



Developing Scalable Approaches for Community-based Adaptation

Brief



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1. Climate change and smallholder farmers

This portfolio of climate smart practices were identified and selected according to priority. These are being tested by farmers after robust participatory vulnerability assessments were carried out. These assessments led to the identification of action research agenda and technological options that seeks to address the identified vulnerabilities. Such processes are facilitated in Guinayangan through a series of small action research projects implemented by the International Institute of Rural Reconstruction (IIRR) and the Local Government Unit (LGU), supported by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and the Adaptation and Mitigation Initiatives in Agriculture (AMIA) Program of the Department of Agriculture.

Smallholder farmers produce around 80% of the food that feed the world yet they face serious threats from climate change. Various studies emphasize that supporting smallholders to adapt to climate change is not only necessary but urgent. To build the resilience of this vulnerable sector, access to technologies, information, support services, market linkages and finance/credit must be provided. These will greatly help farmers improve their current production systems and practices.

IIRR's program of increasing the adaptive capacities of small farmers (especially the most vulnerable smallholder women and youth farmers) in the Philippines revolves around applying approaches that are proven to build resilience of rural livelihood and communities. It involves a four-fold approach to agriculture characterized by:

- increasing productivity;
- protecting the environment;
- facilitating adaptation to the increasing climate variability; and
- leveraging the value of nutrition in agriculture.

*This resilience building framework is being tested and developed by IIRR in its Guinayangan Learning Community in the Province of Quezon in the Philippines.

2. IIRR's Program: Sustainable intensification of agriculture-based livelihood



Small livestock systems not only help women accumulate assets but they are also a way of reducing the impact of crop failure (through diversification).



Sustainable Intensification of Livelihoods is IIRR's key programmatic approach in building resilient communities and livelihoods for smallholder farmers. It is best embodied in climate-smart agriculture (CSA), an approach that addresses food security in the context of a changing climate. It is environment friendly and sustainable which takes into consideration climate variability and change factors.

Its key objectives are to:

- increase agriculture productivity and income in a sustainable, environmentally sound manner; and
- build capacities of households, food systems, and agricultural value chains to adapt to and reduce risks associated with climate change.



Its secondary objective are to:

- reduce greenhouse gas emissions; and
- increase carbon sequestration of agricultural systems.

IIRR's work in the Philippines, particularly in its Guinayangan Learning Community, intends to deepen and build upon the knowledge base of existing community-based adaptation methods; scale-up/out climate-smart agriculture (CSA) at local and sub-national levels; and facilitate CSA outcomes in order to:

- enrich the gender-sensitive community-based adaptation approaches and scale up CSA at local levels;
- develop and test gender-sensitive CSA approaches that will increase the adaptive capacities of smallholder farmers and improve their food security conditions;
- identify community-based adaptation and social learning mechanisms that will encourage local governments to support policies and programs promoting it; and
- identify mechanisms and strategies that will facilitate multi-sectoral learning and policy advocacy dialogues about CSA at sub-national levels.

3. Operationalizing community-based adaptation through CSA



Selecting climate smart varieties for each agro ecological location is an important step in identifying options for local farmers.

IIRR conducts participatory action researches to generate evidence-based community-based adaptation methods. These researches are designed to identify scalable climate change adaptation/mitigation models that impact food security, nutrition and livelihood. The **impact areas** where the models are tested serve as on-site learning areas and foci for scaling out/up.

IIRR's CSA interventions with the local government is defined by the following major areas of work:

1. Understanding vulnerabilities through vulnerability assessments conducted at the:

- Municipal and barangay levels to probe climate-induced risks and vulnerabilities affecting community capitals/assets; and
- Sector/commodity level to examine impacts of climate change on commodities, value chains and major livelihood.

An impact area is a geographic site where specific CSA technologies are widely applied (e.g. SRI & LEIRP in lowland rice fields, fruit trees and multi-storey cropping in upland areas). It is also where a community-of-practice (group of CSA practitioners) generate outcomes and conduct farmer-to-farmer learning exchanges (social learning approaches).

Vulnerability assessments are done to gain better grasp of the location and context of specific climate change impacts. Results of these assessments will enable stakeholders to identify proper solutions.

