PACC MPR 2012 – NAURU

UNDERSTANDING CLIMATE CHANGE CONCEPTS

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Climate change refers to:

- **A change in the state of the climate** that can be identifies by **changes** in the mean and/or the variability of its properties, and that **persists for an extended period**, typically decades or longer

- **ANY CHANGE IN CLIMATE OVER TIME, WHETHER DUE TO NATURAL VARIABILITY OR AS A RESULT OF HUMAN ACTIVITY**

Climate Change

- Change in average climate conditions for an extended period of time

Human-Induced Climate Change

- Changes in climate attributed to human activity

Natural Climate Variability

- Changes in climate attributed to naturally occurring phenomenon

Climate

- Average trend of weather patterns for a given location

Weather

- Day to day climate conditions for a given location

Weather and climate time scales

Climate change

Climate variability

Weather

hours days months years decades centuries

Rain storm

Tropical cyclone

Wet season & dry season

El Niño - Southern Oscillation (ENSO)

Pacific Decadal Oscillation (PDO)

Global warming & ocean acidification

Source: CSIRO, PCCSP (2011)

DRM & CCA: What do these terms mean?

- DRM - the systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster (UNISDR)

- CCA - Adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects that moderate harm and exploit beneficial opportunities (UNFCCC)

cont'd...

- CCM - a human intervention to reduce the sources or enhance the sinks of greenhouse gases (UNFCCC)

Understanding the concepts

RESULT OF CLIMATE CHANGE

increased severity of storms

HAZARD

severe storm

HAZARD

flood or drought

IMPACT

loss of wildlife
loss of livelihoods

IMPACT

disease outbreak

IMPACT

damage to human settlements

corridor

adaptation

corridor

business as usual risk

reduction or conservation

RISK

The probability of harmful impacts, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

Risk = Hazards x Vulnerability.

Beyond expressing a possibility of physical harm, it is crucial to appreciate that risks are always created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes.

Vulnerability.

The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes.

Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.

Hyogo Framework for Action, 2005

UNFCCC

Framework Climate Change Convention, 1992

WMO

WMO Global Strategy + RA V Strategic Plan

Pacific DRR & DM Framework for Action, 2005

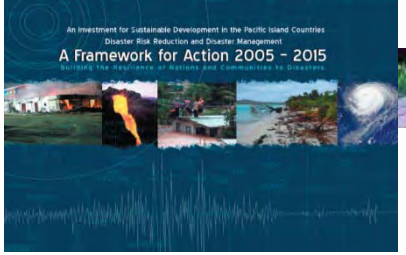
Pacific Islands Framework for Action on Climate Change, 2005

PMS

Pacific Meteorology Strategy 2012 - 2015

- **Implementing adaptation measures**
- **Improve understanding of climate change**
- **Knowledge, information, public awareness and education**
- **Understanding root causes of vulnerabilities and elements at risk**
- **Preparedness, response and recovery**
- **Early warning systems**
- **Reduction of underlying risk factors**
- **Sustained weather, climate, and early warning services**

Linkages of relevant global and regional frameworks



Theme 1:
Governance – organisational, institutional, policy and decision-making frameworks

Theme 2:
Knowledge, information, public awareness and education

Theme 3:
Analysis and evaluation of hazards, vulnerabilities and elements at risk

