

*Philippine Climate Change
Adaptation*

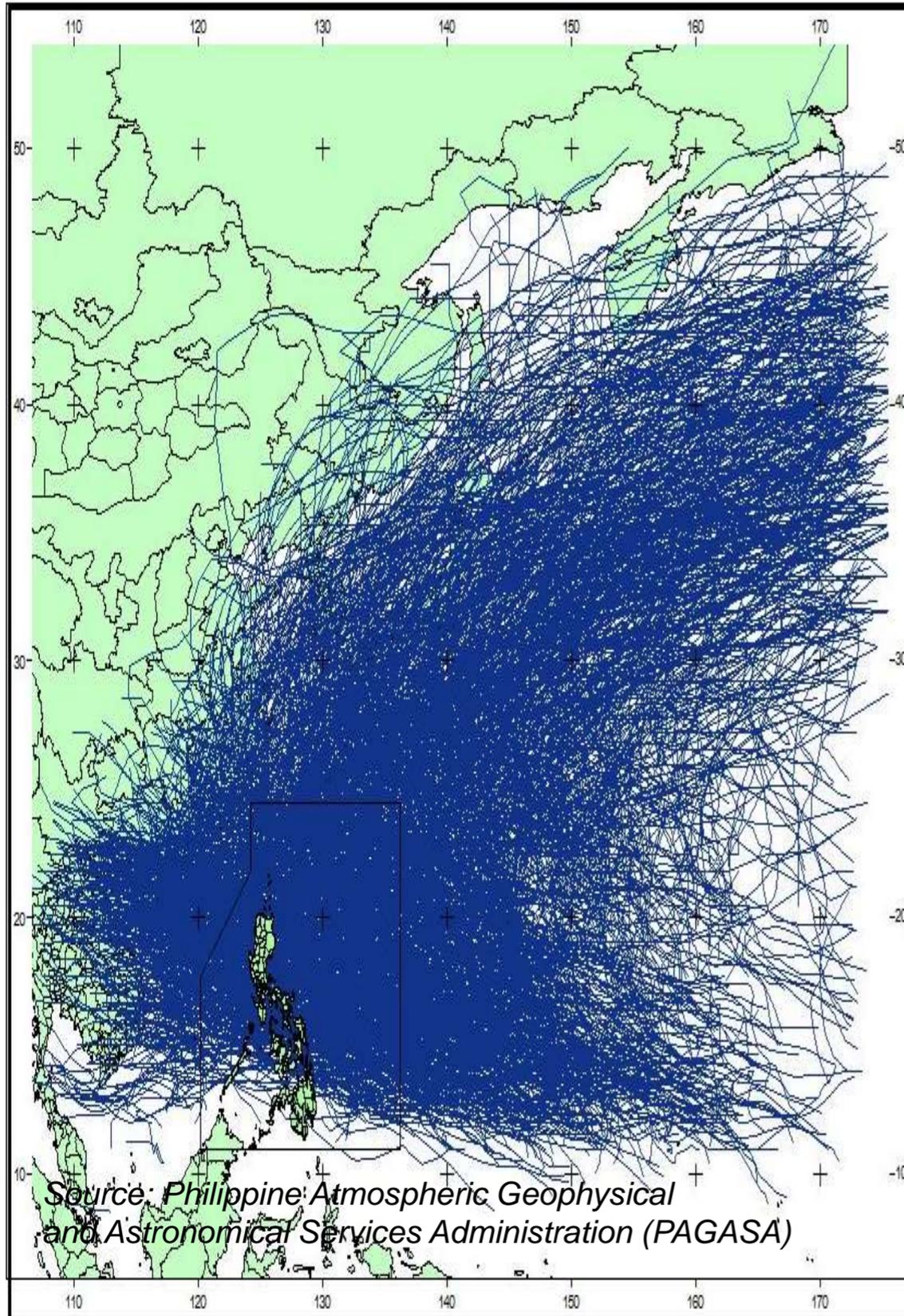


HELENA T. GADDI

OUTLINE

- **UNDERSTANDING IMPACTS**
- **TWO-PRONGED APPROACH**
- **INSTITUTIONAL STRUCTURE/RESPONSIBILITIES**
 - **Policies, Plans and Processes**
 - **Financing Climate Actions**
 - **Knowledge Generation and Management**
 - **Ensuring Progress**
 - **Raise Awareness and Taking Action**

PHILIPPINES AND CLIMATE CHANGE



- Observed mean temperature increase of 0.64°C from 1951-2000
- Increase in the number of cyclones passing through the central Philippines
- Dry season will become drier and wet season will become driver
- 5th most affected by extreme weather events (2015 Global Climate Risk Index)

TWIN GLOBAL OBJECTIVES TO ADDRESS CLIMATE CHANGE

ADAPTATION: Enhanced adaptive capacity of communities, resilience of natural ecosystems, and sustainability of built environment to climate change.

MITIGATION: Successful transition towards climate-smart development.

GOAL: To build the adaptive capacities of women and men in their communities, increase the resilience of vulnerable sectors and natural ecosystems to climate change, and optimize mitigation opportunities towards a gender-responsive and rights-based sustainable development.

Two-Pronged Approach:

Building Capacity and Delivering Action

Building Adaptive Capacity

Addressing institutional, legal, cultural, technical, fiscal and other barriers

Delivering Adaptive Actions

Implementing actions to address specific climate vulnerabilities
Choice and timing of some actions may depend on specifics of the climate projections

INSTITUTIONAL STRUCTURE

DOST (PAGASA)

Climate projections

KNOWLEDGE GENERATION & MANAGEMENT

- * CC risk/ vulnerability assessment (enabling environment, guidelines)

ENSURE PROGRESS

- * Monitor and evaluate programs and action plans

LINE AGENCIES and LGU

CC Service delivery

INSTITUTIONAL RESPONSIBILITIES

FORMULATE POLICIES & PROCESSES

- * Framework Strategy on Climate Change
- * National Climate Change Action Plan
- * Coordinate sectoral policies

RAISE AWARENESS AND TAKING ACTION

- * Guidance and clearing house

Shared responsibilities with:

Line Agencies

- Implement regional and local actions
- Engage stakeholders

Government Financial Investments

- Key development investments

DILG, NEDA

- Build local adaptive capacity

Philippine Information Agency

- Disseminate information

Centralized institutional coordination supported the *climate reform agenda*

POLICIES, PLANS AND PROCESSES

PHILIPPINE CLIMATE CHANGE POLICY

1991: IACCC Established (A.O. 220)	2010: Philippine Strategy on Climate Change Adaptation
1994: UNFCCC Ratified	
2000: Initial National Communication Submitted	2010: National Framework Strategy on Climate Change
2003: Kyoto Protocol Ratified	2010: Philippine National REDD+ Strategy
2004: DENR as Designated National Agency (EO 320)	2011: Cabinet cluster on Climate Change Adaptation and Mitigation (EO 43)
2006: Creation of the Inter-Agency Working Group and Program Steering Committee for the Adaptation to Climate Change	2011: National Climate Change Action Plan
	2011: Philippine Development Forum Technical Working Group (TWG) on Climate Change Adaptation and Mitigation
2007: Presidential Task Force on Climate Change created .	2012: Peoples' Survival Fund (RA 10174)
2009: Climate Change Act of 2009 (RA 9729) and creation of the Climate Change Commission	2014: Institutionalizing the Philippine Green House Gas Inventory Management and Reporting System (EO 174)

