



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Eight Guide Steps for Setting Up a Climate-Smart Village:

A TRAINER'S GUIDE



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Acronyms

AMIA	Adaptation and Mitigation Initiative in Agri-Fisheries
ANGOC	Asian NGO Coalition for Agrarian Reform and Rural Development
ASEAN-CRN	ASEAN Climate Resilience Network
CBA	cost-benefit analysis
CBA	community-based adaptation
CCAFS	CGIAR Research Program on Climate Change, Agriculture and Food Security
CIAT	International Center for Tropical Agriculture
CRVA	climate risk vulnerability assessment
CSA	climate-smart agriculture
CSV	Climate-Smart Village
DA-AMIA	Department of Agriculture's Adaptation and Mitigation Initiative in Agriculture
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization
FFS	farmer field schools
GIS	geographic information system
GSI	gender and social inclusion
HDDS	household diet diversity scores
HFIAS	household food insecurity and access scores
IFAD	International Fund for Agriculture Development
IIRR	International Institute of Rural Reconstruction
KAP	knowledge, attitude, and practices
LGU	local government unit
M&E	monitoring and evaluation
MEMC	Municipal Ecosystem Management Council
MSPL	Maulawin Spring Protected Landscape
NGOs	non-governmental organizations
OMA	Office of the Municipal Agriculturist
PCVRA	participatory climate vulnerability and risk assessment
PRA	participatory rural appraisal
PVA	participatory vulnerability assessment
REAP	re-entry action plans
SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture
USAID	United States Agency for International Development
VBS	village baseline survey
WASH	water, sanitation, and hygiene

Foreword

This publication on the 8 guide steps to making villages and their communities climate smart is designed to help trainers, implementers, and policymakers understand the processes for introducing and scaling Climate-Smart Villages. The 8-guide steps tackle the key local and institutional requirements in organizing a CSV. Government programs, development organizations, and donors do not have to start from scratch.

In recent years, the CSVs have turned into important platforms where context-specific and research-based agricultural solutions were brought to bear on local knowledge and local practices of farming practices. These solutions, which address the multifaceted impacts of climate change, have been adopted by many countries to enhance their climate strategies and action plans. They include technologies, practices, and services improving the farms' productivity, boosting the farmers' climate resilience, and reducing their greenhouse gas emissions.

The CSVs, with considerable on-ground evidence that they have generated, are now ripe for scaling. Currently in Southeast Asia, the CSV approach is being mainstreamed into the national programs of Vietnam and the Philippines and adopted in internationally funded projects in Myanmar, Cambodia, and Laos. Regional partners and other international organizations have also been taking notice of the benefits that CSVs bring to farming communities.

In coming-up with "Eight Guide Steps for Setting Up a Climate-Smart Village: A Trainer's Resource," the CGIAR Research Program on Climate Change, Agriculture and Food Security in Southeast Asia (CCAFS SEA) collaborated with the International Institute of Rural Reconstruction (IIRR) and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA). It draws on the extensive experiences of CCAFS and IIRR in implementing the CSV approach in Southeast Asia.

The guide steps follow the three principles: (1) context; (2) process; and (3) outcomes. Context emphasizes that there is no specific technology, practice, or service that can address all issues in every CSV. A unique portfolio of CSA options catering to the situation (e.g. climate risk) and needs of the target community should be packaged. Process refers to the participatory actions that implementers must take—from defining the rationale of CSV establishment to monitoring and evaluation and scaling—to achieve the desired outcomes in the CSVs. Outcomes refer to the changes in knowledge, attitude, and relationships of the target stakeholders, which can be attributed to the CSV activities.

This publication is simple yet comprehensive; straightforward yet informative. It presents a step-by-step process of establishing a CSV, with each step being complemented with learning objectives, session guides, and educational support materials. Additional links were provided for each step to promote further learning for its users. Different forms of visuals such as photos, maps, and graphs make the publication easy to read and thus easy to understand. This is almost a one-stop-shop for implementers to acquire the information, capacity, and other prerequisites necessary for establishing a CSV.

We hope that this publication will be a valuable resource material for those who wish to implement the CSV approach. It is now high time for us to carry the lessons of our previous activities and apply them to future interventions to help support food security and agricultural development under a changing climate. We are optimistic that we can achieve such feats as we continue to work together.

We also express our utmost gratitude to the smallholder farmers and farming communities who were partners in this effort to develop and test the CSV approach.

