

Pilot studies to improve uptake of climate information

***Presented in the Workshop for Capacity Building on Climate Change Impact Assessments and Adaptation Planning in the Asia-Pacific Region
February 2, 2017***

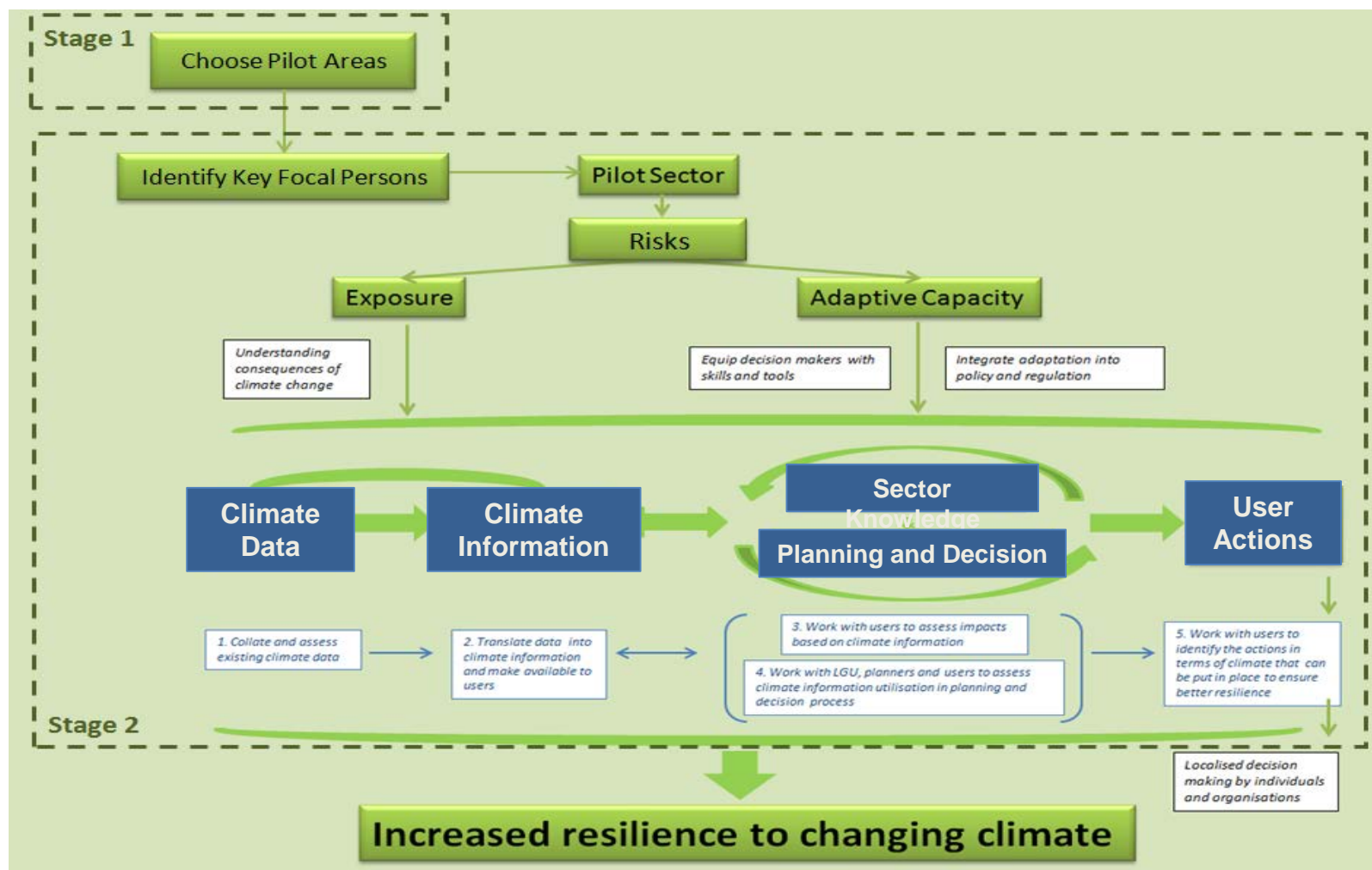


CONTENT

1. Pilot Approach and Development
2. Pilot Outcomes and Outputs
3. Lessons Learned and Recommendation



Supply Chain of Information



Pilot approach

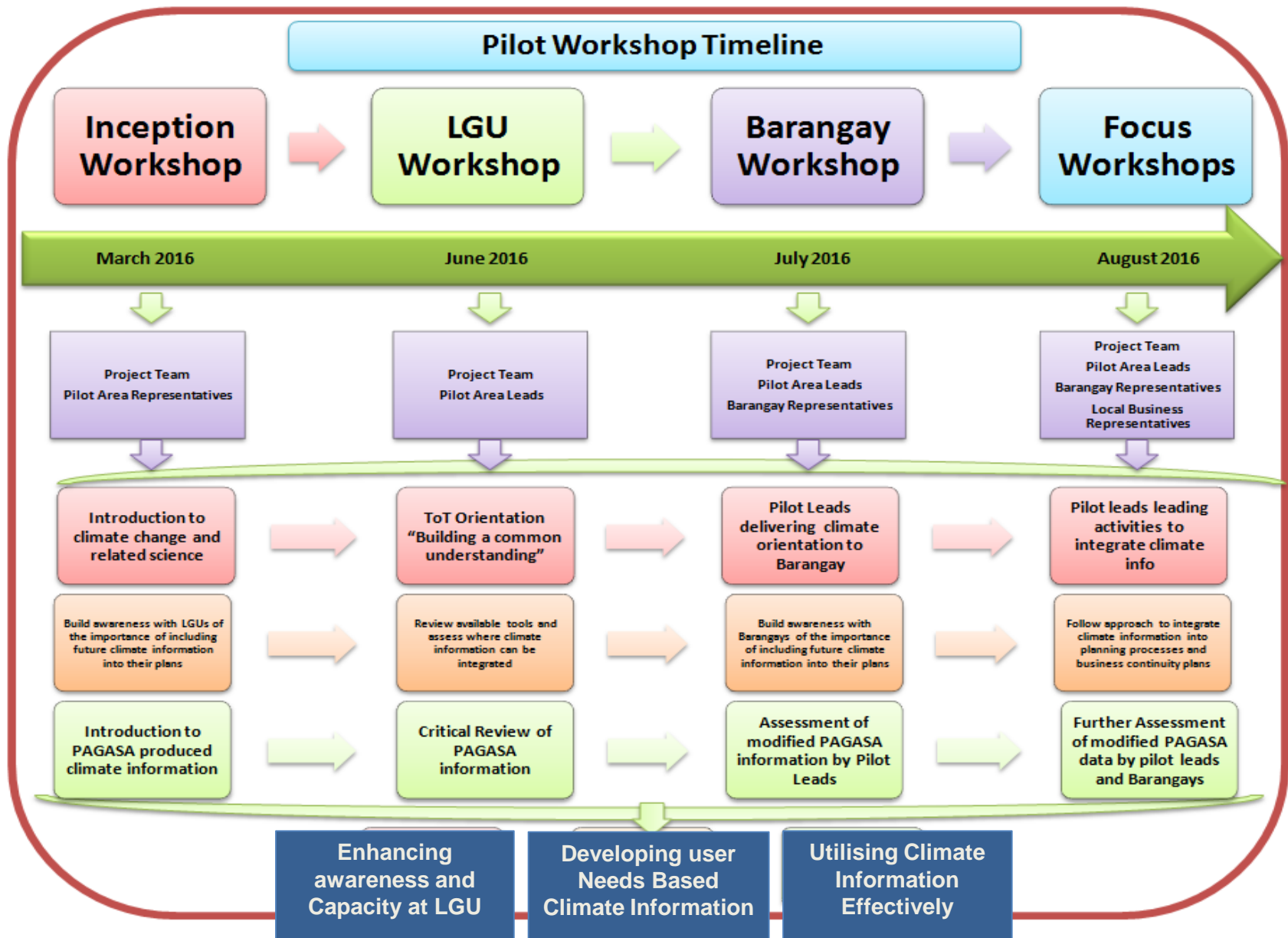
- I. To build Capacity to understand climate information
- II. Development of User Needs Based Climate Information
- III. To develop mechanisms to utilise Climate Information



II. Pilot Selection



I. Pilot Approach and Development



I. Inception Workshops (Pilot Area Representatives)

a. Introduction to climate change and related science



Modules

1. Climate Science
2. Climate Change and Climate Impacts
3. Available Climate Information from PAGASA
4. Climate Change Projections
5. Hazards, Exposure, Vulnerability & Risk
6. Adaptation, Mitigation & Policy Environment
7. V & A Assessments & Other available tools