Republic Act 9729 Climate Change Act of 2009

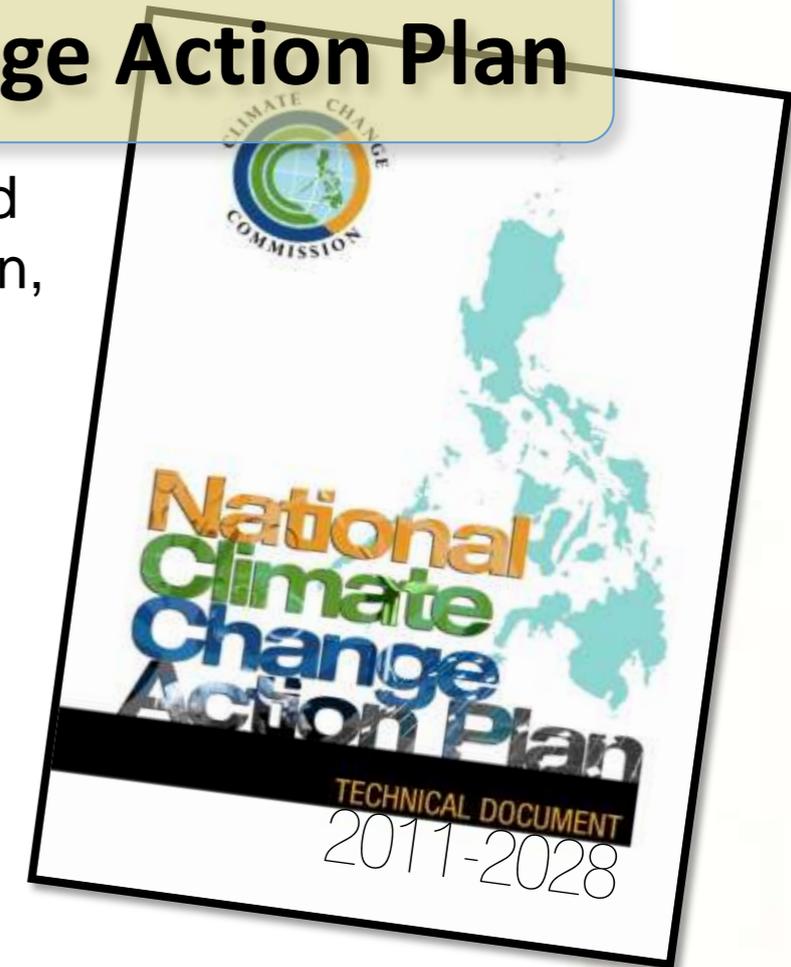
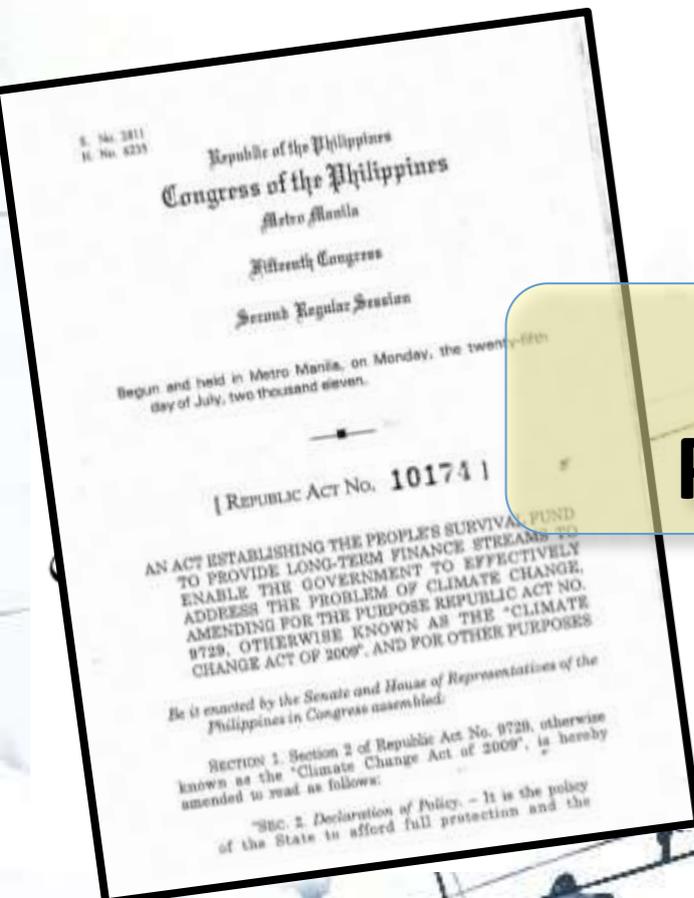
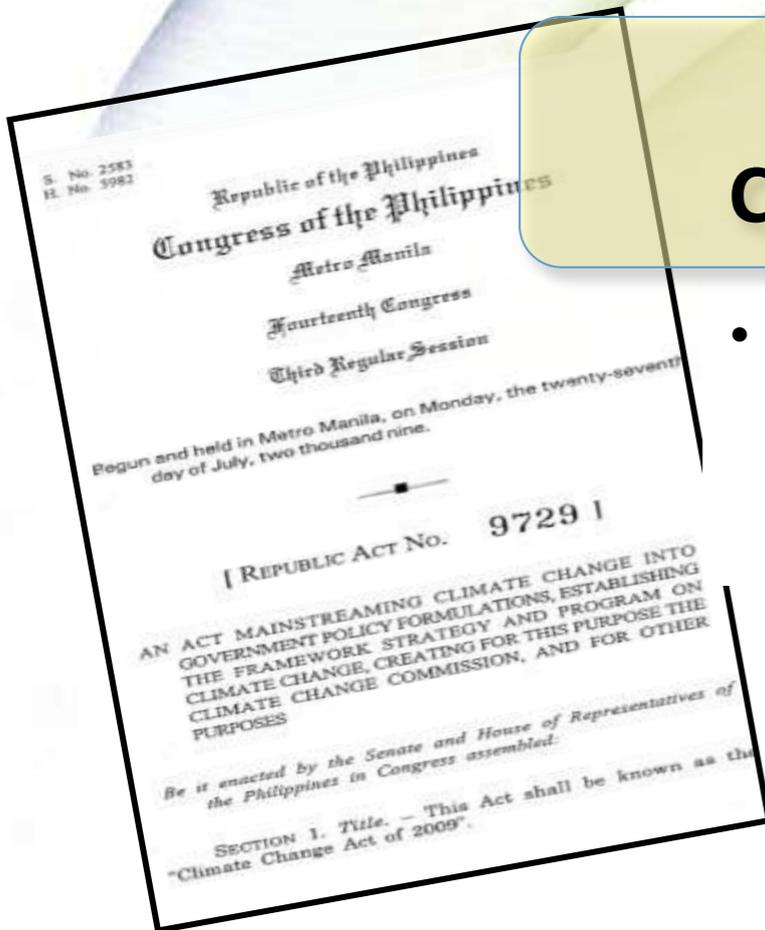
- Acknowledge that local government units are the frontline agencies in the formulation, planning and implementation of climate change action plans

National Climate Change Action Plan

- Outlines the specific long program and strategies for adaptation and mitigation, spanning across three political administrations

Republic Act 10174 Peoples Survival Fund

Provides funding support for climate change adaptation programs at the local level



NCCAP 7 THEMATIC AREAS

Intermediate Outcomes



Enhanced adaptive capacity of communities, resilience of natural ecosystems, and sustainability of built environment to climate change.