2. Building social capital

This entails partnership building, networking and capacity building of/with: local government partners, local research stations, farmer learning groups (FLGs), farmer leaders, local agriculture extension agents and private sector (business, NGOs). Increasing the adaptive capacities of smallholder farmers requires developing various support systems that will bring CSA technologies and practices closer to them. Thus, multi-stakeholder collaborations are needed. Nurturing the capacity to innovate is an important dimension of this work.

IIRR and LGU projects have also enabled the municipality to establish CSA learning sites for farmer-to-farmer knowledge sharing. These sites are also learning hubs for development actors (NGOs, LGUs, academe) on CSA approaches and the governance behind it, such as partnership, building on traditional knowledge, and capacitating local actors.

3. Building the evidence base: planning, designing and field-testing strategic interventions

The portfolio of CSA options tested on the ground are identified and refined through an iterative process that revolves around a well-defined action research agenda. It enables farmers, agricultural extension workers and researchers to clearly define specific terms of references for on-site knowledge generation. Among the existing

Proof-of-concept site establishment

Key to this project is the establishment of an evidence-base to show the benefits of CSA. To do this, CSA models are tested in proof-of-concept sites where farmers are engaged in 4 key thematic participatory action researches. Impact areas are also established to facilitate farmer-to-farmer learning exchanges. As of reporting period, 13 impact areas are being developed. Results generated from these activities are used to facilitate the scaling out of CSA practices to 44 villages outside the 10 research sites.

Proof-of-concept sites for CSA are being developed in 10 villages in Guinayangan, Quezon: Arbismen, Sintones, San Pedro I, Himbubulo Weste, Magsaysay, Sta. Cruz, San Roque, Dancalan Central, Ligpit Bantayan, and Ermita. Farmers in these sites learn about farming practices that incorporate CSA methods and try it out themselves. Ultimately, they generate knowledge and establish evidences that prove the benefits of CSA practices.

Two hundred nineteen farmers are engaged in five (5) thematic participatory action researches that primarily aims to record how CSA practices can improve yield and income from small land holdings.

participatory action researches done in IIRR's Guinayangan learning community are:

- In upland coconut-based agro-ecosystems, farmers are learning about understory cropping. This involves various technological options to optimize the coconut understory to diversify their production from only coconut to other high value products such as corn, upland rice, mungbean, pigeon pea, cowpea, cassava, sweet potato, taro, banana, and forage species for livestock among others.
- In lowland rice producing barangays, rice farmers are learning about low external input rice production practices, meant to lower cost of rice farming but increase productivity through climate smart practices, such as dry nursery method, green leaf manuring, alternate wet and drying and systems of rice intensification. They are also testing new varieties that are hardy and perform at optimum levels during prolonged dry periods. Alternative crops such as mungbean and corn are also tested as part of diversification efforts.
- In coastal areas, fishing households are learning about coastal agriculture. They test various crops that can grow well in saline conditions, such as cassava, taro and root crops, and other legumes like soya beans and peanuts.
- Among households with small scale livestock production such as pigs and goats, women members (they mostly take care of livestock) are learning to use locally produced feeds, along with growing of forage gardens for high quality sources of forage.

Thirteen (13) farmer learning groups in 10 villages are engaged in PAR and farmer-to-farmer learning. These FLGs are engaged in generating knowledge in a total of eight (8) CSA learning agenda, namely:

Upland rice farming – 1 FLG with 12 members in Barangay Ermita

Low external input rice production (LEIRP) – 2 FLGs with 20 and 15 members in Barangays Arbismen and Sta. Cruz, respectively

Corn-legume intercropping – 2 FLGs with 13 members each in Barangays Cabong Sur and San Isidro

Intensive cassava production – 1 FLG with 11 members in San Luis II

Intensive banana production – 2 FLGs with 10 and 6 members in Barangays Sintones and Dungawan Paalyunan, respectively

Pineapple production – 2 FLGs with 8 and 16 members in Barangays San Luis II and San Luis I, respectively

Low external input pig production – 2 FLGs with 36 and 19 members in Barangays Arbismen and Ermita, respectively

Improved goat production – 1 FLG with 15 members in San Pedro 1.