- GMMA participants had a good understanding of climate change, Salcedo participants had a basic understanding of climate change

1. Inception Workshops (Pilot Area Representatives)

b. Introduction to
PAGASA produced
climate information

➤ Review of PAGASA
information to assess current
understanding



1. Inception Workshops (Pilot Area Representatives)

b. Introduction to
PAGASA produced
climate information

- Critique and identify difficulties and potential improvements to make more user-friendly



1. Inception Workshops (Pilot Area Representatives)

b. Introduction to
PAGASA produced
climate information

➤ This improved their
awareness of what is
available



1. Inception Workshops (Pilot Area Representatives)

c. Learnt about planning activities and priority sectors in the pilot areas



➤ Plans included

Comprehensive Development Plans (**CDP**), Comprehensive Land Use Plans(**CLUP**), Disaster Risk Reduction Management (DRRMP)and Local Climate Change Action Plan(**LCCAP**)

- Priority sectors identified in GMMA cities included **health, livelihoods, local businesses** (e.g. street side restaurants), and informal housing. In **Salcedo** the focus was predominantly on **agriculture and fisheries**



1. Inception Workshops (Pilot Area Representatives)

c. Learnt about priority sectors and planning activities in the pilot areas



- The review of PAGASA information highlighted the importance of incorporating climate projections and difference to assessing impacts when compared to historical disaster information






2. Follow up LGU Workshop (Pilot Area Representatives)

a. ToT Orientation
“Building a common understanding” by the pilot area leads



- Providing tips to the focal persons on how to facilitate and provide training on the climate change material
- This included practical sessions for the focal persons to practice facilitation
- Trainees again provided feedback on the training material to allow us to improve the training pack



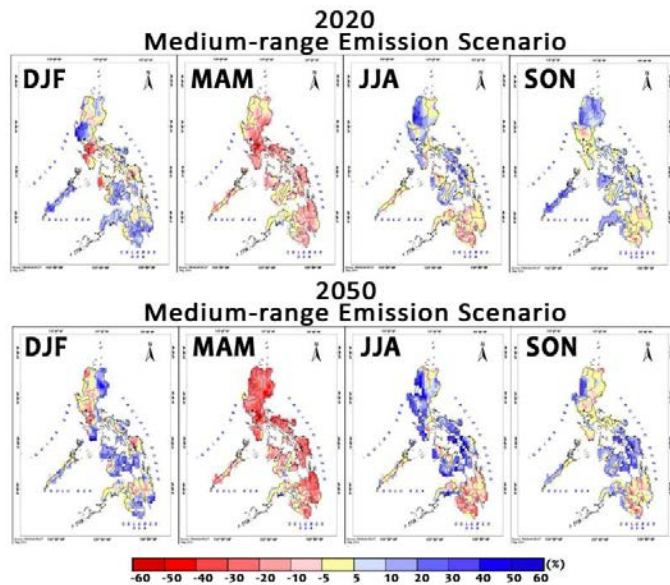
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Modules

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2. Follow up LGU Workshop (Pilot Area Representatives)

b. Critical Review of PAGASA Information



- Further review and critique of PAGASA climate information which we took on board for future workshops
- Issues highlighted difficulties in understanding climate projections and uncertainties associated with multi-model ensembles of data and how to apply this form of information in their day-to-day planning



2. Follow up LGU Workshop (Pilot Area Representatives)

b. Critical Review of PAGASA Information

NE Monsoon (December-January-February) For Eastern Samar
Base Line Observed (1971-2000) = 414.5mm
(mean temp ref) = 26.1 °C

SCENARIO	TIME SLICE	PRECIPITATION (%)	TEMPERATURE (°C)	RR (mm)	POTENTIAL CLIMATE RELATED RISK	ADAPTATION ACTIONS/DECISIONS
CMIP 4.5	2050 MID CENTURY	17%	17°C	1003.3	26.0	
	2050 LATE CENTURY	-7.6 -5.3 8.5	12°C 15°C	892.2 1001.9	22.3 30.1	
	2100 LATE CENTURY	57.6	2.1	1591	29.8	
CMIP 8.5	2050 MID CENTURY	60.4	2.0	1582.7	31.7	
	2100 LATE CENTURY	190.8	3.4	2276.7	35.2	