Successful transition towards climate-smart development.

Ultimate Outcomes

PDP, NCCAP and DRRM



S. No 3086
H. No 6985

Republic of the Philippines
Congress of the Philippines
Metro Manila

Fourteenth Congress

Third Regular Session

Begun and held in Metro Manila, on Monday, the twenty-seventh day of July, two thousand nine.

[REPUBLIC ACT NO. 10121]

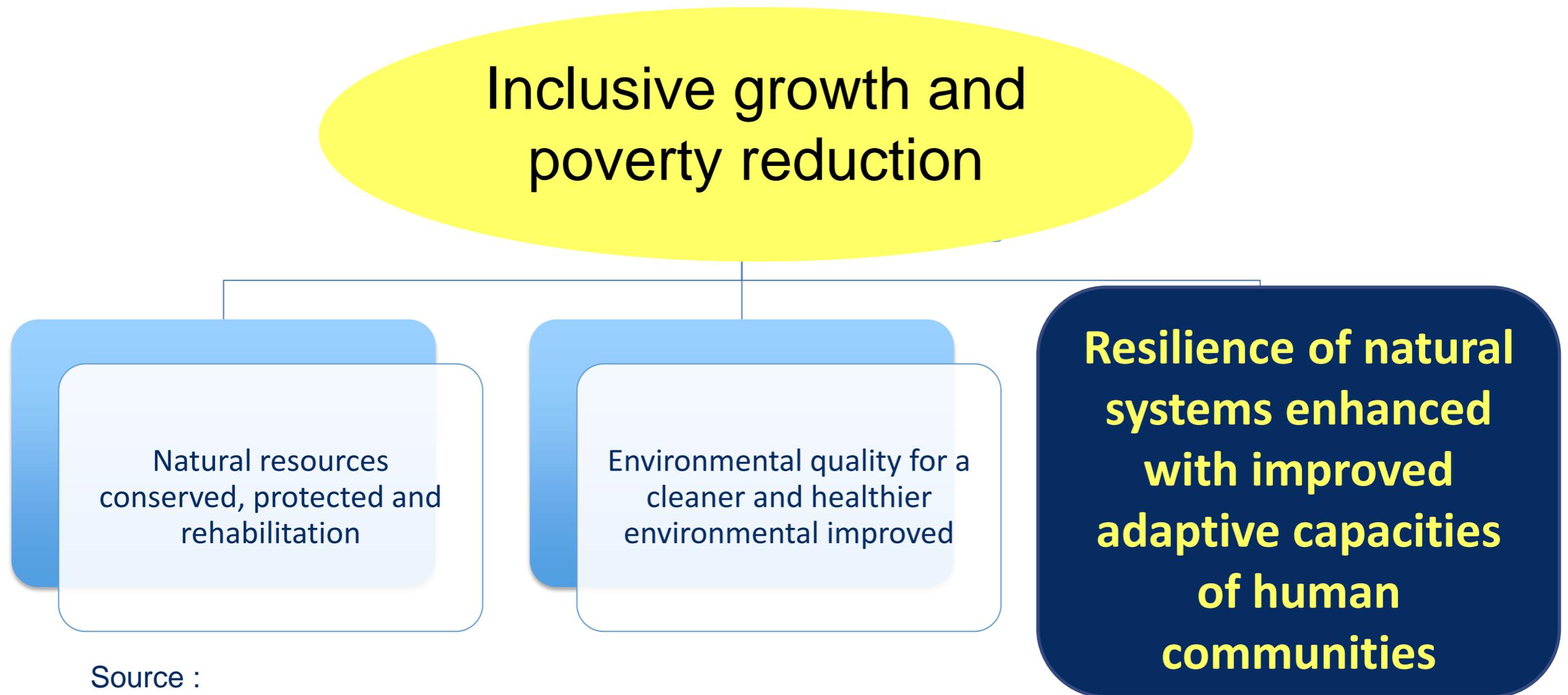
AN ACT STRENGTHENING THE PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT SYSTEM, PROVIDING FOR THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT FRAMEWORK AND INSTITUTIONALIZING THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT PLAN, APPROPRIATING FUNDS THEREFOR AND FOR OTHER PURPOSES

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. *Title.* – This Act shall be known as the “Philippine Disaster Risk Reduction and Management Act of 2010”.

NCCAP'S ALIGNMENT WITH THE PDP

Climate Change Adaptation and Mitigation in pursuance to the Social Contract



Source :
2011-2016 Philippine Development Plan
(Chapter 10: Conservation, Protection, and Rehabilitation of Environment and Natural Resources)

CABINET CLUSTER ON CLIMATE CHANGE



Adopting climate change adaptation and mitigation measures by local government units and their respective communities, national government agencies, and the general public; and ensure that these are incorporated in their annual work plans and budgets, where applicable.



Ensuring the utilization of natural resources for the equal benefit of the present and future generations

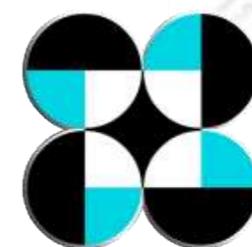


Formulating alternative and inclusive urban development plans, which ensure that people of varying income levels are integrated in productive, healthy and safe communities



Undertaking all other measures necessary to prepare for and manage risks and/or threats associated with natural and man-made phenomena such as, but not limited to, typhoons, earthquakes, tsunami, floods, landslides, civil disturbance and terrorism

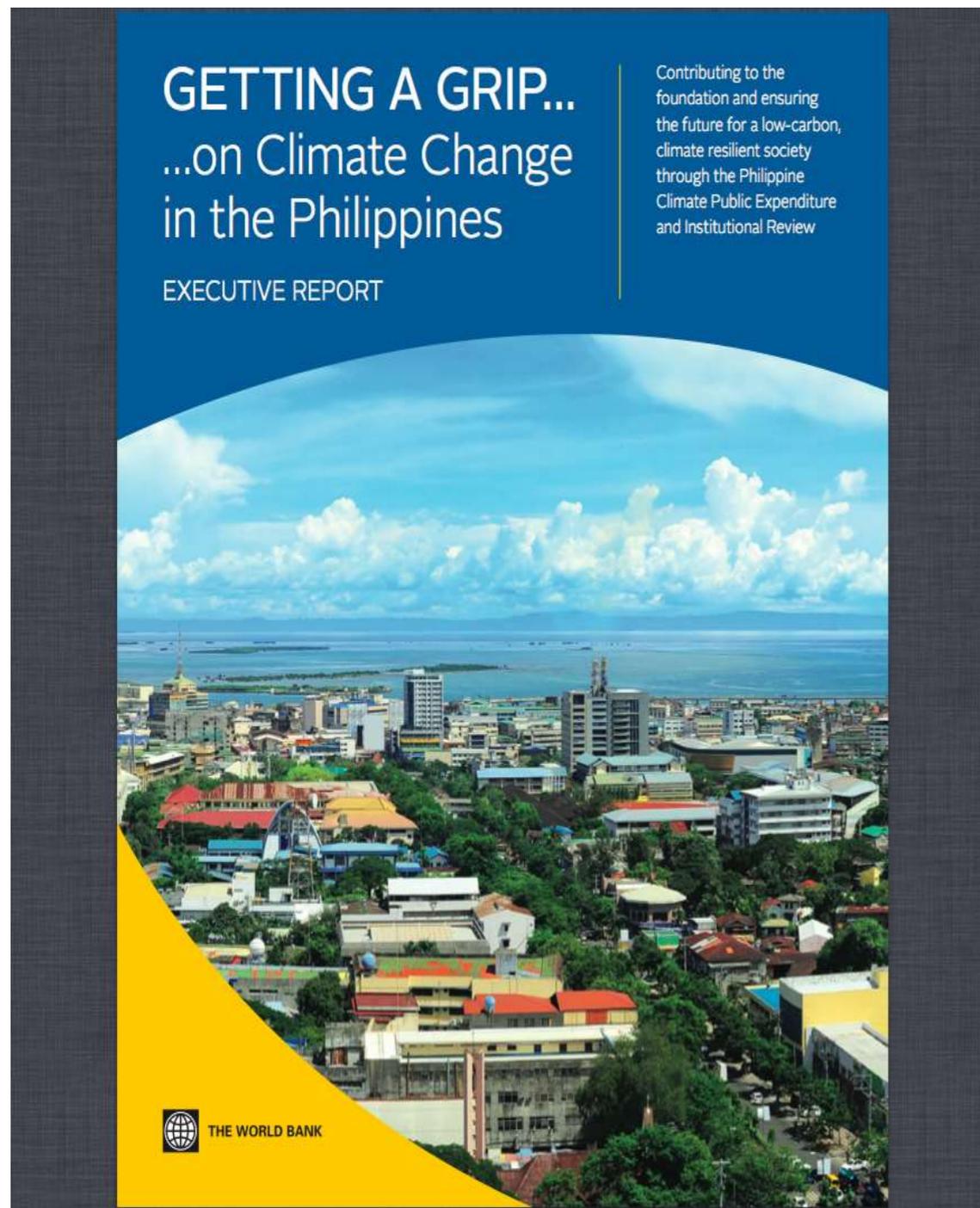
MASTER ROADMAP 2014-2015!