Leocadio Sebastian
Regional Program Leader
CCAFS Southeast Asia

Introduction

The pressing need for context-specific solutions to climate risks and vulnerabilities and the need for evidence which support recommendations that address them led to the initial development of the CSV approach. The CSV implementation in Southeast Asia is now in its fifth year. The interest is growing in the use of CSV (for out scaling context-specific solutions) especially at government levels. The CSV primers first presented by the International Institute of Rural Reconstruction (IIRR) in 2016 at a CCAFS event in India, was further developed jointly by IIRR and CCAFs and subsequently translated to Khmer, Burmese, and Vietnamese. These primers provided the conceptual basis for understanding the need for local platforms for addressing local vulnerabilities, for engaging local communities in finding solutions, and for demonstrating why incremental adaptation approaches are important. CSVs are platforms for demonstrating how climate-smart agriculture (CSA) can address multiple objectives: adaptation, mitigation, income enhancement, and social inclusion.

This 8-step process was developed to present the major steps in a simplified manner. This manual presents a set of guidelines containing relevant instructional guidance and educational support materials for those interested in supporting the training of implementers of the CSV approach.

In 2019, CCAFS, IIRR and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) organized a training workshop titled “Establishing Climate-Smart Villages (CSVs) in the ASEAN Region to Improve Food Security and Resiliency in Local Communities”. The training program adopted a mixture of approaches such as indoor sessions, agency visit, and field visit to CSVs. Feedback from participants inspired the development of this training guide.

How to use this guide

This guide proposes methodologies that have been utilized to train wide ranging actors on CSA and CSV. It was put together to support ongoing initiatives to promote and scale up adaptation strategies in agriculture. Session guides have been simplified and can be adapted to fit the context in which the training will take place.

The guide book is divided into two main parts. **Section 1** is the Eight Guide Steps in Setting up Climate-Smart Villages with explanatory notes on the rationale for each step. The session guide that precedes each step provides suggestions on how to conduct the training sessions building upon the experiences of CCAFS, IIRR and SEARCA.

Subsequent sections present a rich collection of reference materials to support trainers wanting to delve further into the concepts, strategies, and documented lessons and experiences of CCAFS, IIRR as well as other development agencies. One crucial factor that contributes to successful knowledge exchange is trainers' in-depth understanding of the topics before conducting the training. **Section 2** are attachments and web links to support deliberations of each of the steps. Going through the education support materials and accessing web-based materials prepare facilitators and trainers in creating a stimulating learning experience for participants and meaningful discussions. **Section 3** are info notes written by CCAFS and IIRR technical specialists and program managers. Overall an innovative and creative approaches are recommended to avail of current opportunities presented by technology and experiential training methods such as roving workshops.

Evaluation forms for each of the session have been provided and can be found in Section 2. The forms are to be filled out after conducting activities for each step. By soliciting reactions at the end of each session, trainers can fine-tune subsequent sessions. An overall training evaluation form is available in the annex section and is meant to be accomplished during the wrap up stage of the training program.

Overview of the training program

The training usually has the following objectives that can be adapted to the specific training that will be conducted. The following can be revised:

1. To examine the steps for setting up a Climate-Smart Village.
2. To consider applicability of the eight steps to their own context.
3. To identify requirements and facilitating factors in setting up and scaling up Climate-Smart Villages.

The training can be divided into three parts and spread over a period of time contingent on the availability of resources, number of participants and weather condition.

Preliminaries

This part happens at the start of the training program and it sets the stage for the series of training activities. It is here where training objectives, methodologies, outputs and expectations are clarified and negotiated.

Step 1

Contents:

Climate change impacts

Climate-smart agriculture concepts and practices

Key components and elements of Climate-Smart Village Approach

Ways to achieve multiple outcomes – resilience building, increasing adaptive capacities and productivity, reducing gender inequality and social inclusion

Step 2

Contents:

Understanding climate risks and vulnerabilities using available assessment tools
Assessment methods and procedures
Participatory rural appraisal and tools

Step 3

Contents:

Factors to consider in choosing a CSV site
Lessons from existing CSVs

Step 4

Contents:

Multi-stakeholder partnerships, its role in achieving CSV outcomes
Ways to engage stakeholders and process for facilitating consultations

Steps 5 and 6

Contents:

Participatory action research
Climate adaptation strategies
Promoting farm-level innovation development
Roving workshop

Steps 7

Contents:

What “scaling up” means
Facilitating factors

Steps 8

Contents:

Planning for M&E
M&E tools

Preparations for the field visit

If the roving workshop methodology will be used for the field visit it is important to identify communities and agencies at least 3 months ahead of the training schedule.