- At the GMMA workshop we developed the Climate Information Risk Analysis Matrix (CLIRAM) to help focal leads interpret different sets of projections (e.g. for temperature, rainfall)
- This was then used in Salcedo and further enhancements were suggested



2. Follow up LGU Workshop (Pilot Area Representatives)

c. Review of Planning Processes and available tools and assess where climate information can be integrated

- We reviewed the planning processes and guidance for LGUs and listed common stages across the plans
- The focal leads then highlighted where climate information can easily be integrated



2. Follow up LGU Workshop (Pilot Area Representatives)

c. Review of Planning Processes and available tools and assess where climate information can be integrated



- Reviewed existing tools e.g. Vulnerability and Adaptation (V&A) tools from the earlier GMMA READY project) and assessed how climate information could be integrated
- Focal leads then developed a Business Continuity Plans process to answer the questions “How to make the livelihoods sector more resilient to climate change?”



V&A Tool	Purpose
1. Issue/Gap Analysis Tool	This tool makes use of the existing plans and profiles within the city/barangay
2. Existing Vulnerability Models	These models are based on the data collected in the previous tool to quantify existing vulnerability and adaptive capacity.
3. Prioritizing Existing CDRR Measures	Building on all the information from the tools utilized, the participants were asked to list their priority projects currently being undertaken by the LGU.
4. Elements at Risk (Existing)	For the scope of the prioritized measures, the elements of risk were examined utilizing risk maps and a table format to numerate the population and critical infrastructure at risk from climate related hazards based from historical data
5. Climate Information and Risk Analysis Matrix (CLIRAM)	This matrix presented the scenarios, models and projections for rainfall and temperature for 2050 (2036-2065). The impacts and solutions for each were discussed
6. Elements at Risk (Future)	By utilizing the climate change scenarios, the additional pressures on existing vulnerabilities can be determined and potential adaptation strategies can be determined.
7. Climate Change Impact Chain	From the data produced through the use of the tools the information was sorted into a climate change impact chain

3. Barangay Workshop

(Pilot Area Leads and Barangay Representative)

a. Pilot Leads delivering climate orientation to Barangay



- Focal leads provided the training directly to Barangay participants
- Covered all modules including the climate science component which was identified previously as the most difficult part!



3. Barangay Workshop

(Pilot Area Leads and Barangay Representative)

b. Review and validation of PAGASA Information



- PAGASA presented “refined” climate information based on recommendations from earlier workshops
- This provided additional feedback on ease of use and understanding from Barangay participants



3. Barangay Workshop (Pilot Area Leads and Barangay Representative)

b. Review and validation of PAGASA Information

- Participants also “tested” the CLIRAM and provided feedback in order for us to make further improvements
- Noted the expectation was raised by the Barangay participants that climate information should be communicated by those at the city/municipal level



c. Barangay Workshop (Pilot Area Leads and Barangay Representative)

c. Build awareness of the importance of including future climate information into their plans

- The participants looked at historical events and thought about how these could change under different climate scenarios
- They also looked at past status, current and future “vision” for Barangays and related this back to the climate change information e.g. to inform what actions would be required to adapt based on the future climate information



c. Barangay Workshop (Pilot Area Leads and Barangay Representative)

c. Build awareness of the importance of including future climate information into their plans



- This reinforced the importance of not only basing plans on past disaster event information, but also to incorporate climate information of potential future climate related hazards
- Identification of local businesses of different scales for participation the following Barangay focus workshop



4. Focus Workshops

Pilot Leads leading activities to integrate climate information



- Working through sectoral V&A assessments with representatives from Barangay
- Development of Business Continuity Plans with small scale businesses
- Used CLIRAM to integrate climate information into the above sector analyses



Pilot Region	Pilot Barangay	Barangay characteristics	Priority Sector(s)	Main Vulnerability
Pasig	Santa Lucia	Urban Alongside the Manggahan Floodway system of Pasig River	Small Scale Businesses; Health	Flooding
San Juan	San Perfecto	Urban Catch basin of flood waters	Small Scale Businesses; Health	Flooding
Marikina	Concepcion Uno	Urban Adjoining Marikina River	Small Scale Businesses; Health	Flooding
Salcedo	Palanas	Rural – Coastal/Lowland area;	Farmers Fisher-folk	Storms, Storm Surges, Floods
	Naparaan	Rural – Upland/Lowland area Water catchment area		