CHANGE (ADAPTATION AND MITIGATION)

FINANCING CLIMATE CHANGE ACTIONS

Climate Public Expenditure Review



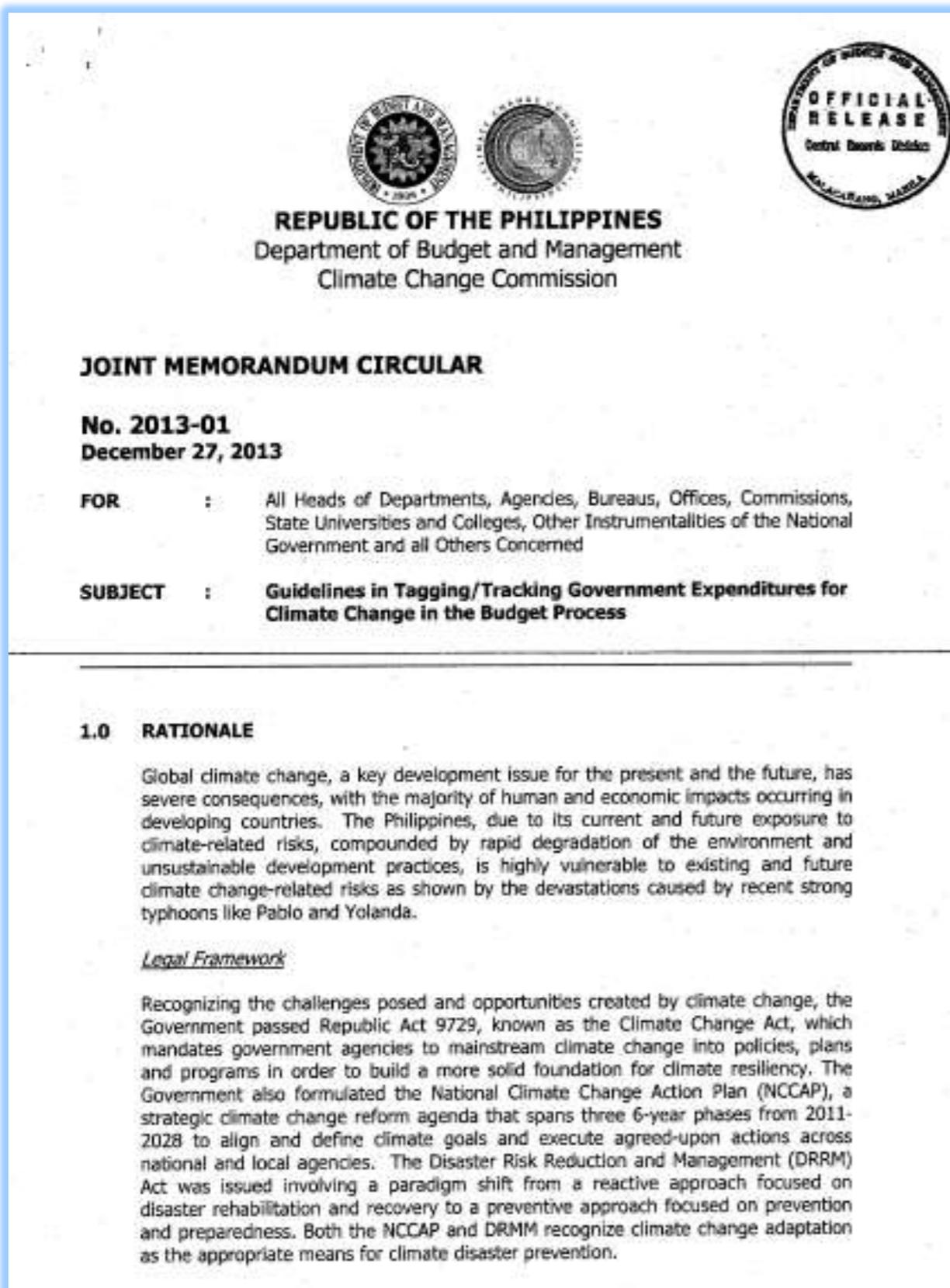
CPEIR is a study to assess gaps and accelerate implementation of the climate change agenda in the Philippines. This is envisioned to aid key agencies with major roles on CC policy making.

PEOPLES SURVIVAL FUND



- **Long term finance streams**
- **Expanded the composition of the advisory board of the Climate Change Commission to include the Finance Department**
- **Establishment of the PSF to support adaptation activities of local governments and communities**

NATIONAL CLIMATE CHANGE EXPENDITURE TAGGING



**Joint Memorandum Circular
issued by Department of
Budget and Management and
the Climate Change
Commission
Guidelines in tagging
government expenditures for
CC adaptation and mitigation
in the budget process
CCC developed typologies for
Adaptation and Mitigation
Issued for all national
government agencies,
commissions, state
universities and colleges**

LOCAL DISASTER RISK REDUCTION & MANAGEMENT FUND



**NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL
DEPARTMENT OF BUDGET AND MANAGEMENT
and
DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT**

Joint Memorandum Circular No. 2013-1

Date March 25, 2013

TO: PROVINCIAL GOVERNORS, CITY MAYORS, MUNICIPAL MAYORS, PUNONG BARANGAYS, MEMBERS OF THE SANGGUNIANG, LOCAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCILS, LOCAL DEVELOPMENT COUNCILS, LOCAL FINANCE COMMITTEES, AND ALL OTHER NATIONAL AND LOCAL GOVERNMENT OFFICIALS CONCERNED

SUBJECT: ALLOCATION AND UTILIZATION OF THE LOCAL DISASTER RISK REDUCTION AND MANAGEMENT FUND (LDRRMF)

1.0 Background

Republic Act (RA) No. 10121 (Philippine Disaster Risk Reduction and Management Act of 2010) granted local government units (LGUs) greater flexibility towards disaster mitigation, preparation, response, rehabilitation and recovery.