Identify CSVs and agencies to be visited during the roving workshop (see Annex 1 for sample roving workshop conducted). Research centers with tested technologies may be considered. It is important to prepare the sites. It should be a combination of various agroecological settings that showcase CSA options and best practices adopted to address the prevailing climate risks specific to these settings.

Identify the learning agenda. Within each identified site, farmers are expected to share their practices and innovation. Prepare information sheets such as community profile, project summary or summary of baseline report/vulnerability assessment and technological profiles. Distribute field visit kits before the roving workshop. Allocate

Suggested Training Schedule

DAY	ACTIVITIES
Training preparation	Coordination with resource speakers and facilitators Field visit preparation
Day 1	
AM	Preliminaries Opening remarks Introduction of participants Training overview Participant expectations Step 1 Define the purpose and scope the CSVs that is/are being established Activity 1: Panel Discussion Activity 2: Case Presentation Activity 3: Gallery walk or World Café Activity 4: Evaluation
PM	Step 2 Identify the climate risks in the target area/s Activity 1: Interactive Discussion Activity 2: Introduction to participatory methods and tools
Day 2	
AM	Step 3 Locate a CSV in a small landscape Activity 1: Introduction Activity 2: Interactive discussion Activity 3: Evaluation Step 4 Consult the stakeholders Activity 1: Introduction Activity 2: Participants sharing and interactive discussion Activity 3: Presentation on strategies for partnership and stakeholders' engagement Activity 4 Workshop Activity 5 Evaluation

DAY	ACTIVITIES
PM	Step 7 Scale up Activity 1 Interactive discussion on scaling up Activity 2 Evaluation Step 8 Monitor and evaluate uptake and outcome Activity 1 Plenary presentation Activity 2 Evaluation Preparation for field practicum (participatory methods and tools)
Day 3	Step 2 Identify the climate risks in the target area/s Activity 3 Group Exercise and Field Practicum Activity 4: Evaluation
Day 4 and 5	Step 5 Evaluate CSA options and Step 6 Develop portfolio Activity 2 Introduction Activity 3 Field visit to CSVs
Day 6	Step 5 Evaluate CSA options and Step 6 Develop portfolio Activity 4 Planning workshop Activity 5 Evaluation

Session guides for the Eight Guide Steps for Setting Up a Climate-Smart Village



This manual is characterized by the 8-step process presented below:



Step 1.

Define the purpose and scope of the CSV/s that is/are being established



At the program/national level, develop the framework that justifies the need for the CSV approach. Ensure there is a common understanding of key concepts and principles such as: a CSV is a platform for action research to test, develop, and support the scaling of CSA technologies and approaches; a CSV is designed to help in deriving practical adaptation options to ensure food security, improve resilience, and decrease emissions of greenhouse gases; and CSVs are meant to generate and scale CSA technologies and social learning approaches or to scale the CSV methodology.

Contents

- Climate change impacts
- Climate-smart agriculture concepts and practices
- Key components and elements of Climate-Smart Village Approach
- Ways to achieve multiple outcomes - resilience building, increasing adaptive capacities and productivity, reducing gender inequality, and social inclusion

Session Guide



Learning objectives

At the end of the session, participants should be able to:

- Explain CSV approach and CSA concepts;
- Discuss the multiple outcomes of CSV; and
- Characterize CSA technologies and approaches implemented by established mature CSVs.



Procedure

Activity 1. Panel discussion on key concepts

- Discuss concepts related to CSA, CSV, and Climate Change Adaptation. A panel may also be organized consisting of 3 speakers from various agencies. Important topics for discussion are:
 - Climate-Smart Villages: An Agricultural Research for Development Approach to Addressing Climate Change and Food and Nutrition Security
 - Building Resilience, Increasing Adaptive Capacities, and Productivity of Agri-centered Livelihoods
 - Gender and Social inclusion
- After the presentations, generate feedback and questions from participants.
- Summarize main points from the discussions.

Activity 2. Case presentation

- Identify a CSV that will be featured during the session. A speaker may be invited to discuss a particular case. The case of Guinayangan in the Philippines may be presented (see Attachment 8).

Activity 3. Gallery walk or World Café

- Select CSA technologies that will be showcased during the training. Present them in posters to be set up during the training event.
- Gallery walk allows participants to interact with practitioners as they move through exhibited materials. If possible, invite resource speakers to discuss poster contents. Participants may be divided into smaller groups. Depending on the number of resource persons, each group will be given time to interact with a resource person and then move to the others.

Activity 4. Evaluation

- Generate feedback and comments on content, methods, and resource speakers. Ask participants to fill out evaluation forms (see Attachment 9).



Step 2.