Pilot outcomes and outputs

- a. Climate Orientation Pack
- b. Co-produced Climate information
- c. Climate Information and Risk Analysis Matrix
- d. Guidance to support integrating Climate Information in Local Planning



a. Climate orientation pack



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Modules

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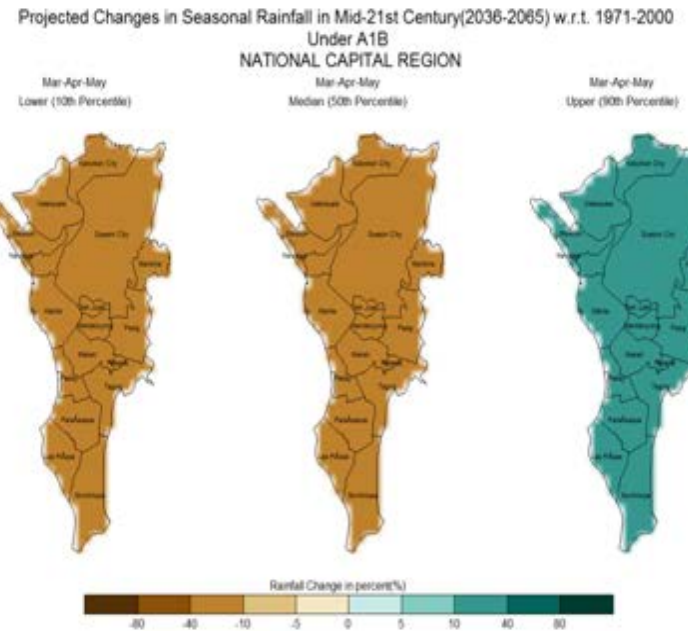
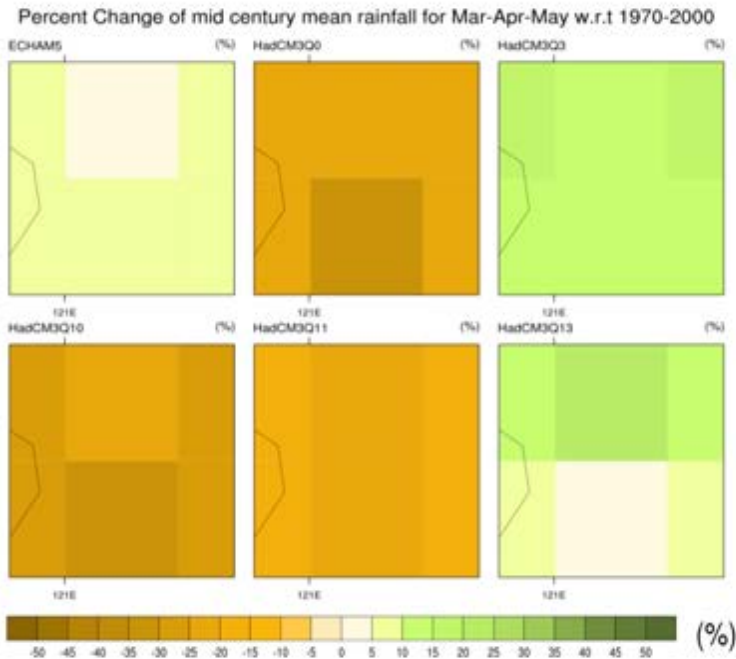


b. Co-produced Climate Information



old and improved information

Projected changes in the seasonal rainfall for Dry/Hot season March-April-May under an A1B Scenario



Improved information

c. Climate Information and Risk Analysis Matrix

Projected Changes in Seasonal Rainfall in the Mid-21st Century(2036-2065) for Eastern Samar
relative to 1971-2000: Observed baseline (1971-2000) = 987.0 mm

December-January-February

Scenario	Range*	Projected Change		Projected Seasonal Rainfall Amount (mm)	Potential Impacts	Proposed Solutions
		Percent (%)	Rainfall amount (mm)			
Low Emission (RCP45)	Lower	-4.2	-41.1	945.9		
	Median	1.3	12.5	999.5		
	Upper	45.0	444.4	1431.4		
High Emission (RCP85)	Lower	-7.9	-77.8	909.2		
	Median	13.7	135.2	1122.2		
	Upper	43.6	430.8	1417.8		
* upper: 90th percentile; median: 50th percentile; lower: 10th percentile						



d. Guidance to support integrating Climate Information in Local Planning



National long-term strategic plans which also guide local development planning
Philippine Development Plan (PDP) : National Economic and Development Authority (NEDA),
National Disaster Risk Reduction and Management Plan (NDRRMP) -
National Disaster Risk Reduction and Management Council (NDRRMC),
National Climate Change Action Plan (NCCAP) : Climate Change Commission (CCC).

