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Resilience-building among smallholder farmers of selected upland farming communities in the province of Isabela, Philippines

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1. Summary

Marginal smallholder upland farmers in the Philippines are among the most vulnerable groups to farming shocks such as climate change, natural calamities particularly typhoons and drought, and more recently, the Covid-19 pandemic. In general, upland farms in Isabela are rainfed and farmers are engaged in the corn monocropping system which is highly dependent on external inputs. During the global Covid-19 pandemic, the production system of these farming communities was seriously disrupted. Farmers experienced limited supply of agricultural inputs such as seeds, fertilizers, and pesticides with increased prices by two to threefold during the pandemic. With the rising cost of agricultural inputs, crop production became more expensive leading to limited farmland being tilled. On the contrary, the buying price of their produce reduced significantly by almost 47%. The farming communities faced significantly high risk due to disruptions to farmers' production system.

This capacity development project under the APN CAPaBLE program puts emphasis on improving the farming systems of marginal smallholder upland farmers so that they are ready to adapt to expected future shocks and risks. This project aims to enhance the adaptive capacity of smallholder farmers in the uplands, redesign their production systems into an appropriate agroforestry system, and transform these communities to be shock resilient. Agroforestry has the potential to build the food and livelihood resilience of smallholder farmers to adapt to global, regional, and local challenges. The resilience level of these selected upland communities was evaluated based on five capital assets for sustainable livelihood, to wit: financial, physical, natural, human, and social capital assets. Results of the assessment showed that the three upland farming communities had a low level of resiliency.

The project focuses on enhancing the capacity of the upland farmers and the agricultural technicians of local government units (LGUs) in assessing their lands' capability for agroforestry development through the use of the Agroforestry Land Capability Mapping Scheme (ALCAMS) tool; and the design and development of appropriate agroforestry systems in their locality for sustainable production system and livelihood. Capacity-building programs were organized to enhance the awareness and capabilities of farmer organization members, local government units, and government agency technical staff on appropriate agroforestry system design and development and management of corn-based agroforestry system towards building farming community resilience to farming shocks threats such as Covid-19 pandemic, typhoons, and drought. In each project site, one appropriate agroforestry model was established to serve as a show window to the farmers and as a hands-on training site for farmers, LGU technician partners, and other collaborators. A policy analysis workshop was organized to determine the current policies related to resilience-building programs/projects. Representatives from concerned local government units and farmer organizations attended the workshop. Another workshop was convened to present/disseminate the outputs of the project and raise awareness on the importance of building the resiliency of smallholder farmers in the upland communities. Policy recommendations were formulated to serve as the collaborators' reference in their future resilience-building programs and projects.

2. Objectives

The main objective of this capacity development project is to increase the resilience and adaptive capacity of the upland smallholder farming communities to farming shocks such as climate change and pandemic.

Specifically, it aims to:

1. Analyze the resiliency index of three upland farming communities;
2. Train 45 smallholder upland farmers and LGU technicians on agroforestry design and development through ALCAMS method;
3. Establish one agroforestry model farm appropriate for each local community; and
4. Formulate policy recommendations to mainstream agroforestry in resilience-building programs/agenda of LGUs/agencies in the Isabela Province.

This project aims to address the following questions:

1. What are the impacts of the pandemic on food security and livelihood of the upland farming communities?
2. What is the current level of resiliency of the upland farming communities in Isabela, Philippines?
3. Given their current level of resiliency and the impacts of the pandemic on food security and livelihood, what social and technical interventions are appropriate to enhance their adaptive capacity and resiliency level?
4. What policy and institutional mechanisms are necessary to enhance the adaptive capacity and resiliency level of the smallholder farmers in the upland farming communities of Isabela Province?

3. Outputs, Outcomes and Impacts

Outputs	Outcomes	Impacts
Resiliency index of three upland farming communities.	The result of the resiliency assessment can be a basis for potential resilience-building programs and projects by the LGUs and other government and non-government organizations/agencies.	Improved resiliency level of the upland farming communities wherein the baseline resiliency index served as a reference in the assessment of the resilience level of these upland farming communities.

Enhanced capacities of three farming communities toward resiliency and adaptive capacity for critical and pervasive threats of the pandemic.	Build the technical capacity of the farmers, local government units, and the Department of Environment and Natural Resources (DENR) on Agroforestry Land Capability Mapping Scheme (ALCAMS), appropriate agroforestry design and establishment.	
Developed three appropriate agroforestry model farms with one model farm in each of the three project sites.	Appropriate agroforestry models established in each upland farming community will serve as a show window of appropriate agroforestry systems that can be adopted by the farmers.	Corn monocropping farms in the uplands are being diversified with integration of perennial components and developed as corn-based agroforestry systems
Developed policy briefs and policy recommendations on mainstreaming agroforestry in development programs of LGUs and agencies in the province.	Policy recommendations will be used by the local government units as a reference in mainstreaming agroforestry in their development programs with funding support from the LGUs.	Mainstreamed agroforestry as one of the resilience-building projects/programs by the local government units and other agencies in Isabela Province

4. Key facts/figures

- Socioeconomic characterization of three upland farming communities conducted.
- Resiliency level of three upland farming communities assessed.
- Three (3) appropriate agroforestry model farms established with one agroforestry model farm in each project site.
- Three (3) trainings on basic agroforestry concepts and establishment conducted in Masipi East, Cabagan; Limbauan, San Pablo; and Dy-Abra, Tumauini.
- Seventy-one (71) farmers, staff of barangay, municipal and provincial local government units, and DENR technical staff trained on basic agroforestry concepts and establishment.
- One (1) trainers training on integrated soil fertility and pest management conducted.
- Fifty-two (52) farmers, staff from the barangay, municipal and provincial local government units, and DENR trained on integrated soil fertility and pest management.
- One (1) policy analysis workshop organized and participated in by PO representatives, local government units, DENR, ISU and UPLB.
- One (1) dissemination workshop convened.