4. Knowledge generation and scaling up

Scaling up is a strategic approach and essential component of IIRR's interventions in its learning communities. IIRR's aim of graduating thousands of households from poverty can only be achieved if it partners with local governments, national government agencies and key development actors in widely sharing and replicating innovative and practical approaches that addressed development issues in the learning communities. Uptake of such solutions by greater number of households and in wider geographic spread can only happen if access to such knowledge and practices are improved. Thus, evidence-base is developed and knowledge products are generated in order to be shared widely. More local government, communities and development actors will be influenced by simple and low-cost methods such as farmer-centered extension activities, roving workshops, site-visits, learning

Community-of-practice: critical mass of CSA practitioners or more than half of total households engaged in practicing, learning and continuously innovating specific CSA technologies (e.g. 20 of the total 35 households in 2 hamlets using alternative pig feed formulation)

exchanges, and thematic round-table events. Generated knowledge are also shared via multi-stakeholder dialogues and policy advocacy at least at sub-national levels via extension-communication materials (videos, policy briefs, research reports, sourcebooks) and through IIRR's international networks.

Another tested strategy for scaling up CSA at the national level is through an advocacy forum conducted in January 26 to 27. In this forum, IIRR and its local government partner shared their work that widely promotes CSA practices among farmers. Participants of the forum were carefully targeted in terms of their potential to scale up CSA at the national and subnational levels. Among the key offices under the Department of Agriculture (DA) that were invited to the event were the Systems Wide Climate Change Office (SWCCO), Operations Office overseeing Regional Field Offices, Planning Office, Agricultural Training Institute (ATI), and the Regional Field Office IV-A, which covers the municipality of Guinayangan. The event paved the way for IIRR's inclusion into the coordinating team of organizations that implement the DA's Adaptation and Mitigation Initiatives in Agriculture (AMIA) Program, which will define the department's national program for climate change adaptation. IIRR is now recognized as a key partner of DA in developing national climate change adaptation strategies. This recognition opened the way for IIRR to establish partnership with the ATI, and at least 2 state universities (Southern Luzon State University and University of the Philippines at Los Banos) in utilizing the Guinayangan action research site for learning and sharing knowledge on CSA.

4. Expected Program Outcomes

The program expects to reach thousands of farmers in the Philippines, particularly women and youth, and influence them to adapt various CSA practices. This will be delivered through multi-scalar scaling up activities targeting key agencies and networks, hoping to influence their respective training and extension programs to utilize the knowledge generated from this program. National and global media networks will be utilized as well.

The expected key outcomes are:

1. Smallholder farmers in the learning communities have increased their adaptive capacities and improved food security conditions through adoption of climate-smart and gender-sensitive sustainable intensification approaches;
2. Local governments and farmer groups have improved capacity to facilitate community-based CSA promotion and local adaptation planning;
3. Participating municipal government have incorporated CSA into regular local development programming;





Taking a holistic approach to the value chain is an important principle for successful climate smart agriculture projects.



4. Ground evidence backed up by knowledge products are used by local governments and farmers groups for wider promotion of CSAs and community-based adaptation to policy-makers, government agencies and civil society networks; and
5. Policy-makers, civil society, farmers groups, and the private sector are engaged in multi-stakeholder learning and policy advocacy dialogues on CSA and community-based adaptation.

5. IIRR in the Philippines

The Philippine Program will contribute to IIRR's global theory of change, through the Food Security and Resilient Livelihood (FSRL) flagship program identified and developed, building on the successful interventions done in its learning communities on areas of climate-smart agriculture, school and community nutrition programming through bio-intensive gardening, and community-managed DRR.

The Learning Community is an IIRR program approach wherein a group of people who share common values, interest, geography, beliefs and aspirations are actively engaged in learning together to find innovative solutions to their common problems or attain common goals. This group work together to establish the evidence base of scalable approaches they have tested in their locality; generate knowledge products on such approaches; and conduct knowledge sharing activities so that the knowledge reaches more people quickly. The Learning Community approach ensures that community members affected by poverty lead and fully participate in the entire process of development so that the efforts can be sustained. IIRR currently maintains three learning communities in the Philippines where it works with and/or through local partners to jointly learn, test and demonstrate various development interventions, approaches or technologies aimed to reduce poverty.

In scaling up good practices from learning communities, IIRR develops sharing platforms between and among local experts and leaders from within the learning communities. Then they link and collaborate with like-minded organizations and local governments in



generating knowledge and bringing it at higher levels (sub-national to national, and beyond) to facilitate greater cross-community learning.