Theme 4:
Planning for effective preparedness, response and recovery

Theme 5:
Effective, integrated and people-focused early warning systems

Theme 6:
Reduction of underlying risk factors

Theme 1:
Implementing adaptation measures

Theme 2:
Governance and decision making

Theme 3:
Improve understanding of climate change

Theme 4:
Education Training and Awareness

Theme 5:
Contributing to global greenhouse gas reduction

Theme 6: Partnership and cooperation

Disaster Risk Management

Disaster Risk Reduction

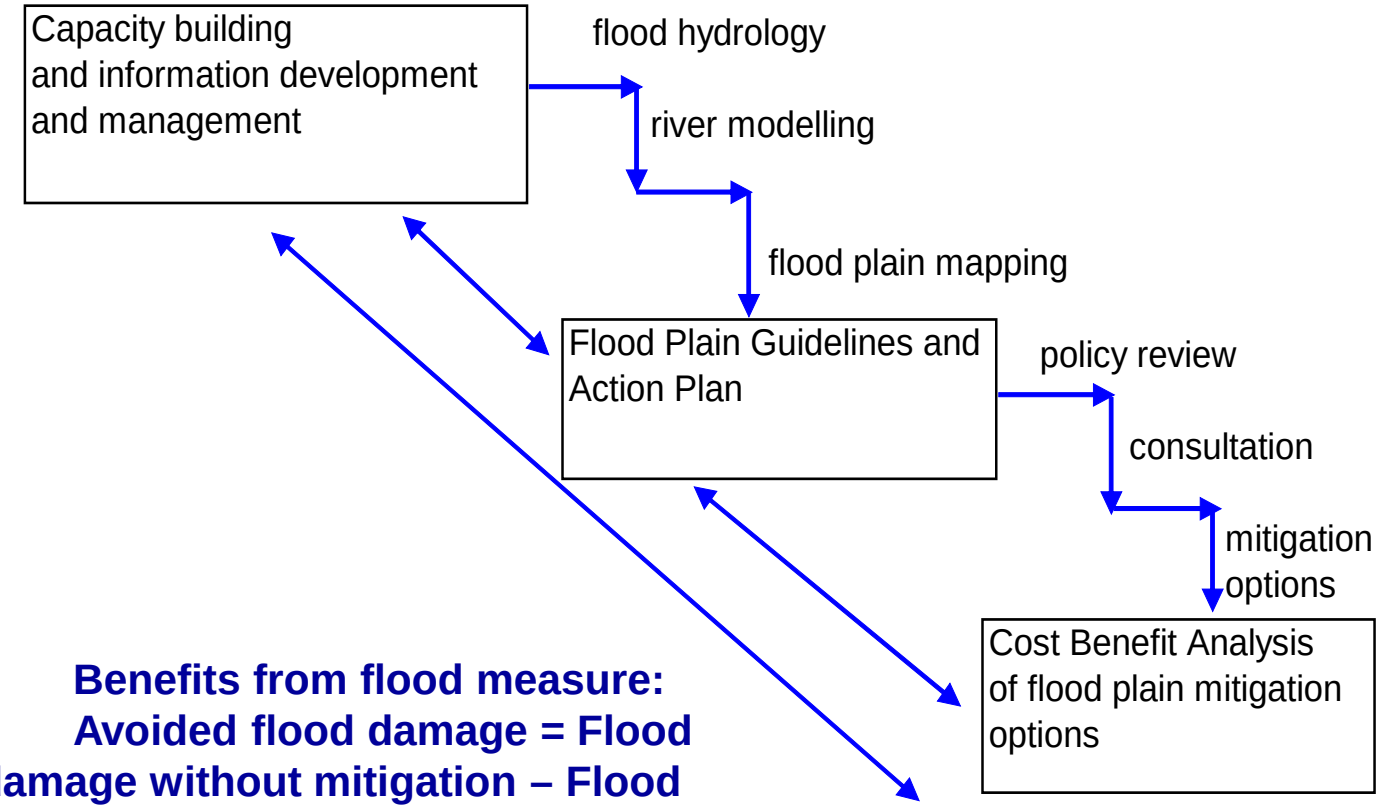
Avoid/Limit/adapt /transfer

Manage disaster

Disaster Management

Prevention	Mitigation	Preparedness	Response	Rec/Rehab	Recons
Irrigation	River dredging	Training for emergencies	Emerg coord	Restore power, water	Perm housing
Relocation of people from high risk areas	Land use policy	Effective EWS	Relief	Transp	Highways
vaccinations	Building codes	Community prepared	IDA		Bridges etc
	Disease resistant crops	Pre-position supplies	SAR		

Flood Management



Benefits from flood measure:
Avoided flood damage = Flood damage without mitigation – Flood damage with mitigation

Climate Futures

- *Group the projections into a set of climate futures,* e.g.
  - Warmer, wetter (9 models = 50%)
  - Warmer, drier (4 models = 22%)
  - Hotter, drier (2 models)
  - Hotter, much drier (1 model)
  - Warmer, much drier (1 models)
  - Hotter, wetter (1 models)
- *Projected changes in other climate variables can also be obtained from within this classification*

Source: CSIRO, 2011

Roadmap towards an integrated regional strategy for DRM and Climate Change by 2015

Purpose of the Roadmap

- Establish a way forward or a process for developing an integrated Pacific regional strategy for Disaster Risk Management, Climate Change Adaptation & Mitigation
- Suggests some key milestones and the formation of a Technical Working Group to facilitate the development of the integrated strategy plus:
  - Implementation arrangements – including financing and M&E
  - Best practice case studies in DRM, CCA and CCM

Expected Outputs...of Roadmap implementation

1. Integrated Pacific regional strategy for Disaster Risk Management, Climate Change Adaptation & Mitigation
2. Implementation arrangements for the integrated strategy
   - Financing
   - Monitoring & evaluation
3. Best practice case studies in DRM, CCA and CCM

4 Delivery Divisions

Climate Change

Waste Management and Pollution Control

Environmental Monitoring and Governance b

SPREP Strategic Plan 2011-2015

Biodiversity and Ecosystem Management

2011-2015 SPREP Strategic Plan

Climate Change

- **Adaptation**
- **Policy and Science**
- **Mitigation**