



**Newton Agham  
Fund**



## Local Approaches to Supporting Agricultural Productivity and Managing Impacts of Climate Variability and Change in Indigenous Communities in Aurora Province, Philippines



Fig. 1. Members of the IP Communities in Northern Aurora during the Participatory Rural Appraisal conducted by the team members and the University of Reading

## RATIONALE

The livelihoods of much of the population of the Philippines are dependent on agriculture and are highly vulnerable to extreme weather events (EWEs). Flooding or dry weather hinders land productivity and results to low incomes which affects peoples' ability to meet their basic needs. Various groups characterized by social inequalities, associated with gender and age, feel these impacts differently. Within the Philippines, the province of Aurora has several indigenous people's groups (IPs), which are mostly reliant on farming and fishing. Their vulnerability is exacerbated by the impacts of climate change, particularly those in Northern Aurora where most typhoons land. The IP's current capacity on agriculture and climate change adaptation must be strengthened to deliver better interventions.

This project aims to establish community-based CCA strategies on agriculture and fisheries from the fusion of indigenous knowledge and science-based technologies towards resilient livelihoods of IPs in Northern Aurora. It takes a participatory approach to identify best local CCA practices and work with communities to strengthen their capacities to meet their needs. Strategies developed through the project will be rolled-out to the IP communities in the Sierra Madre mountains. The outputs of the project will continue to build the capacity IP communities to adapt to climate change, through the creation of research and learning materials. The research outputs and by organizing the IP communities to initiate resilient livelihood management, the project will contribute to individual, regional and national economic development.

## OBJECTIVES

This project aims to establish community-based CCA strategies in agriculture and fisheries from the fusion of indigenous knowledge and scientific technologies. It sought to:

1. Strengthen the research capacity of the collaborating scholars in Northern Aurora;
2. Analyze the climate change adaptation knowledge on agriculture and fisheries

of indigenous groups;

3. Identify, combine and strengthen local innovations, technologies and practices that will strengthen local climate change capacity and resilience among indigenous people's groups in Aurora, Province;
4. Develop community-based climate change adaptation livelihood strategies in agriculture and fisheries and disseminate them through strategic communication; and
5. Develop and implement training and learning materials to support continued skills building on research in climate change adaptation, knowledge advancement, and community livelihood improvement among the IP communities in Northern Aurora.



Fig. 2. Participatory Rural Appraisal with team members in the Philippines and team members at the University of Reading

## ACTIVITIES & METHODS

The following methodology were utilized in gathering data:

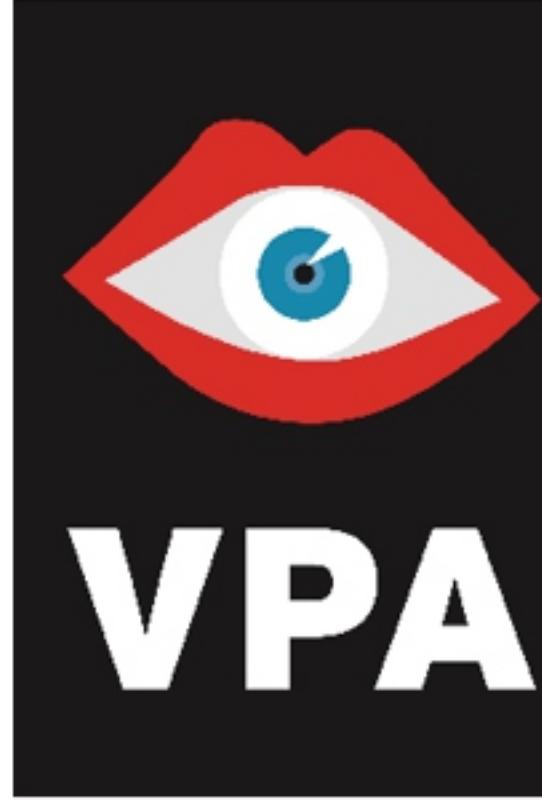
1. Participatory Rural Appraisal (PRA)
2. Roll-out of trainings
3. Assessment of immediate outcomes through survey and focus group discussion
4. Visual Problem Appraisal (VPA)

Though the study indicates the Province of Aurora, only the following barangays were selected:

1. Brgy. Simbahan, Dinalungan
2. Brgy. Calabgan, Casiguran
3. Brgy. San Ildefonso, Casiguran
4. Brgy. Diniog, Dilasag
5. Brgy. Diagyan, Dilasag



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## DISCUSSIONS



Fig. 3. Public Lecture at the University of Reading on the 2nd Visit of Team Members to the United Kingdom

livelihood, availability of water and food, income and expenditure patterns, and issues vital to the community.



Fig. 5. Sample Village Resource and Farming Systems Diagram

Figure 5 presents samples of the village resource and farming systems diagram in Brgy. Calabgan in the municipality of Casiguran, Aurora and Brgy. Simbahan in the municipality of Dinalungan, Aurora. The IPs in Brgy. Calabgan stated that they are in shortage of drinking water, fish, rice, and coconut. The men of Calabgan mentioned that there are no improvements in their farming system because of the frequent typhoon. Their coconut trees are also destroyed by the frequent typhoon, which affects their income. In the same manner, IPs in Simbahan also experienced shortage in coconut. Nonetheless, they mentioned that the rainy days gave them additional income because flooding usually caused in increase in eel, shrimp, and fish catch.

On the other hand, the IP communities were able to adapt to the changing climate of their environment through their knowledge systems such as the IP community in Brgy. Simbahan who found opportunities for income generation in the flooding they experienced. The members of the IP community in Brgy. Diagyan and Diniog in the municipality of Dilasag, Aurora stated that as part of their adaptation to typhoons, they harvest crops early so that they can minimize their losses. The women of San Ildefonso also stated that in order to lessen the impact of typhoons on their banana trees, they remove the leaves of the tree before a typhoon.



Fig. 4. Pre-testing and Development Workshop for the Participatory Rural Appraisal

Figure 4 presents the pre-testing and development workshop for PRA conducted at Baler, Aurora with the team members and their counterparts at the University of Reading. Field visits were also done with the communities of the IPs of Aurora province.

The PRA were done once to pre-test the instruments to be utilized in the actual PRA in August of 2018 and once for the actual data gathering in October of 2018. The PRA comprised of three activities: (1) construction of a village resource and farming systems diagrams which looked into how socio-economic patterns influence livelihoods and development options; (2) designing of daily activity clocks which illustrated the division of labor and labor intensity by genders and socio-economic groups; and (3) seasonal calendars which illustrated the seasonality of labor and



Fig. 6. Visual Problem Appraisal Workshop with Dr. Loes Witteveen

Figure 6 presents the Visual Problem Appraisal (VPA) workshop conducted by the team members with UoR which resulted to the creation of the VPA Northern Aurora toolkit. This toolkit will aid policy-makers and IP communities in participatory decision-making process and in identifying the best local climate change adaptation strategies that will strengthen economic capacities, in terms of agricultural livelihoods, of Agta and Dumagat farmers and fisher folks.

## CONCLUSIONS

The following are the conclusions: the visits between the collaborating Higher Education Institutions allowed for the mutual growth of research capacity of the two institutions, the PRA indicated that the IP communities experienced the effects of EWE but also applied indigenous knowledge to cope, and the VPA product could be utilized to mainstream the problems experienced by the IP communities and in order for policy-makers and stakeholders to craft responses that complement the practices of the IP communities of Northern Aurora.