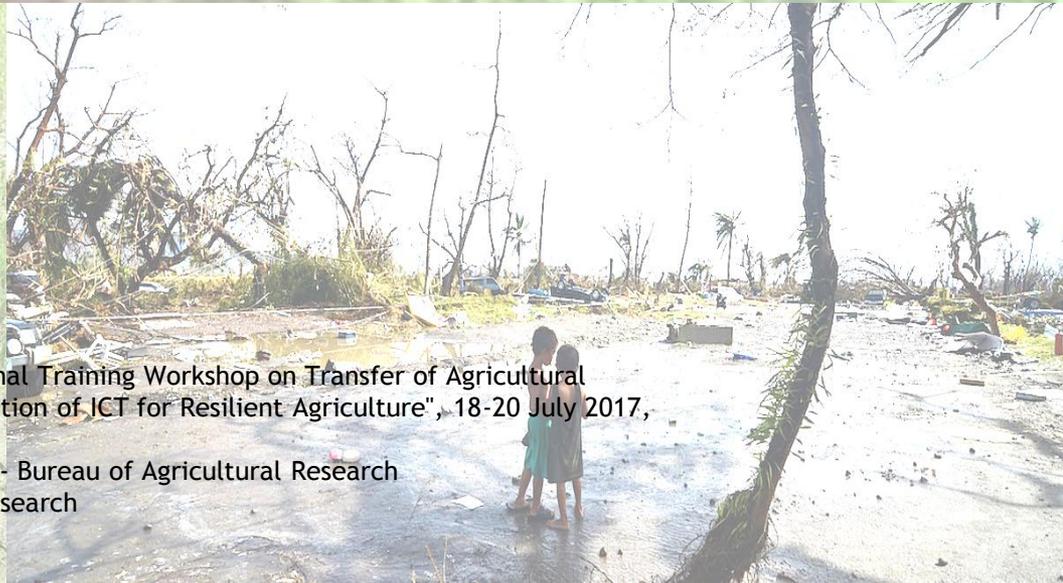


The Philippine Situation: Climate Change Resilience on Agriculture and Fisheries Sector^a