Identify the climate risk in the target area/s

For each of the target area (agro-ecological regions, province, districts), understand the current and anticipated impacts of climate change on local agriculture (crops, livestock, etc.) and the associated landscapes. This can be done through: conducting rapid baseline study, household-level assessments, and focus group consultations, and scoping of available climate data resources and studies, followed by preparation of location-specific climate risk maps and conduct of vulnerability assessments. Simplified tools should be used, so that local partners can manage.

Contents

- Understanding climate risks and vulnerabilities using available assessment tools
- Assessment methods and procedures
- Participatory rural appraisal and tools

Session Guide



Learning objectives

At the end of session, participants should be able to:

- Determine appropriate approach and methods to identify and assess climate risks and vulnerabilities in their communities; and
- Demonstrate skills in using data gathering tools and methods such as PRA and focus group discussion.



Procedure

Activity 1. Interactive discussion

- If possible, organize speakers from various agencies to discuss different approaches that can be used to generate data in an attempt to understand risks, vulnerabilities, resources and current and future impacts of climate change on agriculture.

Activity 2. Introduction to participatory methods and tools

- Present PRA tools and discuss how they are used.
- Discuss the requirements to be able to perform the assessments in a comprehensive and participatory manner.

Activity 3. Group exercise and field practicum

- Choose at least one tool from the selection of PRA tools and demonstrate how it is used.
- If possible, identify a community where the participants can undertake an assessment using appropriate PRA tools. Prior to the training, discuss procedure with community members, ensure there is gender balance and representation of sectors. Participants should adequately plan for the field-based training.

Activity 4. Evaluation

- Generate feedback and comments on content, methods and resource speakers. Ask participants to fill out evaluation forms (see Attachment 8).



Step 3.

Locate a CSV in a small landscape

■ In locating a CSV in a small landscape, understand that contextual differences matter. In this regard, consider the following: a CSV should represent specific agro-climatic conditions and climate risks; a CSV can consist of a single village or cluster of villages, preferably associated with small landscapes and watersheds; and a CSV may be located in related projects or activities and with existing partnerships with local governments and local communities.

Within the target region, clearly identify and delineate geographic areas of the proposed CSV location (village, commune, small landscape). Ethnic or cultural diversity and different farmer types should also be considered and recognized. Undertake CSV-specific climate risk mapping studies and livelihood analysis using simple PRA tools and focus group discussions. After undertaking all these processes, prepare the CSV.

Contents

- Factors to consider in choosing a CSV site
- Lessons from existing CSVs

Session Guide



Learning objectives

At the end of the session, participants should be able to:

- Explain the criteria and other considerations when choosing a CSV; and
- Identify potential CSV/s within their locality.



Procedure

Activity 1. Introduction

- Present case studies (see Attachment 1 and 2) to the participants to surface lessons and what worked in existing CSV sites.

Activity 2. Interactive discussion

- Give participants time to discuss the factors that contributed to the success of CSV establishment and scaling.
- Emphasize that outputs of analysis are the ultimate guide in the selection of CSV/s.

Activity 3. Evaluation

- Generate reaction on content and method. Ask participants to fill out evaluation forms (see Attachment 3).



Step 4.

Consult the stakeholders

Organize a stakeholder workshop and orientation in the target area. Here are steps in conducting a stakeholders' consultation: conduct orientation session on CSVs for stakeholders; agree on the objectives, purpose and scope of the CSVs; identify and agree on partners, resource institution, and lead entity; plan early for scaling; and prepare a 3-year workplan.

Contents

- Multi-stakeholder partnerships, its role in achieving CSV outcomes
- Ways to engage stakeholders and process for facilitating consultations

Session Guide



Learning objectives

At the end of the sessions, participants should be able to:

- Discuss key activities and target outputs of stakeholder consultation process; and
- Identify ways to engage potential partners and resource institutions.



Procedure

Activity 1. Introduction

- Discuss briefly the identified steps in conducting a stakeholders' consultation.

Activity 2. Participants sharing and interactive discussion

- Draw out lessons and insights by asking participants to share their experiences in partnership development process and engaging stakeholders.

Activity 3. Presentation on strategies for partnership and stakeholders' engagement

- Using Attachment 1 and 2, present principles of effective partnership and process for facilitating multi-stakeholder consultations.

Activity 4. Workshop

- Ask participants to identify key stakeholders and potential partners and ways to create linkages and partnerships.

Activity 5. Evaluation

- Solicit reactions on content and methods. Ask participants to fill out evaluation forms (see Attachment 3).



Step 5.

Evaluate CSA options

Through participatory action research, evaluate CSA options addressing climate impacts and improving productivity and sustainability.