2.0 Purpose

This Joint Memorandum Circular (JMC) is issued to serve as a guide to LGUs in the allocation and use of the LDRRMF and to enhance transparency and accountability in the use of the LDRRMF.

3.0 Declaration of Policy

The recently approved National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028 shall become the basis in the preparation of Local Disaster Risk Reduction and Management Plans (LDRRMP) to be validated and accustomed to the local needs for prevention and mitigation, preparedness, response, rehabilitation and recovery.

Section 2 (e) of RA 10121 provides that it is the policy of the State to develop, promote, and implement a comprehensive NDRRMP that aims to strengthen the

**Joint Memorandum issued by
the NDRRMC, DBM and
DILG to serve as a guide to
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PROCESS: CCA-DRR TYPOLOGIES AND TAGGING

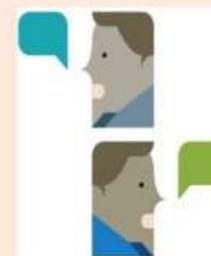
Planning and Activity Programming



Mainstreaming of climate change actions in Agency's plan, programs and activities

Budget Preparation

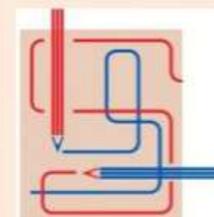
Budget Call



Agencies identify and tag its CC expenditure in BP Form 201F or DBM Form 712

Planning and Budgeting for Climate Change Response

Technical Budget Hearings



Agencies present a summary of its climate budget (if any) during TBH

Budget Accountability



Tracking climate budget execution using BFAR

Budget Legislation

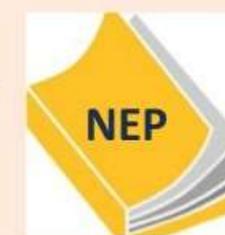


CC expenditure will be published in the Open Data Portal for transparency



Agencies will retag its CC expenditure and manually submit Form 201F or Form 712

Agencies will retag its CC expenditure and manually submit Form 201F or Form 712



ENABLING ENVIRONMENT : INSTITUTIONAL CONDITIONS



Peoples' Survival Fund



Academe

Private Sector

CSO



**KNOWLEDGE GENERATION AND
MANAGEMENT
(SCIENCE AND RISK BASED TOOLS AND
METHODS)**

UNDERSTANDING OF VULNERABILITIES AND IMPACTS TO CLIMATE CHANGE



MAINSTREAMING IN LOCAL PLANS



Finance Schemes



Climate Adaptation Support Service



Adaptation/ Mitigation Measures Implementation



Environment and Natural Resource Accounting



Vulnerability Assessment



Natural Resource Assessment

CCA/DRR AT THE LOCAL LEVEL



PROJECT ReBUILD

Vulnerability and adaptation assessment as a basis for future “climate/disaster proofed” development options

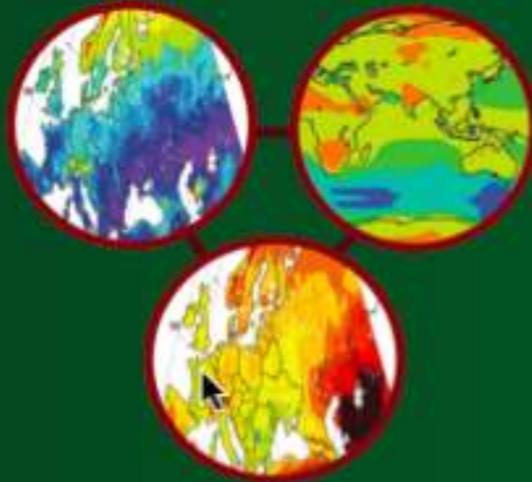
- **DRVA**
- **CLIMEX.DB**
- **Detailed Risk Based Mapping**

High Resolution Maps and Climate Projections

LIDAR
& Satellite Images



CLIMATE PROJECTIONS



LIDAR (Light Detection and Ranging) is a new tool and technology (50 years) that can provide very precise, accurate, and high-resolution images of the surfaces of the Earth, e.g. vegetation, and the built environment.

MODELLING

Flood management needs:

- Measurement
- Monitoring
- Modeling
- Intervention (e.g. Infrastructure for control)
- Mitigation (Early warning)

COMMON NEED:
Accurate, reliable and up-to-date Spatial DATA



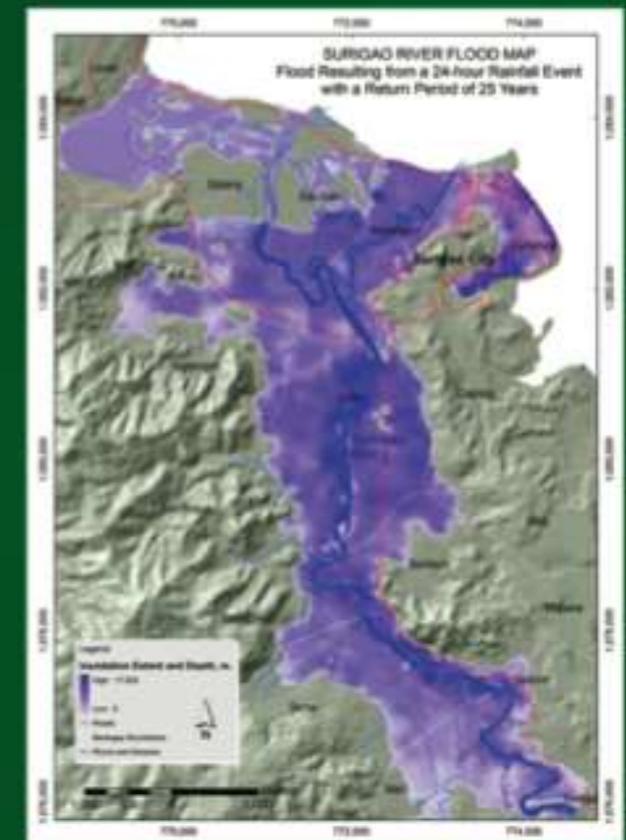
DOWNSCALING

Representations of the Philippines using three resolutions: 35km x 35km, 50km x 50km, and 500km x 500km grid, respectively. There are finer details as the grid gets smaller. The smaller the grid, the finer is the resolution giving more detailed climate information.

This shows that with the higher resolution (35 km) some small islands can be represented as compared with the 500 km resolution where in The Philippines is represented with only a grid boxes.