Local Government Units (LGUs)

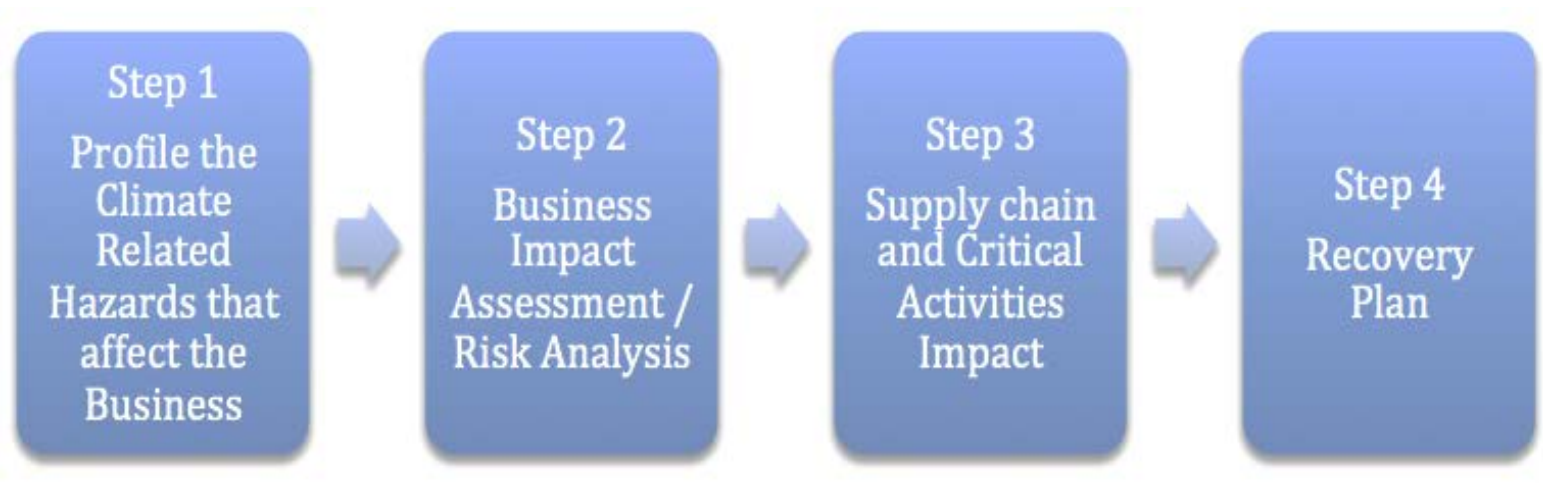
Comprehensive Development Plan(CDP)

Comprehensive Land Use Plan (CLUP)

Local Disaster Risk Reduction and Management Plan (NDRRMP) LDRRMP

Local Climate Change Action (LCCAP)

d) Guidance to support integrating Climate Information in Development of Business Continuity Plans



3) Lessons Learned and Recommendation

Learning and achievements (by Theme and activities)

Recommendations

1) *Building Capacity to understand climate information, Information*

Training of Trainers

- The climate orientation pack helped and will help build the capacity within the LGUs to deliver a basic to other LGU planners and stakeholders
 - The modular format reduces the need to deliver this as a full 1-2 day workshop allowing trainers to provide flexible approach to delivery.
 - This reduces the resource required from PAGASA at the local levels
 - Focal leads have now to translating the tools and materials produced into the local language to support increased impact at Barangay level
- Mechanisms to support further deployment and training for LGU staff should be discussed between PAGASA and DILG.
 - DILG and PAGASA to discuss development of local “Climate Champion” roles at the LGU level
 - PAGASA to further develop the climate orientation pack as an online resource with development of CD video format to support wider “self learning” for users to increase reach and reduce direct training resources required at national level
 - PAGASA to discuss with key Government Departments, the development of climate training to key national agencies (DILG, NEDA, NDRRMC, DENR, CCC and Housing and Land Use Regulatory Board)