In evaluating CSA options, recognize that CSVs are platforms for testing, deriving, and subsequently promoting locally-adapted options in out-scaling efforts. CSV is used to prioritize options unique to the local context. Identify methodological innovations and social learning approaches: cultural and social methods that support spontaneous and planned scaling, identify windows of opportunity and test and develop scaling approaches and pathways.



Step 6.

Develop portfolio

Integrate selected CSA options in current crop management practices and technologies for different target groups or/and agro-ecologies. In developing a CSA portfolio, consider: climate risks, but so do livelihoods and expectations of constituents; location specificity and context even at local levels; and support systems must be placed (innovation support mechanisms, revolving funds, decentralized breeding centers for livestock/ local seed systems, credit, climate information, etc.).

Contents

- Participatory action research
- Climate adaptation strategies
- Promoting farm-level innovation development
- Roving workshop

Session Guide



Learning objectives

At the end of the session, participants should be able to:

- Describe the PAR approach;
- Characterized CSA practices in various CSVs; and
- Identify key lessons and facilitating factors in scaling CSA options.



Procedure

Activity 1. Introduction

- Orient participants on the schedule and methodology.
- Distribute information sheets.

Activity 2. Field visit to CSVs

- Introduce the concept of PAR, Community Innovation Fund, and Farmer Learning Groups (see Attachments and Educational Support Materials)
- During the actual field visit, ensure there is exchange of ideas between/among participants and CSV stakeholders.
- At the end of each site visit, facilitate reflection sessions.
- After the field visit, synthesize key lessons and insights.

Activity 3. Planning workshop

- Ask participants to discuss and identify farm-level adaptation strategies using field-derived lessons and emerging ideas.

Activity 4. Evaluation

- Ask for reactions and comments on content, methods and resource speakers by filling out the evaluation forms (see Attachment 3).



Step 7.

Scale-up

Identify scaling opportunities and pathways. Prepare a plan in consultation with the stakeholders. To scale-up, identify opportunity for horizontal (farmer to farmer, community level, etc.) and vertical scaling (policy makers and local governments); identify and map out key players (extension, civil society organization, state universities, investors); organize events to share CSA technologies and tools and to disseminate findings and engage media and communications specialists in promoting successes and stories.

Contents

- What “scaling up” means
- Facilitating factors

Session Guide



Learning objectives

At the end of the session, participants should be able to:

- Discuss scaling principles and considerations; and
- Identify opportunities and options within their own context.



Procedure

Activity 1. Interactive discussion on scaling up

- A speaker may be invited to present key lessons and principles. A case study analysis may also be used as an alternative methodology (see Educational support materials for case studies).
- Allow participants to give reactions or ask questions.
- Wrap up by highlighting key points.

Activity 2. Evaluation

- Ask for feedback on content, methods and resource speaker. Ask participants to fill out evaluation forms (see Attachment 2).



Step 8.

Monitor and evaluate (M&E) uptake and outcome

■ Include the M&E framework in assessing uptake and outcomes in implementing the CVS.

Here are the steps, to implement M&E of uptake and outcome: conducting (on annual basis) local reviews and assessment; assessing outcomes from action research undertaken in CSV on a regular basis using multidisciplinary teams, multiple stakeholder representatives, and community representatives; using indicators such as productivity, livelihoods, food and nutrition equity, gender, and resilience to monitor progress; and developing outcome stories (substantiated by evidence and demonstrated by the scale of adoption, with the likelihood of being sustained).

Contents

- Planning for M&E
- M&E tools

Session Guide



Learning objectives

At the end of the sessions, participants should be able to:

- Discuss the M&E key concepts and elements;
- Characterize different M&E tools used by other CSVs; and



Procedure

Activity 1. Plenary presentation

- Discuss key concepts and establish the role of M&E in achieving program goals and objectives. It is important to present various methods and tools used in gathering data
- Present a case study

Activity 2. Evaluation

- Obtain feedback and comments on content, methods and resource speaker. Ask participants to fill out evaluation forms (see Attachment 1).

Resources for trainers: Session attachments and links to online education support materials



STEP 1. Session Attachments



Attachment 1

Climate change impacts on agriculture

Reports have shown that production systems and livelihood activities heavily relying on natural resources such as agriculture and fisheries are negatively affected by climate change impacts. The Food and Agriculture Organization (FAO) outlined 6 possible climate change outcomes that affect agro-ecosystems. Climate change impacts are site-specific. Some explicit effects on agriculture include agro-biodiversity loss, soil degradation, reduction in productivity, and water shortage (IIRR and CCAFS, 2016). As a response, climate-smart agriculture (CSA) concept was introduced by FAO in 2010 at the Hague Conference on Agriculture, Food Security, and Climate Change to facilitate the advancement of multi-dimensional thinking and actions to ensure resilience of agricultural systems in the context of a dynamic environment. CSA is practiced differently in every location depending on the climate change manifestations in the area. Food security depends largely on productivity of agriculture sub-sectors. Thus, existing and new sustainable adaptation practices must continue to be developed.