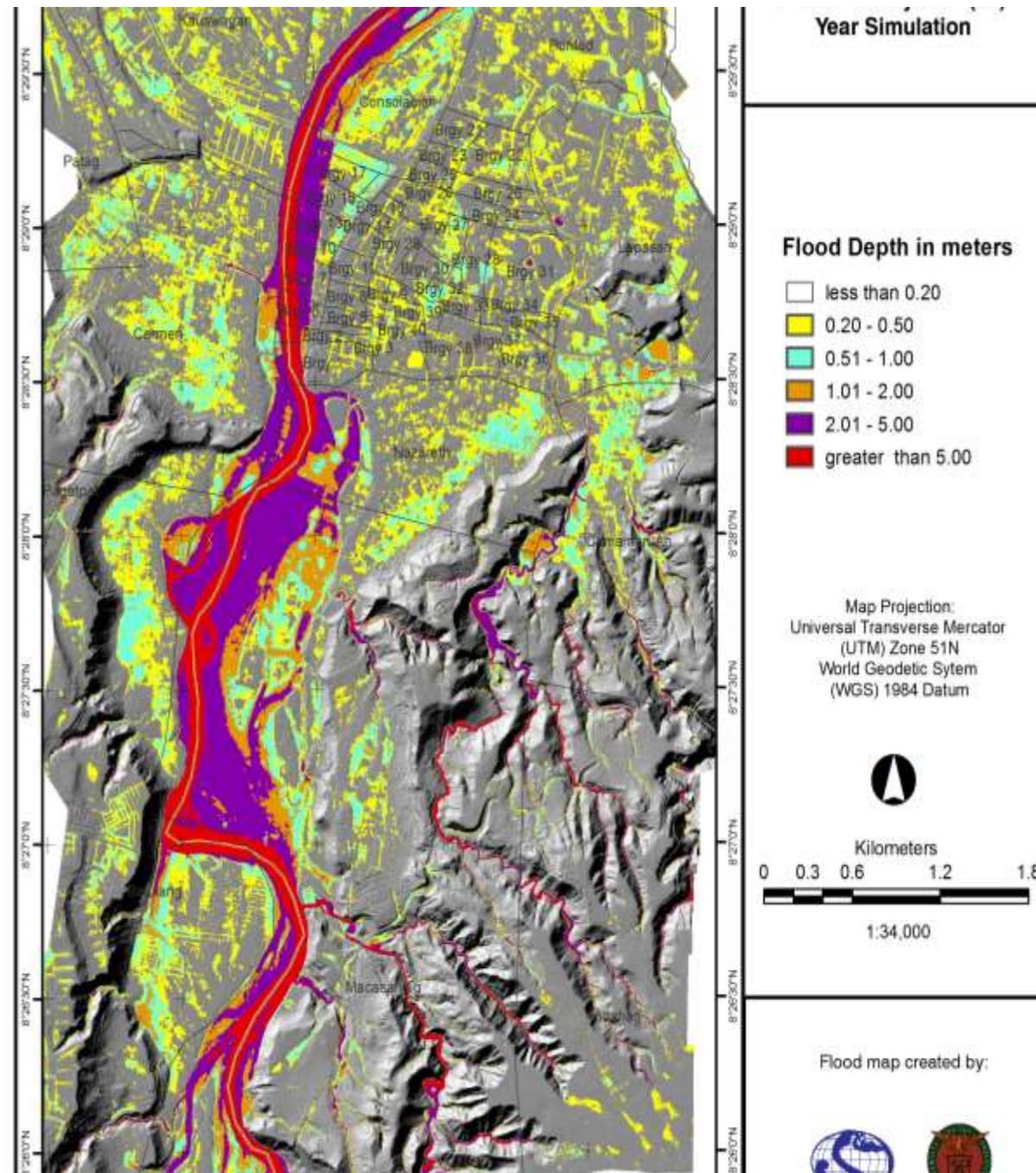
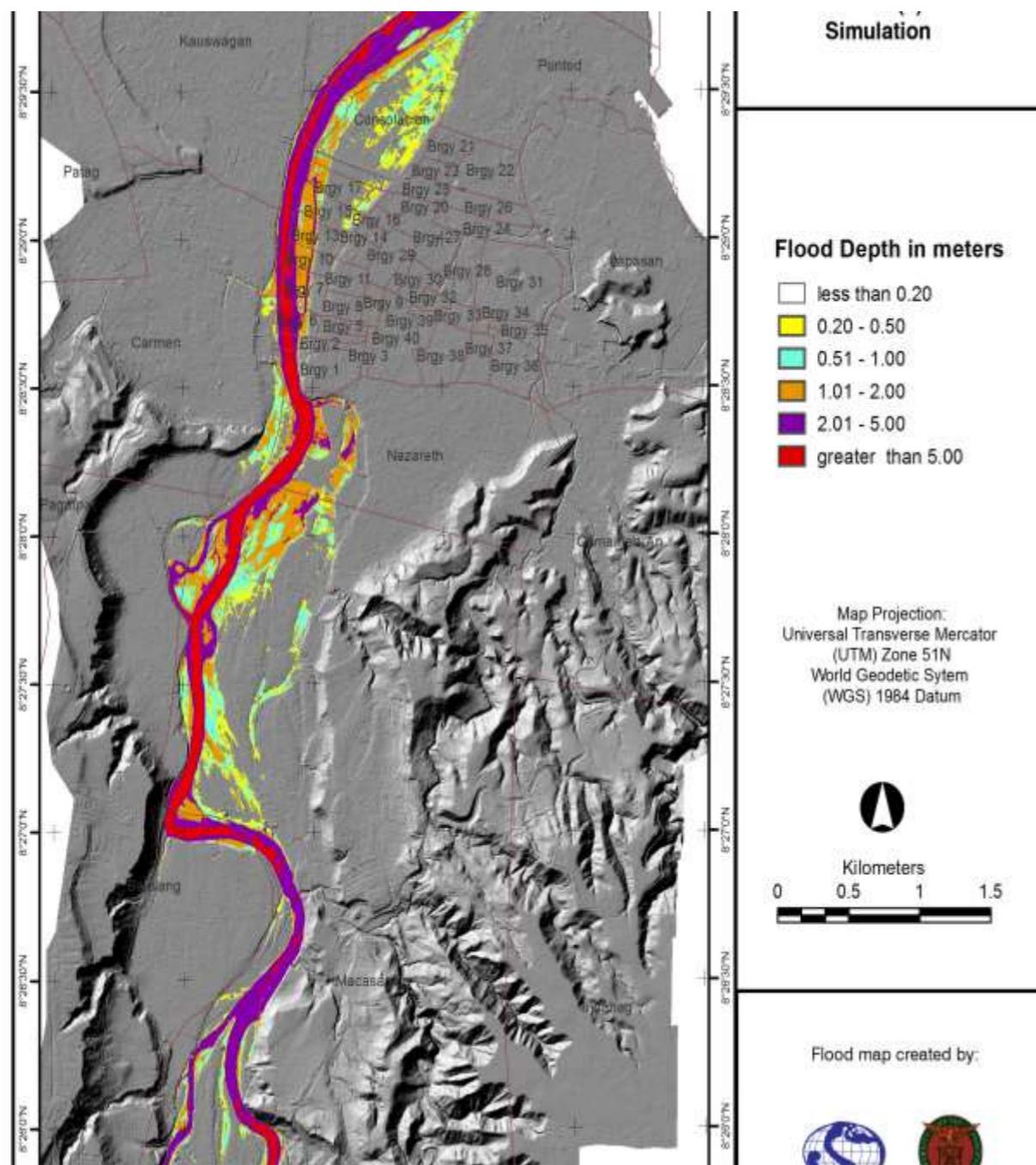
FLOOD MAPS



Enhanced Flood Mapping using State of the Art technology incorporating climate change projections