Digna L. Sandoval^b, Marjorie M. Mosende^c and Gian Carlo R. Espiritu^d

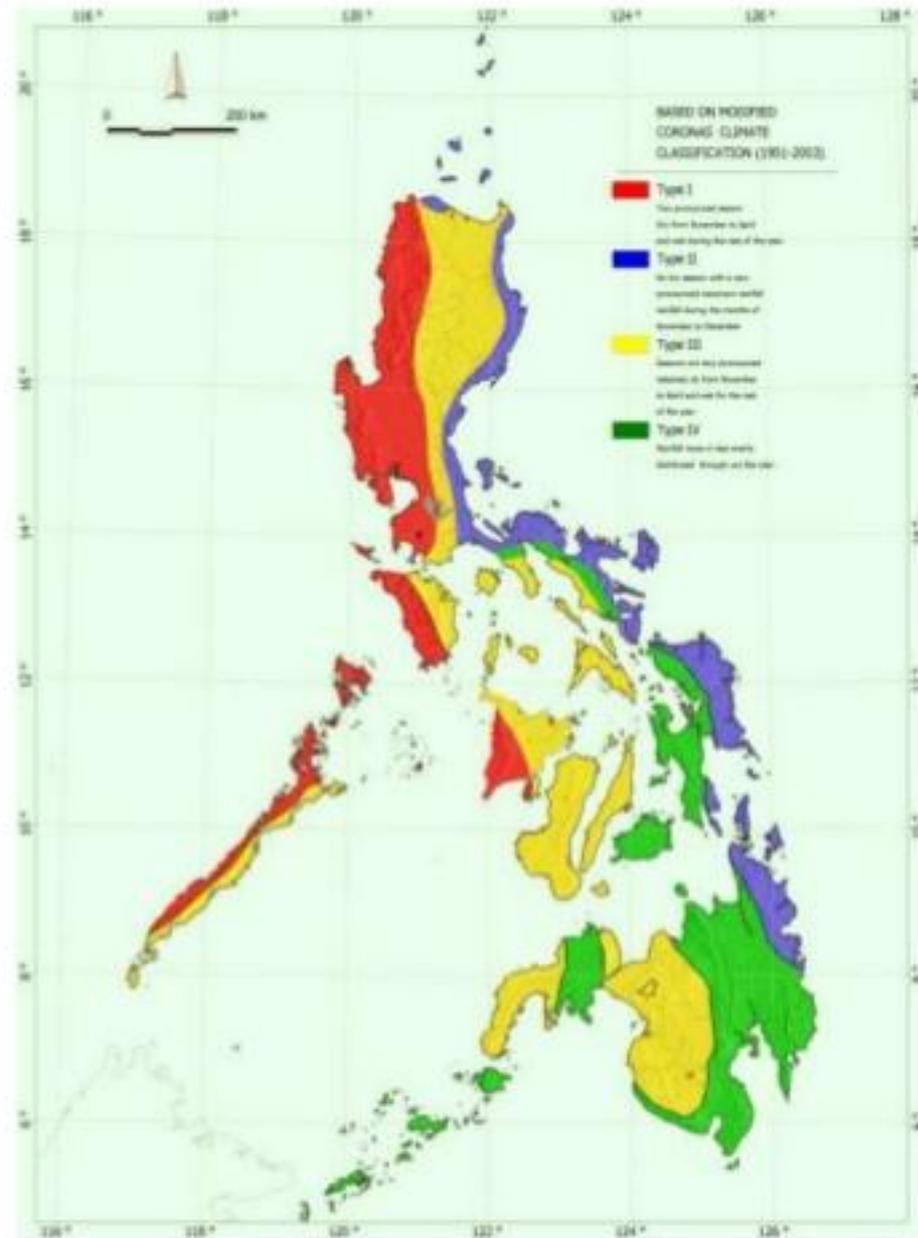


^a Presented during the CAPSA-MARDI Regional Training Workshop on Transfer of Agricultural Technology with Specific Focus on "Application of ICT for Resilient Agriculture", 18-20 July 2017, Putrajaya, Malaysia

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Climate Map of the Philippines



Source: Climate Change of the
Philippines, NEDA – MDGF,
Adapt Tayo

Climate Change in The Philippines

- ▶ In response to what has essentially become a global crisis, the Philippine Government has enacted the Climate Change Act (Republic Act 9729) in 2009 that provides the policy framework with which to systematically address the growing threats on community life and its impact on the environment.
- ▶ The Climate Change Act of 2009 established an organizational structure, the Climate Change Commission (CCC) which allocates budgetary resources for its important functions. These functions include:
 - ▶ the formulation of a framework strategy and program, in consultation with the global effort to manage climate change,
 - ▶ the mainstreaming of climate risk reduction into national, sector and local development plans and programs,
 - ▶ the recommendation of policies and key development investments in climate-sensitive sectors,
 - ▶ the assessments of vulnerability and facilitation of capacity building.

The National Framework Strategy on Climate Change (2010-2022)

- ▶ Signed by the President on 28 April 2010.
- ▶ Adopted by the CCC and is the country's roadmap towards climate change resiliency.
- ▶ It is to be implemented at the local level with the Local Government Unit (LGU) as the frontline agency in the formulation, planning and implementation of its climate change action plan.
- ▶ The key approach is to build an economically stable and ecologically sustainable town, known as Ecotown.

The National Framework Strategy on Climate Change (2010-2022)

- ▶ The framework strategy has recently been translated into a National Climate Change Action Plan (NCCAP), which prioritizes the following as the strategic direction for 2011 to 2028:
 - ▶ Food Security
 - ▶ Water Sufficiency
 - ▶ Environmental and Ecological Stability
 - ▶ Human Security
 - ▶ Sustainable Energy
 - ▶ Climate-smart Industries and Services
 - ▶ Knowledge and Capacity Development



Food Security

- ▶ **Objective:** To ensure food availability, stability, access and safety amidst increasing climate change and disaster risks.
- ▶ **Outcome:**
 - ▶ Enhanced CC resilience of agriculture and fisheries production and distribution systems;
 - ▶ Enhanced resilience of agricultural and fishing communities in the midst of climate change.



Water Sufficiency

- ▶ **Objective:** Water resources sustainably managed and equitable access ensured.
- ▶ **Outcome:**
 - ▶ Water governance restructured towards a climate and gender-responsive water sector;
 - ▶ Sustainability of water supply and access to safe and affordable water ensured;
 - ▶ Knowledge and capacity of the water sector to adapt to climate change enhanced.



Ecosystem & Environmental Stability

- ▶ **Objective:** To enhance resilience and stability of natural systems and communities.
- ▶ **Outcome:**
 - ▶ Ecosystems protected, rehabilitated and ecological services restored.