2) *Developing User Needs Based Climate*

Co-produced climate information

- By working collaboratively with PAGASA on the iterative process of evaluating currently climate information, participants have developed the knowledge and the skills to translate and use it effectively.
 - This process has also strengthened PAGASAs capacity to deliver a more user-friendly and accessible climate information.
 - In more rural areas there is potential to increase the reach through mobile phone alerts and social networks. This may also be an effective way of reaching younger audiences.
- PAGASA to take learning from the review of current climate information forward for future information production.
 - PAGASA to establish periodic monitoring and evaluation of user needs to inform continuous improvement of information production based on user needs
 - PAGASA to scope potential for enhancing mobile and social media outlets for sharing information.
 - PAGASA to review their “climate field schools” as vehicle for further dissemination

3) Utilising Climate Information Effectively

a) Integrating climate information in local planning

- There is a large demand for user needs based climate information in the Philippines to inform “climate smart planning” across the public and private sectors
- The process developed has provided a tested mechanisms to produce more climate resilient plans based on future climate projections
- Whilst the learning from the two pilots is valuable, further testing and piloting would be required to upscale to all LGUs given the wide range of environmental and socio-economic characteristics .

- PAGASA and DILG to scope options for further piloting and testing of the planning integration approach developed.
- This should cover prioritised sectors and socio-geographic regions / areas

b) Climate Information and Risk Analysis Matrix (CLIRAM)

- The CLIRAM tool has helped the participants to prioritize at risk sectors within their areas based on future climate projections.
- This has enabled planners to provide improved evidence to inform budget allocation for adaptation measures to improve resilience to climate risks
- The CLIRAM has also provided a mechanism to integrate climate information into the vulnerability and adaptation assessment which is a common stage through all plans to be developed by the LGUs

- PAGASA to further develop the CLIRAM tool and link to information in the forthcoming revised national climate projections at the end of 2016.
- PAGASA , CCC and DILG to further discuss mandating of the Vulnerability and Adaptation tools developed by the CCC and linking to the CLIRAM tool for further rollout.

c) Linking climate information to sector planning at the local level

- Whilst only explored at a high level, the concept of climate smart Business Continuity Planning, provides a promising mechanism to integrate climate information into local scale sector specific planning for local businesses and communities.
- Feedback from participants recommended discussing the business continuity plan with the city Mayors, municipal Mayor and the councillors in the pursuit for a possible mandate as part of the business permit and licensing process
- Further work is required to develop this from both a technical and enabling perspective

- PAGASA to discuss and scope concept of climate smart Business Continuity Planning with NEDA, DTI and DILG to support sector planning at the local level.

“Weather & climate
information, when properly
utilized, becomes a rich
resource.”





Building Resilience Met Office project structure and team

WP1: Literature review

Joseph Daron, Rosanna Amato

WP2: Assessment of current hazard and risk information in the Philippines

Clemencia Manzur

WP3: Generation of downscaled CMIP5 simulations

Joseph Daron, Ian Macadam, Erasmo Buonomo, Florian Gallo, Simon Tucker, Rosanna Amato, David Hein, Richard Jones

WP4 - 1: Provision of decision-relevant information on future tropical cyclone risks

Ian Macadam, Claire Scannell, Joseph Daron, Catherine Cole, George Burningham, David Corbelli, Richard Jones

2: Pilot studies to improve the dissemination and uptake of climate information

Claire Scannell, David Corbelli, Clemencia Manzur, Sharon Taylor

3: Regional sea level rise projections for the Philippines

Ron Kahana



PAGASA Team

WP3: Generation of downscaled CMIP5 simulations

PRECIS - Thelma A. Cinco - PRECIS

RegCM4 - Marcelino II Q. Villfuerte

CCAM – Emma D. Ares

WP4 - 1: Provision of decision-relevant information on future tropical cyclone risks

Lead: Marcelino II Q. Villfuerte

Thelma Cinco and Emma Ares

2: Pilot studies to improve the dissemination and uptake of climate information

Lead: Thelma A. Cinco,

Marcelino II Q. Villfuerte, John Manalo, Emma D. Ares,

Rosalina De Guzman, Edna L. Juanillo

3: Regional sea level rise projections for the Philippines

Rex Abdon

New Climate Change Information: All IAAS Team

Thelma Cinco – Future projection in Annual and Seasonal changes

Emma Ares – Extremes

Marcelino II Q. Villafuerte – TC changes



Project City Leads

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Thank you! ☺

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