The following are the reported possible effects on agro-ecosystems as summarized by FAO

- Increased variability and unpredictability of weather and climate events: for example, changes in seasonal rainfall variability, high rainfall variations such as longer dry periods, higher or lower temperatures, heatwaves and others
- Changes in timing of seasons: there are areas experiencing an earlier arrival of spring that affects the lives of migratory animals; but also planting periods and wet seasons start late or finish early
- Dry spells that affect crops at different points in the growing season
- Alteration in land suitability for agricultural production or grazing
- Increased intensity of extreme weather events such as sudden downpours and windstorms, droughts, floods, cyclones
- Increased pest and disease outbreaks

Source: FAO. 2018. Climate-smart agriculture training manual – A reference manual for agricultural extension agents. Rome. 106 pp. Licence: CC BY-NC-SA 3.0 IGO.



Attachment 2

Climate-Smart Agriculture

CSA promotes multiple outcomes and advocates paradigm shift, application of a holistic approach and multi-level actions. FAO defined CSA by its three main objectives:

1. Sustainably increasing agricultural productivity and incomes.
2. Adapting and building resilience to climate change.
3. Reducing and/or removing greenhouse gases emissions, where possible.

Agricultural practices and systems need not achieve all three objectives to be considered CSA but the objectives are meant to guide decisions-making at different levels. It is also important to emphasize that the application of CSA concept is context-specific and requires information from various sources (FAO, 2018).

The complexity of interaction within ecosystems requires contextualizing CSA within landscapes and within food systems. The various food systems that exist influence how agriculture is shaped. Food systems orientation is important to achieve and sustain program outcomes.

CSA can also be nutrition-smart with the integration of nutrition education and other nutrition-sensitive intervention. Diversification of farms, a CSA practice, for example can significantly contribute to nutritional challenges faced by communities



Attachment 3

Climate-Smart Village

The context specificity of climate change adaptation strategies in agriculture led to the development of the Climate-Smart Village Approach (CSV) as initiated by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). CSVs serve as focal points for location-specific research which in turn facilitates co-creation of innovative solutions to current and anticipated future impacts of climate change

CSVs are being promoted as platforms for supporting local adaptation efforts and as proof of concept sites for Climate-Smart Technologies and Practices. CCAFS developed the CSV approach to provide context-specific solutions to climate risks at the level of the community or the villages. It is specifically designed to capacitate farmers, especially smallholders, in facing the challenges posed by climate change through experiential learning and to enable them to establish their own CSVs in the future.

They are being floated as “go to places” where solutions are developed/ promoted/ disseminated to surrounding communities of farmers. CSVs have also served as platforms for researchers to engage in adaptive research and in multi-locational research (agroecology specific). CSV are platforms to support local adaptation. Their potential use is not limited to Research Community: other entities such as government line agencies and local governments and civil society can also become proponents of CSVs as platforms of context specific and local adaptation work. These CSVs can then serve to support outscaling and mainstreaming at different levels

Since their establishment, CSVs have generated data and lessons that were used by national agencies to improve programs and policies. CSVs demonstrated what can be accomplished through partnership and resource sharing among communities, local governments, national agencies, and international development agencies. CCAFs has established CSV in various regions of the world. Model CSV sites have already been initiated in Cambodia, Laos, Myanmar, the Philippines, and Vietnam, which serve as platforms for climate-smart agriculture (CSA) learning and community-based participatory action demonstrations. IIRR has been a leader in developing the CSV methodology ie the process of CSVs as action research, learning, and sharing platforms.