Human Security

- ▶ **Objective:** To reduce risks of men and women and other vulnerable groups (children, elderly and persons with disability, etc.) from climate and disasters.
- ▶ **Outcome:**
 - ▶ Climate change adaptation and disaster risk reduction implemented in all sectors at the national and local levels.
 - ▶ Health and social protection delivery systems are responsive to climate change risks.
 - ▶ CC-adaptive human settlements and services developed, promoted and adopted.



Climate-Smart Industries & Services

- ▶ **Objective:** Climate resilient, eco-efficient and environment-friendly industries and services developed, promoted and sustained.
- ▶ **Outcome:**
 - ▶ Climate-smart industries and services promoted, developed and sustained.
 - ▶ Sustainable livelihood and jobs created from climate-smart industries and services.
 - ▶ Green cities and municipalities developed, promoted and sustained.



Sustainable Energy

- ▶ **Objective:** Sustainable and renewable energy and ecologically-efficient technologies adopted as major components of sustainable development.
- ▶ **Outcome:**
 - ▶ Nationwide energy efficiency and conservation program promoted and implemented.
 - ▶ Sustainable and renewable energy development enhanced.
 - ▶ Environmentally sustainable transport promoted and adopted.
 - ▶ Energy systems and infrastructure climate-proofed, rehabilitated and improved.



Knowledge and Capacity Development

- ▶ **Objective:** To enhance knowledge and capacity of women and men to address climate change.
- ▶ **Outcome:**
 - ▶ Enhanced knowledge on the science of climate change.
 - ▶ Capacity for CC adaptation, mitigation and disaster risk reduction at the local and community level enhanced.
 - ▶ CC knowledge management established and accessible to all sectors at the national and local levels.

Disaster Risk Reduction (DRR) and Climate Change Adoption (CCA) Policies of the Philippines

- ▶ Philippine Environmental Impact Statement System
- ▶ Marine Pollution Control Law
- ▶ Clean Air Act
- ▶ Clean Water Act
- ▶ Ecological Solid Waste Management Act
- ▶ Renewable Energy Act
- ▶ Environmental Awareness and Education Act
- ▶ Climate Change Act
- ▶ Disaster Risk Reduction and Management Act
- ▶ Toxic Substances and Hazardous and Nuclear Wastes Control Act
- ▶ Act Creating the People's Survival Fund

Adaptation & Mitigation Initiative in Agriculture

- ▶ A national initiative and a communication strategy to provide to provide focus on two (2) core issues of CC in agriculture: adaptation and mitigation.
- ▶ Objective: to provide an efficient yet resilient agriculture support services to enable the country's agriculture sector to effectively address CC as it pursues its goals of development.
- ▶ On 25 January 2013, the DA Secretary issued a memorandum to operationalize government policies on CC: "Mainstreaming Climate Change in the DA Programs, Plans and Budget".

National Color Coded Map for Agriculture

www.farmersguidemap.gov.ph



DEPARTMENT OF AGRICULTURE
1898

Choose Map:
Crop Suitability

Set Boundary:
 Political River Basin

Crop Suitability:

- Abaca
- Banana
- Cacao
- Cassava
- Coconut
- Coffee
- Corn
- Garlic / Onion
- Legumes
- Mango
- Palm Oil
- Papaya
- Pineapple
- Rice
- Rubber
- Sugarcane
- Sweet Potato
- Taro
- Vegetables
- Yam

Hide



HAINAN
Sanya
三亚市

Paracel Islands

South China Sea

Vietnam
Hué
Da Nang
Pleiku
Qui Nhon
Nha Trang
Dalat
Vũng Tàu

Philippines
Manila
Luzon
Mindoro
Naga
Legazpi
Malay
Panay
Iloilo
Bacolod
Cebu
Pulo ng Leyte
Negros
Pulo ng Bohol
Mindanao
Cagayan de Oro
Zamboanga
Davao
General Santos