5. Publications

Ocampo, M.T.N., (2023). Establishment of corn-based agroforestry system in selected upland farming communities in the province of Isabela, Philippines. APN Report. University of the Philippines Los Baños, Philippines.

Ocampo, M.T.N., (2023). Agroforestry program and policy analysis in the municipalities of Cabagan, Tumauini, and San Pablo, Isabela – A self-assessment workshop. APN Report. University of the Philippines Los Baños, Philippines.

Ocampo, M.T.N., J. Garcia and E. Barcellano. (2022). Training of trainers on integrated soil fertility and pest management in corn-based agroforestry systems. APN Report. University of the Philippines Los Baños, Philippines.

Ocampo, M.T.N., J. Garcia and E. Barcellano. (2022). Training on basic agroforestry system concepts and establishments. APN Report. University of the Philippines Los Baños, Philippines.

Ocampo, M.T.N., J. Garcia and E. Barcellano. (2022). Participatory resiliency assessment of selected upland farming communities in the Province of Isabela, Philippines. APN Report. University of the Philippines Los Baños, Philippines.

6. Media reports, videos and other digital content

7. Pull quotes

"The project has opened the eyes of age-old corn monocropping farmers in the project sites to the possibility of integrating with corn other crops especially perennial crops turning their farms into an agroforestry system that can make their livelihood more profitable, climate resilient, and sustainable. As more farmers are getting interested in agroforestry, let us join hands as we sustain a new hope for better land resource management, and improved well-being of the upland farmers, with agroforestry as our means to make these things happen. Let us intensify and sustain the promotion and adoption of agroforestry towards sustainable natural resources".

Dr. Jose Nestor M. Garcia, Project Collaborator

"The project is timely and favorable to the environment. Timely because it helps increase the production of the area and improve the micro environment of the area".

Dr. Emerson V. Barcellano, Project Collaborator

"Convincing smallholder farmers to shift from their conventional corn-based farming systems toward integration of fruit trees was not at all easy. With scientific assessment and planning through the Agroforestry Land Capability Mapping Scheme (ALCAMS), however, model farms were established that shows potential benefits in enhancing the overall resilience of their farms through diversifying farm productivity and increasing farm income, among others. The multisectoral-participatory strategy/approach in each of the key stages of project implementation enhanced and firmed-up coordination and support from all agencies concerned such as the LGUs, DENR, SCUs, and most importantly among the partner POs/farmers/barangays".

Forester Rowena Esperanza D. Cabahug, OIC Director – Institute of Agroforetsry

8. Acknowledgments

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- Local Government Unit of Isabela Province. Office of the Governor, Office of the Provincial Agriculturist, Provincial Planning and Development Office and Environment and Natural Resources Office;
- Municipal Local Government Unit of Tumauini, Cabagan, and San Pablo, Office of the Mayor, Office of the Municipal Agriculturist, Municipal Environment and Natural Resources Office, and Municipal Planning and Development Office;
- Barangay Local Government Units of Brgy. Dy-Abra in Tumauni, Brgy. Masipi East in Cabagan, and Brgy. Limbauan in San Pablo;
- Farmer Organizations: Sierra Madre Greeners Association, Masipi East Upland Farmers Association, and Ambavi Greeners Farmers Association;
- Department of Environment and Natural Resources – Provincial Environment and Natural Resources Office in Isabela and City Environment and Natural Resources Office in Cabagan; and
- Philippine Coconut Authority (PCA) Regions I-III and CAR, and IV.

9. Appendices

Appendix 1. Project Briefings and Selection of Priority Upland Farming Communities in Isabela Province.

Appendix 2. Characterization of Selected Upland Farming Communities and the Impact of Global Pandemic in Isabela Province.

Appendix 3. Resiliency Level of Three Upland Farming Communities in Isabela Province.

Appendix 4. Training on Basic Agroforestry System Concepts and Establishment.

Appendix 5. Training of Trainers on Integrated Soil Fertility and Pest Management in Corn-based Agroforestry Systems.

Appendix 6. Agroforestry Program and Policy Analysis in the Municipalities of Cabagan, Tumauini, and San Pablo, Isabela: A Self-Assessment Workshop

Appendix 7. Dissemination Workshop: Sharing of Outputs, Lessons, Best Practices, and Policy Recommendations of Resilience-Building Among Smallholder Farmers of Selected Upland Farming Communities in the Province of Isabela, Philippines Project.

Appendix 8. Corn-based Agroforestry System Models in Selected Upland Farming Communities in the Province of Isabela, Philippines.