Landscapes considerations are important in order to protect and enhance the ecosystem services on which farms are dependent.

Related Projects:

1. Climate change risk management and resilience building among small holder farmers: developing community-based models for climate-smart agriculture across municipal landscapes

Funding support: CGIAR CCAFS Small Grants Window

Partners: Guinayangan Local Government

Duration: February 2014 to August 2015

2. Generating evidence base for upscaling local adaptation through Climate Smart Agriculture.
Funding support: CGIAR CCAFS Flagship 1: Climate Smart Agriculture (CSA)

Partners: Guinayangan Local Government, World Agroforestry Center Vietnam

Duration: January 2015 to December 2018

3. Building community-based models for climate resilient agriculture and fisheries across landscape within municipalities

Funding support: Department of Agriculture, Bureau of Agricultural Research

Partners: Guinayangan Local Government, DA Systems Wide Climate Change Office

Duration: May 2016 to April 2017

4. Enhancing Ecosystem Services of Maulawin Spring Protected Landscape

Funding support: Philippine Tropical Forest Conservation Fund

Partners: Guinayangan Local Government, Department of Environment and Natural Resources Region IV-A

Duration: 2013 to 2016

CASE STORY

Handing over decisions to communities through community- centered approaches

Empowering farmers through participatory technology development

Participatory technology development (PTD) promotes farmer-driven technology innovation through participatory processes and skills building involving experimentation to allow small scale farmers to make better choices about available technologies (Practical Action, 2014).

In one of the villages in Guinayangan, women are taking the brunt of changing climate for the past 5 years. Longer dry seasons have reduced the rice production to just one season. It has caused decrease in production and the food security of most households is threatened, especially those of women who provide farm labor. They see alternative livelihood as the only way to ensure their family's food security.

Engaging in livestock is a traditional means for rural households to increase their income. However in Arbismen, swine production is seen as a livelihood for those with high income because commercial inputs are expensive. Raising swine using alternative feeds has proved to be significant for farmers in the village. Now many farmers, especially the women, are into swine



production. They practice this low cost production system that uses locally available feeds and housing materials. Seven (7) farmers were engaged in testing alternative feeds through PTD. After results proved that it is possible to have a low external input system in swine production, the number of farmers who adopted it grew to 34.

Julie Belmin is one of the 7 farmers who tested alternative feeds for her pigs. During learning group meetings, shesharesher experiences in taking care of the native pigs and large white pigs.



Together with her son Melicio, they began raising native pigs and managed the community breeding area. Now she raises both native pigs and white pigs and has a total of 23 (3 white sows, 4 native sows and 2 boar, 5 white fattening, 2 pure native newborn). Most of their pigs came as a payment for her native boar services in adjacent barangay, Capuloan Tulon, and 7 white piglets she sold.

Julie said that from her pigs alone, she earned Php40,000 in a year. She used some of the earnings to build additional housing for the pigs and for the land preparation of their small farm. She reiterated that native pigs are so easy to take care of. Like a trained pet, the pigs go in and out of the pen with ease. Native pigs are not sensitive and can cope easily to hot and cool environment. Most of all, one can start raising them with just a small capital.

Scaling out continued through the women who advocated the benefits of raising native pigs and using organic, alternative feeds. They also invite other farmers from adjoining villages to share to them their sustainable production practices. Farmers from other villages observed as the women demonstrated how to prepare feed rations using local plants and other available materials such as rice bran. The women have significantly decreased their dependence to commercial feeds, using it only during the first month. They shared other practices like using local materials for housing and designing it following the natural environment of the swine.

The women also emphasized the critical role of a group as a platform to reflect and exchange knowledge amongst farmers. Here they meet at least once a month and share stories, exchange ideas and ask for advise on how to address production problems they encounter.

The **Low External Input Livestock Production (LEILP)** system has two pronged benefit: economic and mitigation. On one side, it increases the income of farmers as production cost is lowered through the use of local crops (legumes, sweet potato, taro, madre de agua, etc). On the other side, it contributes to mitigation as the use of locally produced feeds translates to lower carbon footprint.

Peer learning or farmer-to-farmer learning has resulted to 12 more future champions of low external input livestock production. They are excited to adopt the approach and share this production system in their own communities.

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