



## Local Power to Act: Reducing Climate Risks for Rice Farmers

### Key Findings:

- Exposure to climate risks in the northern to central Philippines seriously threatens rice farming and the sustainability of rice farmers' income.
- Downscaled climate scenarios for the period centered on 2020, 2050 and 2080 show that in Tarlac province there will be more pronounced rainfall during the wet season and a drier dry season while in Pangasinan, more rainfall is likely to occur throughout the year.
- Communities practicing rainfed lowland and rainfed upland rice need improvement in knowledge, skills and social networking to cope with climate risks.
- Constraints in climate adaptation that are faced by local government units (LGUs) include inadequate human and financial resource capabilities, limited appreciation of the climate change phenomena, uncertainty in climate scenarios and limited knowledge about adaptation options.

### Climate change in the local context

In the northern and central regions of the Philippine, climate change risks are seriously threatening rice farming and the sustainability of farmer's livelihoods. Farmers in Pangasinan and Tarlac provinces reported that typhoon and continuous intense rain are the most frequent climate-related hazards that they have encountered. These brought farm income losses of 70-90 percent of total value of losses in lowland and upland rice farms in the two provinces.

A study conducted by UPLB researchers on downscaled climate scenarios for the period centered on 2020, 2050 and 2080 show that in Tarlac province there will be more pronounced rainfall during wet season and a drier dry season while in Pangasinan, more rainfall is likely to occur throughout the year. These projected changes could pose further risks to farmers and therefore require concrete adaptation action with the assistance of local government units.

## **Current farming practices**

The most common need of irrigated lowland, rainfed lowland and rainfed upland rice households is improvement in knowledge, skills and social networking. There are rare community interactions related to climate and disaster responses, a low level of collective action, and inadequate support to keep them informed about the climate change phenomena and appropriate long term adaptation options. Having been used to typhoon events, which average 20 per year, the majority of local households believed that climate variability and extreme climatic events are a matter of fate and beyond their control. Thus, most of those who are exposed to extreme climatic events have learned to live with these disasters and have no long term adaptation plans. When crops are damaged by typhoon and flooding, their response is to repeatedly re-plant whenever weather conditions permit.

In irrigated lowland areas, water allocation conflict usually arises during dry months. In rainfed upland areas, soil erosion and degradation usually occur as their farming system is generally not compatible with their sloping terrain.

## **Current response strategies and constraints**

The Philippines has major policy pronouncements that mandate the local government units (LGUs) to integrate climate change in the local development planning. This includes the Local Government Code of 1991, Climate Change Act of 2009, and the Disaster Risk Reduction and Management Act of 2010. To more effectively carry-out this mandate, local policy makers should be aware of the needs and capacity of the households and community to help them better cope with climate change and enhance their own capacity to provide needed assistance. Local planners should direct efforts to adaptive capacity enhancement of households, small-scale farmers and local institutions.

LGUs face constraints in fulfilling this mandate because of inadequate human and financial resource capabilities, limited appreciation of the climate change phenomena, uncertainty in climate scenarios and limited knowledge about adaptation options.

## **Policy recommendations**

Research results suggest that local governments should implement policies and programs that will cater to the specific needs of households and small-scale farmers to cope with climate risks since farmers' responses may not be effective enough to reduce the risks or prevent the recurrence of adverse impacts.

In Tarlac, where projected climate change could cause yield to decline by as much as 80% in 2080, there is a need to institute policies and programs that could ensure food security and people's livelihood such as regulating the conversion of prime agricultural lands to non-agriculture use and construction of suitable drainage and water storage facilities to collect and store excessive water during rainy months. For Pangasinan, the strategy should be to explore the opportunities that projected climate change is expected to bring. These include programs such as expansion of rice production areas to produce more food to further boost food security and livelihoods, and provide necessary support services (e.g. providing reliable seasonal climate forecasts; weather insurance products, etc.) to enable small-scale farmers to take advantage of the potential benefits that projected climate change will bring.

The LGUs of both provinces should also provide interventions such as information, education and communication campaigns to raise farmers' awareness about climate change and climate variability, and appropriate adaptation options and encourage community participation in climate change adaptation programs. LGUs should also assist the upland households located along the slopes who are highly exposed to natural disasters like typhoons and landslides.

Research institutions should develop technologies such as rice varieties suitable to extreme wet and dry conditions in Tarlac and other similarly situated provinces.

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**Contact for more information:**

**Dr. Linda M. Peñalba**  
Associate Professor  
Institute of Agrarian and Rurban Development Studies  
College of Public Affairs  
University of the Philippines Los Baños, the Philippines  
Email: [Impenalba@gmail.com](mailto:Impenalba@gmail.com)

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