5 year return period simulation

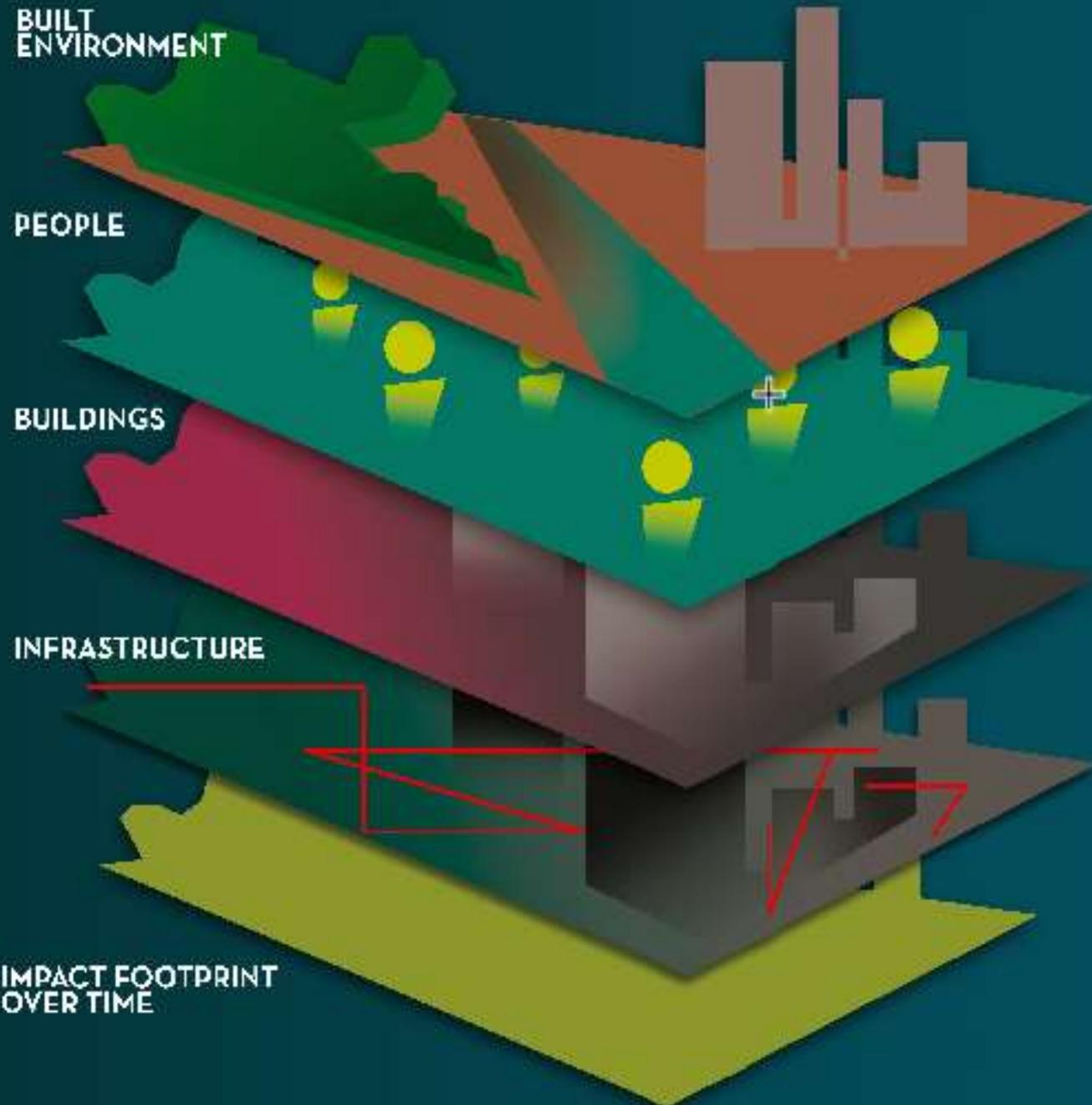
25 year return period simulation



Support to Compostela Valley and Davao Oriental under Project Climate Twin Phoenix

Climate/Disaster Risk Assessment – Vulnerability Assessment (C/DRA-VA)

DRA Disaster Risk Assessment



VA Vulnerability Assessment

CLIMATE CHANGES

Temperature



Precipitation



Sea Level Rise



POTENTIAL IMPACTS

Health

Widespread mortality
Infectious diseases
Air quality, respiratory
illness



Forests

Large scale dieback
Wildfires
Loss of biodiversity



Agriculture
Crop loss
Soil degradation



Water Resources
Drought
Water scarcity
Inundation
Floods

Coastal Areas

Loss of land
Inundation
Coastal erosion
Saltwater intrusion



Species and Natural Areas
Loss of biodiversity
Extinction of species

Climate Change Impacts

The changes in temperature, precipitation patterns, and sea-level rise that have been observed and that are projected to occur will have wide-ranging and some potentially devastating impacts on the natural environment and human societies. (potential impacts are described in detail in TAR_4.Impacts.ppt)

Our health, agriculture, forests, water resources, coastal areas, and species and natural areas are all vulnerable to the projected climate changes. For a small degree of warming, there is a mix of benefits and harms; harms increase dramatically for the higher projected temperature increases.

Scientists have made estimates of the potential direct impacts on the various sectors listed here, but in reality the full consequences are more complicated because impacts on one sector can also affect other sectors indirectly.

Science and Risk Based Plans

Guidelines on Mainstreaming CCA-DRR in
the Land Use Plan

Development of CLUP Resource Book for
Planners

Supplemental Guidelines on Mainstreaming Climate and
Disaster Risks in the Comprehensive Land Use Plan



**CLUP Resource
Book**

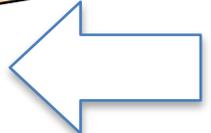
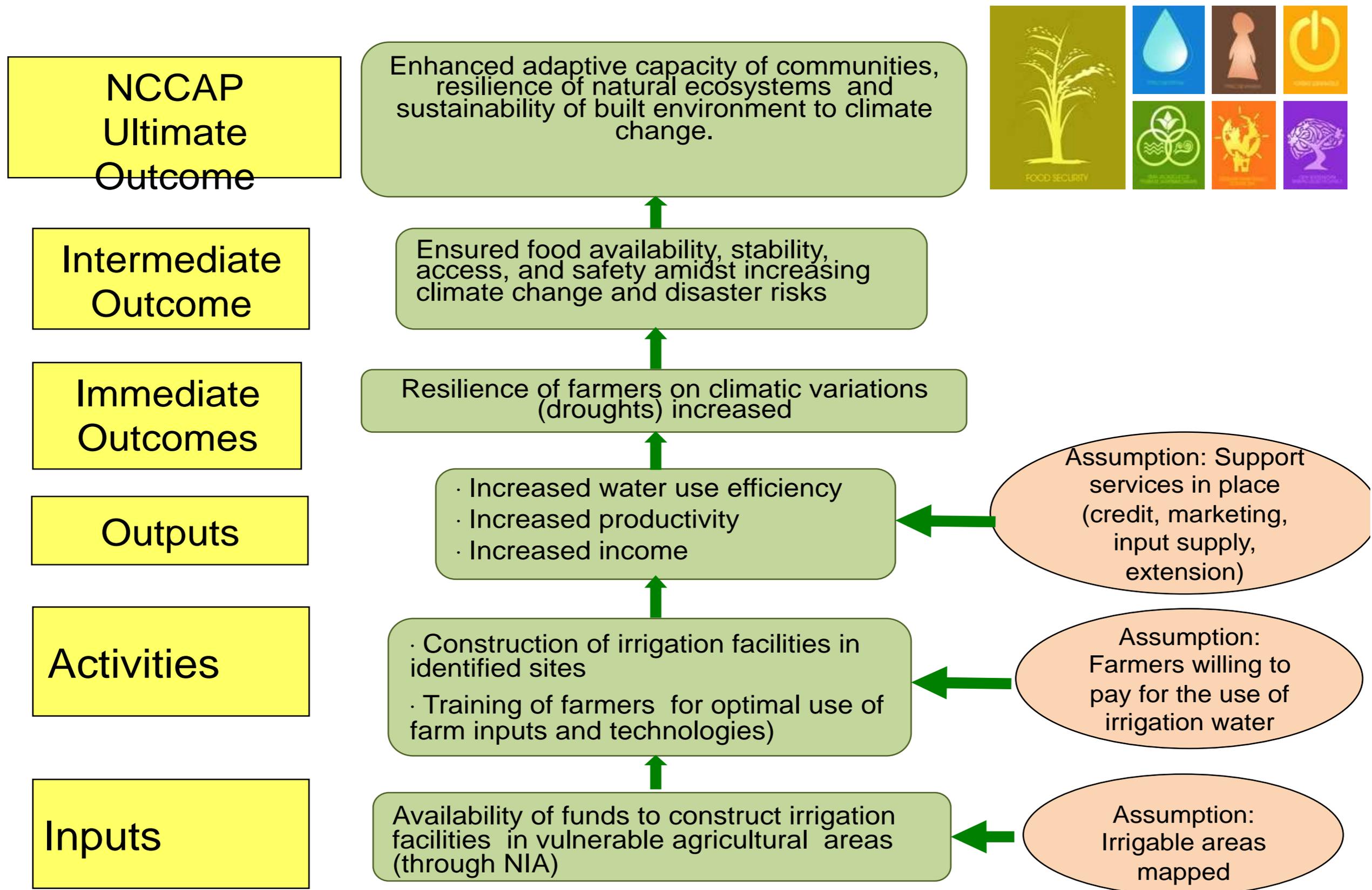