Attachment 4

The CCAFS CSV Approach: Guiding Principles and Key Components

Presentation Highlights

Dr. Leocadio S. Sebastian

Regional Program Leader for CGIAR Program
on Climate Change, Agriculture, and Food Security in Southeast Asia
Workshop on Establishing Climate-Smart Villages in the ASEAN Region
to Improve Food Security and Resiliency in Local Communities
July 9, 2019

- Climate-smart agriculture needs smart implementers. CSA is context-specific and puts a lot of emphasis on the process. It is also more about outcome or what happens after the technology is introduced to the community, rather than just the technology per se.
- CSVs have varying degrees of success because villages have different contexts, such as the problems they face, climate stresses, and extent of participation. Thus, it is important that the lessons learned from the workshop are positioned within the context of the communities where CSVs are to be established.
- CSVs will have a different level of success. Each CSV addresses a different climate change; for instance, the CSVs in Ma and My Loi in Vietnam aim to improve resilience to flooding while those in Ekkhang and Phailom in Lao PDR try to address drought.
- The concept of climate-smart villages involves helping villages adopt climate-smart agriculture from specific farmers to a landscape. The process starts with social mobilization, which takes advantage of the existing political setup. Among the options that can be promoted to villages are climate smartness in the areas of weather, water, carbon, nutrient and pest, energy, and knowledge, depending on the context of the community. Selection of the appropriate option for a particular village follows a process that involves scoping, base lining, and participatory prioritization process with the community. Dr. Sebastian went on to discuss the protocols that CCAFS follows in establishing CSVs, namely:
 1. Establishing partnership with local organizations and organizing CSV teams
 2. Conducting a baseline study
 3. Building capacity for CSV teams
 4. Social preparation and community engagement
 5. Participatory land use planning

6. CSA prioritization exercise
 7. CSA evaluation and testing
 8. Upscaling
 9. Monitoring and evaluation
- Another part of the CSV process is community-based land use planning, which uses participatory techniques to align community-produced land use plans with government land use plans. Meanwhile, CCAFS used posters to facilitate participatory CSA prioritization at the village level.
 - The following are the key concepts underlying the CSV approach:
 - Communities within a small landscape
 - Provision of platforms for multi-stakeholder participation and collaborative work
 - Site for collective and concerted actions at the community level and its surrounding landscape
 - Development of solutions to anticipated future impacts of climate change
 - Generation of location-specific evidence
 - Fostering opportunities for farmer participatory research
 - Conduit for upscaling CSA
 - There is simplified procedural steps in setting up CSVs, which was developed by CCAFS and which can guide participants in applying the approach in the context of their respective countries.



Attachment 5

Building Resilience, Increasing Adaptive Capacities and Productivity of Agri-centered Livelihoods

Dr. Julian F. Gonsalves

IIRR Senior Adviser and CCAFS Project Leader

Workshop on Establishing Climate-Smart Villages in the ASEAN Region
to Improve Food Security and Resiliency in Local Communities

July 9, 2019

Presentation Highlights

- CSVs serve as a scalable platform that brings about holistic and socially inclusive approaches to demonstrate location-specific solutions to climate risks. A transformational change in the rural livelihoods is one of the main indicators of its effectiveness.
- The different shifts that can occur due to climate change, namely, geographic shifts or change in area of suitability; elevation shifts; seasonal shifts that may involve change in yield and cropping patterns; and extreme event shifts. This is why targeting matters, since one size does not fit all. Different types of targeting should be considered, such as geographical, agro-ecological, and social group targeting.
- Diversification of crops is a key step in the slow climate change adaptation process, and that CSA recognizes that the process is not only about climate-smart crops and varieties. The more diverse agro-ecological systems are more resilient while the more homogeneous ones are less resilient. Agroforestry is one method of diversification.
- Incorporating local knowledge about unique local responses into the system is significant, for example, the use of windbreakers in farming villages in Batanes Islands in the northern Philippines. Micro-dosing of chemical fertilizers is practical in the context of agro-ecological approaches.
- Small farms, are also seen to have the potential to become economically viable units while serving in green growth and family farming efforts. Most of the food produced globally are from smallholder farmers; thus, smallholders are the key and they can become more resilient than large-scale farmers due to diversification.
- It is not only about technologies but also about access to resources and land. He said that a key issue in this regard is that in most parts of the world, there are no frontline agricultural workers; thus, most initiatives establish farmer field schools (FFS), which does not reach majority of farmers. A method that allows for a large interface with farmers is the farmer-to-farmer extension system.