SABAH
Sandakan
LABUAN FEDERAL TERRITORY
Miri
Tawau

Brunei

RIAU ISLANDS

Google

Celebes Sea

Sulu Sea

El Nido
Puerto Princesa
Palawan

Spratly Islands

Completed CC-related R&D Projects funded by DA-BAR

Project Title:	Technology(ies) from the Project:
Assessment of the Impacts of Extreme and Erratic Weather Condition in the Rice Terraces of the Cordillera Region	The project was all about documenting the overall impact of extreme and erratic weather patterns on the physical/biological integrity of the rice terraces
Risk of Rice Tungro Epidemics under Climate Change in the Philippines	<ul style="list-style-type: none">-Survey of the current rice tungro virus disease occurrence in the Philippines-Map of the current geographical distribution of rice tungro virus disease in the Philippines-Map of potential geographical distribution of rice tungro virus epidemics in the Philippines under climate change-Prototype rice tungro virus simulation model
Assessment of the Direct and Indirect Effects of Climatic Changes in Local Dairy Production	The project was about the assessment of the direct and indirect effects of temperature, humidity and rainfall on milk yield of dairy cows and quality of forage

Completed CC-related R&D Projects funded by DA-BAR

Project Title:	Technology(ies) from the Project:
Vulnerability of the Philippine Mallard Duck (<i>Anas platyrhynchos</i>) Production to Changing Climatic Conditions	Assessment of the vulnerability of the local duck egg production to the inevitable changing temperature and relative humidity
Aerobic Rice Production System: Improving Productivity in Water Scarce Areas of Cagayan Valley	<ul style="list-style-type: none">-Development of a dynamic cropping calendar-Assessment of water use efficiency for different management systems-Aerobic Rice Technology Cultural Management Practice
Selection/Breeding Known Drought-Resistant, Pest/Disease Resistant and Flood-Tolerant Species for Climate Change Adaptation	<ul style="list-style-type: none">-Documentation of the effects of changing climate on the performance of selected fruit crops-Identification, selection and propagation of selected fruit crop species adapted to adverse environmental conditions

Completed CC-related R&D Projects funded by DA-BAR

Project Title:	Technology(ies) from the Project:
Socio Economic Aspects on the Vulnerability, Risks and Adaptation on Major Food Crops (Corn, Durian and Banana) Towards Climate Change Effects in Region XI and XII, Philippines	Information: Analysis of the socio-economic aspects on the vulnerability, risk and adaptation of the climate change on the major food crops production (i.e. corn, durian, and banana) in Region XI and XII.
Strategic Risk Analysis of Long-Term Climate Variability on Jomalig and Polilio Islands in Quezon Province	Information derived from the project: -Models arising from hydro-meteorological hazards that became basis of weather and climate risk management practices and policy with particular focus on the municipality of Jomalig and Polillio -Validated climate change scenarios and projections
Economic Analysis of Adaptation Strategies in Selected Coastal Areas in the Philippines	Information derived from the project: -Adaptation strategies in selected coastal communities -Policy options that can best address the risks of climate change more efficiently
Modeling and forecasting leaf blight epidemics in white corn under climate change	Corn leaf blight simulation model

R&D Technology Transfer for Climate Change

The Intergovernmental Panel on Climate Change (IPCC) Special Report on Methodological and Technological Issues on Technology Transfer defines transfer as “a broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change amongst different stakeholders such as governments, private sector entities, financial institutions, non-governmental organizations (NGOs) and research/education institutions” (IPCC 2000).

Technology Transfer in the Philippine Context

- ▶ Republic Act 8293, more commonly known as the Intellectual Property Code of the Philippines
 - ▶ provides for the establishment of an Intellectual Property Office.
- ▶ Republic Act 10055 or the Philippine Technology Transfer Act
 - ▶ aims to address technology transfer issues in the Philippines by providing a mechanism to facilitate smooth flow of soft and hard technologies among government, private sector and research institutions.
- ▶ In 2003, the National Economic Development Authority (NEDA) conducted a study entitled “*Needs Assessment of Technology Transfer for the Mitigation of Global Warming in the Republic of the Philippines*”.
 - ▶ The main objective of the study is to identify technologies that would reduce GHG emissions and needed to be transferred to the Philippines with high priority.

Gaps and Priority Needs on Technology Transfer

▶ Lack of Capacity

- ▶ Although there are a number of legislations, Executive Orders and Department Administrative Orders relating to technology transfer, policy implementation remains weak. A large part of the problem lies in the lack of institutional resources and human capacity to execute these policies. There is therefore the need to build the capacities of these executing agencies.

▶ Lack of financing

- ▶ Development and transfer of technologies is heavily dependent on financing. In developing countries, public finance mechanisms (PFM) have mostly been used to support technologies that are in the later stages of innovation but are still facing significant market barriers that inhibit their deployment.

Thank you!

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