - Rs 90 M (US \$ 2,987,004)
- Mauritius is one of the 20 participating countries
- Project Started January 2010 and ending in December 2012
- UNDP CO is the Implementing Agency.
- MoESD as lead Coordinating/ Executing Agency



Main Objective of AAP Mauritius

- mainstream climate change in our institutional frameworks and in core policies and development plans.

Strategic Outputs

- Introduction of long-term planning tools,
- Strengthening of leadership capacities and institutional frameworks,
- Review and formulation of climate-resilient policies and measures,
- Devising financing options, and
- Awareness raising, R& D as well as sharing of findings at all levels.

Africa Adaptation Programme



- **Status**

- 20 activities completed out of a total of 31 set for completion by December 2012
- Key Sectors covered: DRR, Agriculture, Education, Environment, Fisheries, Health, Infrastructure, Tourism and Water (Rodrigues).
- Key Stakeholders: MMS, MOAIFS, MoEd, MOF, MoGender, MoHQoL, MOT, MPI, MPU/ WRU, RRA and UOM
- AAP Mauritius has generated a wealth of knowledge – dissemination being done through various means



AAP activities

1. Policy Review and Action Plan Formulation

- Agriculture, Fisheries and Tourism in Mauritius & Water Sector in Rodrigues
- Disaster Risk Reduction and Management
- Formulation of Climate Resilient Legislation
- Mainstreaming of CC in the EIA, PER and ICZM processes
- National Climate Change Adaptation Framework

2. Capacity Building Activities

- Gender Mainstreaming of Climate Change
- Review and Development of Climate-Resilient Financing
- Training of Road & Building Engineers and Architects
- Training of Health Professionals
- Training on Knowledge Management
- Climate Modeling and Analysis
- Policy Review and Formulation

3. Outreach, Research & Development

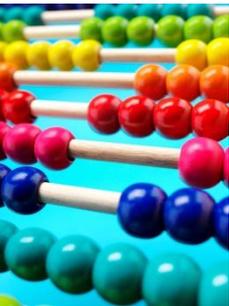
- Awareness Raising Week
- Interactive Climate Change Exhibition
- Knowledge Fair
- R & D on adaptation and coal ash
- Sensitisation of Primary and Secondary School Teachers

4. Long Term Planning Mechanisms

- Setting up of an Agricultural Decision Support System
- Setting up of Climate Data Server
- Setting up of Climate Information Centre

5. Demonstration Projects

- Coral Farming Activities in Mauritius and Rodrigues
- Enhancing Resilience of Planters
- Installation of Seawater sensors in Rodrigues and Sensitisation
- Setting up of Endemic Garden and Information Centre



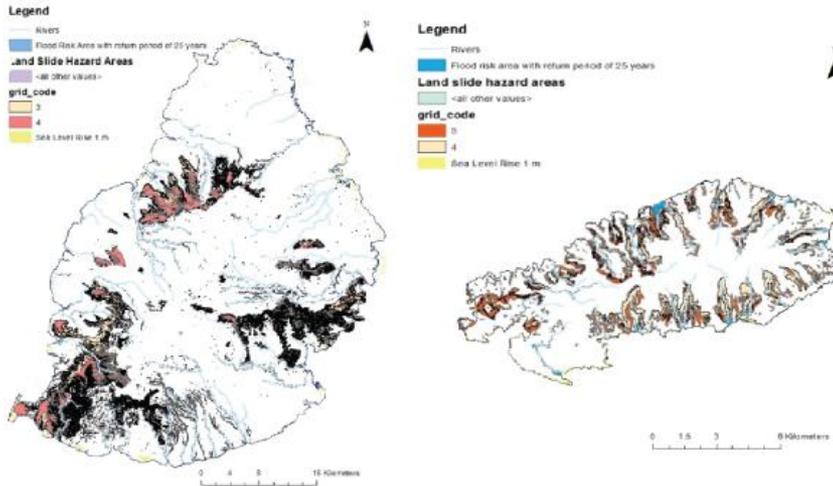
Snapshot 1: Long Term Planning Mechanism to Manage CC

Disaster Risk Reduction

DISASTER RISK REDUCTION AND MANAGEMENT IN THE REPUBLIC OF MAURITIUS

Formulation of National Risk Profiles as a result of climate change:

- Inundation Maps
- Flood Risk Area Maps
- Landslide Risk Area Maps



Examples of integrated maps for projected flooding, landslide and coastal inundation risks for Mauritius and Rodrigues

Zone	Economic value (millions MUR)				
	Exposed elements (RP 100 years)			Potential damages (statistical annual average)	
	Flood	Inundation	Landslide *	Flood	Inundation
MAURITIUS	69,732	75,588	242,200	1,175	466
RODRIGUES	985	935	11,800	51	26

* for landslide the exposed value is not related to any specific events (even if the identified landslides have high probability to become active in the next 100 years)

Table 4.3.5: Economic value of exposed elements and potential damages for Mauritius and Rodrigues.

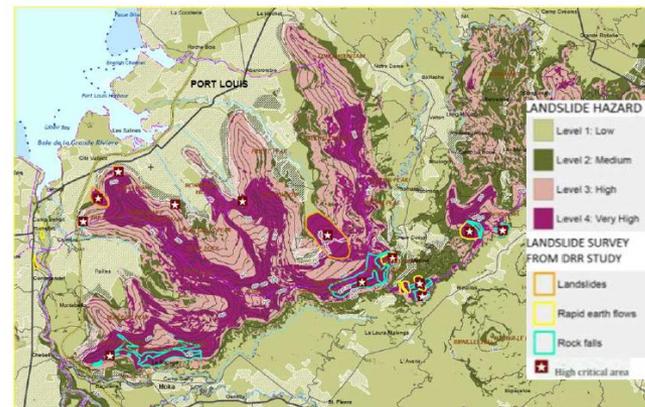
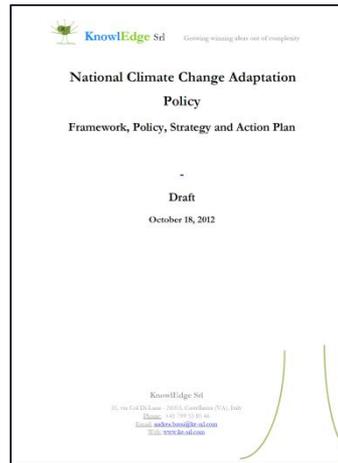


Figure 3.3.21: Results for the zone 1.



Snapshot 2 :

- National Climate Change Adaptation Framework



Policy Review

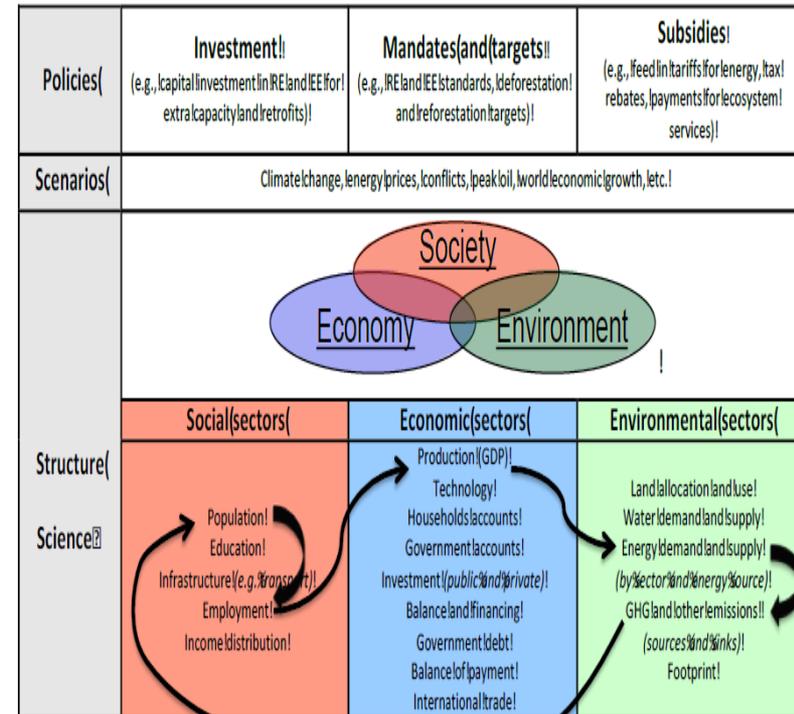
Table 8: Rainfall, harvested area, yield and production under BAU, No-regret and Best-case scenarios