ENSURING PROGRESS (Monitoring and Evaluation)

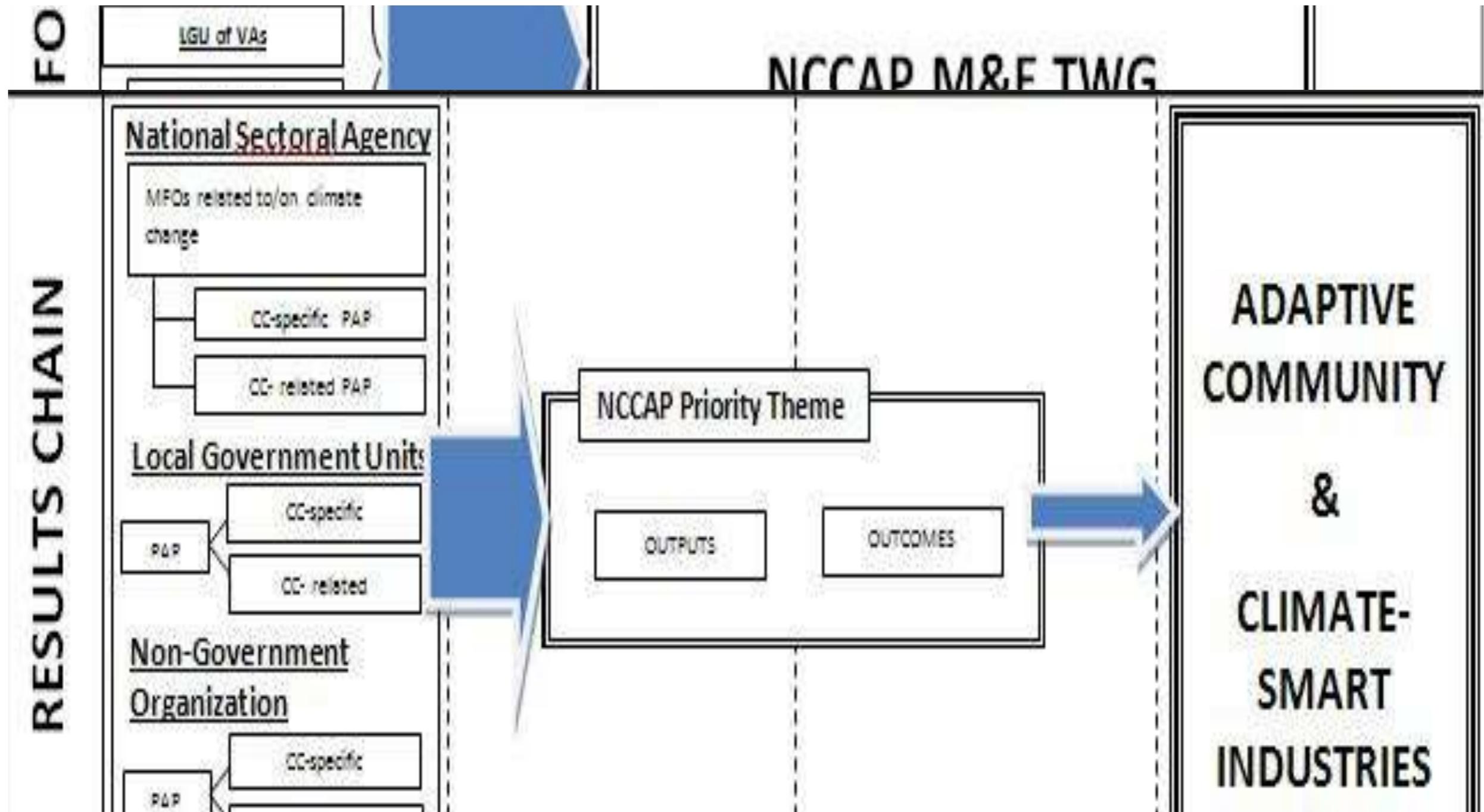
NCCAP RESULTS-BASED MONITORING AND EVALUATION SYSTEM (RBMES)

- **Vision:** *A fully operational results-based M&E system by Jan. 1, 2016 serving as a tool to improve and adjust NCCAP targets and activities from 2014 to 2028.*
- **Mission :** *To accurately and progressively capture the impact of the NCCAP through evidenced-based methods and analyses, which will serve as bases for periodic refinements and recalibration of NCCAP strategies and tactics.*

NCCAP RESULTS BASED MONITORING AND EVALUATION SYSTEM (NCCAP RBMES)



NCCAP RBMES – IMPLEMENTATION PHASES



RAISE AWARENESS AND TAKING ACTION

**(Capacity Building and Early Warning
Systems)**

Training on CCA-DRR for Local Partners and Academic Institutions



for
In



NEW EARLY WARNING SYSTEMS WITH UP-TO-DATE OPERATION PROTOCOL



CCA-DRR ACTIONS. MEANS OF IMPLEMENTATION

Financing

GAA, Climate
Financing
and ODA,
Private
Sector

Valuation

Natural
Resource
Accounting,
Total
Economic
Valuation

Multi- stakeholder Partnerships

Mechanism
of ensuring
inclusiveness
and buy-in;
Encourage
Public-Private
Partnership

Policy and Planning Mainstreaming

Capacity
Assessment
and
Development

CHALLENGES AND LIMITATIONS



- **Varying enforcement of laws, regulations and directives in different levels of authorities**
- **Existing structures not used for climate change related initiatives**
- **Lack of access to information**

THANK YOU