Year	Rainfall	Yield	BAU		No-regret	
			Area	Prod	Area	Prod
2015	1,650	12	6,500	78,000	7,040	84,500
2020	2,000	12.6	7,040	88,730	7,750	97,730
2025	1,650	11	7,500	82,500	8,470	93,180
2030	1,300	11	6,050	66,550	9,180	101,030
2035	1,850	12.5	6,600	82,500	9,900	123,740
2040	1,650	11	7,600	83,600	10,610	116,750
2045	1,800	12	7,000	84,000	11,330	135,930
2050	1,820	12.8	7,200	92,160	12,040	154,140

Units: mm (rainfall), t/Ha (Yield), Ha (Area), t (Production)



Climate change effect	Confidence	Additional economic costs due to climate change (million USD PPP) - yearly average		Additional persons affected/in need of emergency assistance due to climate change - yearly average		Affected groups
		2010	2030	2010	2030	
Environmental Disasters						
Drought	Indicative	5	25	-	-	Arid regions, farmers
Floods & landslides	Indicative	-	-	1,500	1,500	Small children, pregnant women, elderly, river basins, small islands, mountainous communities
Storms	Speculative	25	150	500	400	Small islands, cyclone belt countries
Habitat Change						
Biodiversity	Indicative	5	20	-	-	Deforestation zones, farmers
Desertification	Indicative	-5	-40	-55,000	-150,000	Outdoor workers, farmers
Heating and cooling	Robust	1	20	-	-	Small children, elderly, pregnant women, humid tropical countries, Africa
Labour productivity	Robust	550	3,500	-	-	Humid tropical countries, outdoor occupations, subsistence farmers, pregnant women, elderly, heavily labouring workers
Sea-level rise	Robust	20	100	-	-	Small islands, low elevation coastal communities, coastal cities, farmers
Water	Speculative	-10	-65	-	-	Water intensive industries, outdoor workers, subsistence farmers



Snapshot 3

- National Climate Change Info Centre

CLIMATE CHANGE INFORMATION CENTRE

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graph TD; A[Global Climate Data] --> B[Data Server]; B --> C[Regional Climate Model]; C --> D[Outputs: Models, scenarios, projections, vulnerability and exposure];
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Key Functions

- Modeling, analysis and projections of climate change and reporting for the Republic of Mauritius
- Awareness raising and dissemination of information on mitigation and adaptation measures

Training Session for 42 participants from 16 institutions to undertake climate change analysis and modeling

Ministry of Environment and Sustainable Development

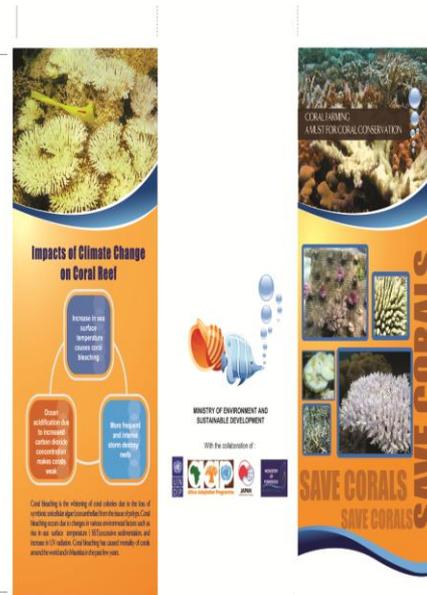
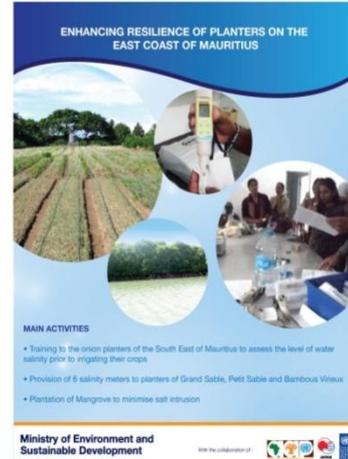
With the collaboration of:

African Adaptation Programme JAPAN UNDP

Snapshot 4: Demos

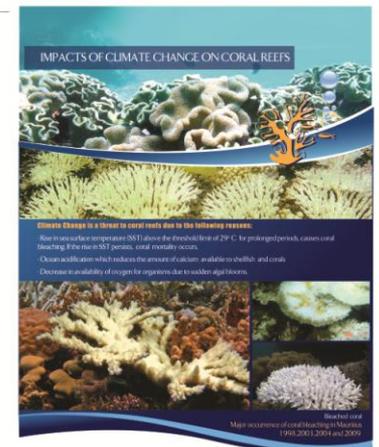
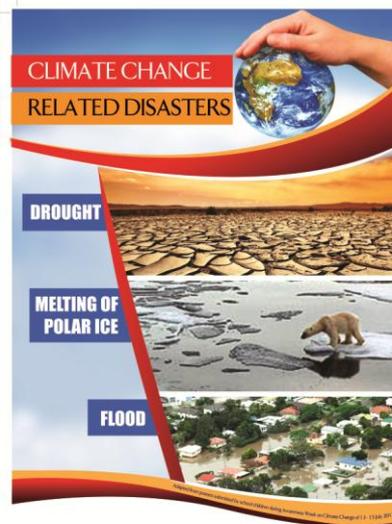
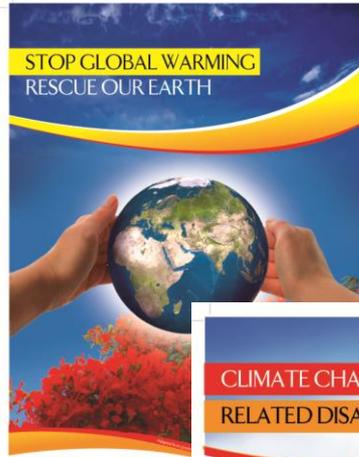
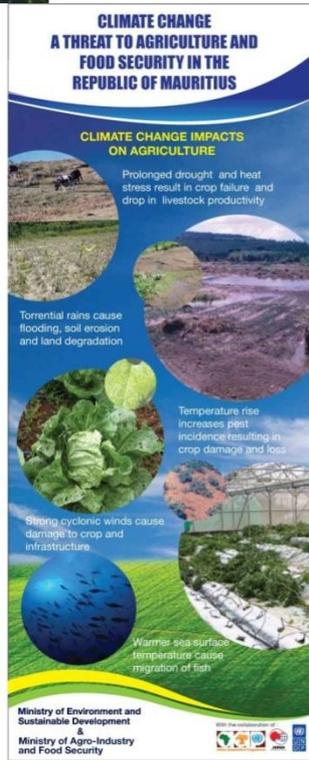
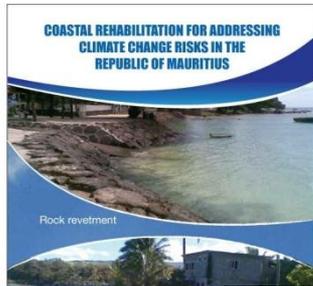
• Demonstration Activities:

- Rehabilitation of degraded reefs through coral farming at Albion, Pointe aux Sables and Trou aux Biches, and in Rodrigues at Graviers and Hermitage.
- Endemic garden and an Information Centre at Panchavati.
- Procurement of salinity meters and training to onion planters of the South East Coast.
- Setting up of sea water temperature monitoring systems Riviere Banane, Anse aux Anglais, Grand Baie, Plaine Corail and Pointe L'Herbe (Rodrigues).

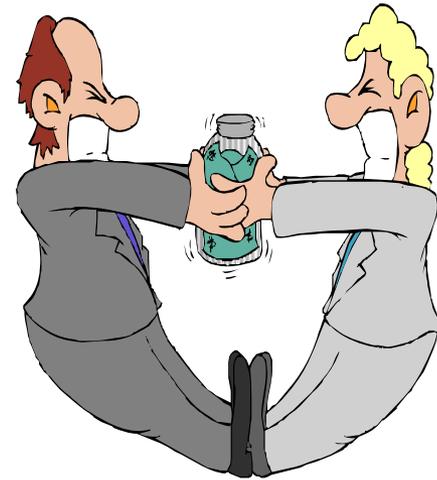


Snapshot 5: Awareness Raising

- Banners, Pamphlets, Flyers, Posters



Conclusion



Thank you!



CC Div, DoE, Ministry of Environment & SD - 29 Oct 2012