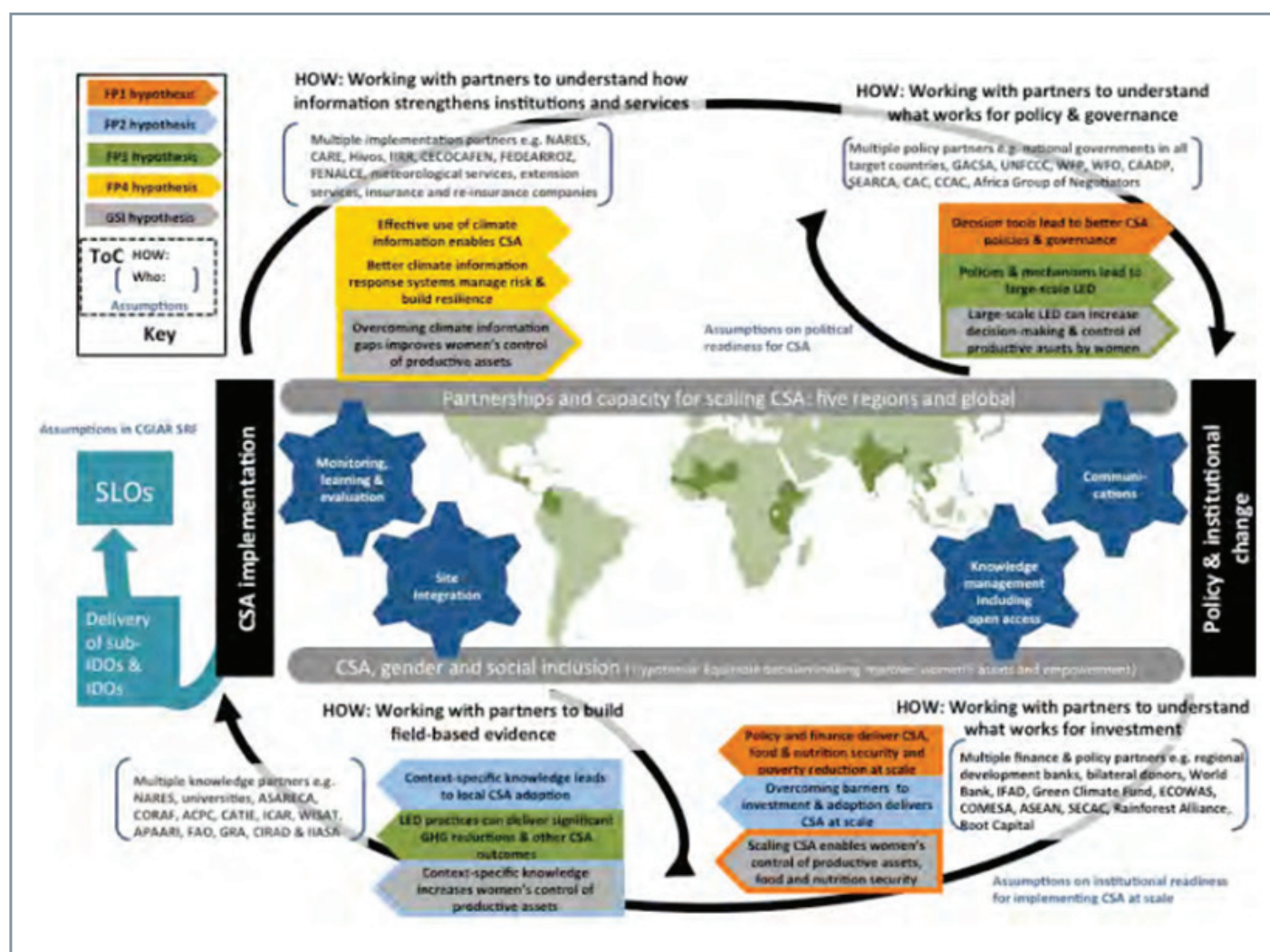
- There is a need to move beyond “islands” of innovations to impact on scale. It is worthy to look back at the criticisms of the Green Revolution, which adopted innovation diffusion in its early years.
- Make sure to avoid the elite capture of the innovations introduced, which does not always facilitate wider farmer-to-farmer processes, as well as the risks of cumulative advantage that allows for the same group of people to benefit from interventions, as these prevent the scaling of initiative and approaches. Scaling and sustainability are two faces of the same coin.
- Incremental adaptation takes place naturally. Addressing current climate change issues now and on scale helps build resilience and helps nurture innovation development at the community level. The “no regrets” approach, which constitutes adaptive practices and actions that will be beneficial in the future, regardless of whether the worst projections materialize or not.
- The three dimensions of resilience include absorptive, adaptive, and transformative capacities.
- Farmers that are stepping up invest in agricultural assets to expand the scale of intensity of existing activities, including purchases of at least some inputs or services. Stepping out involves the accumulation of assets that allow investments or shifts into new activities and assets. Meanwhile, “hanging in” is characterized by maintaining and protecting current levels of wealth and welfare amid threats of stresses and shocks. Lastly, food insecure agriculture-based livelihoods are those that are chronically food-insecure, experiencing food deficits for more than five months annually.
- There is a false dichotomy between rural and urban labor during the agrarian transition. Most families actually occupy the central ground and does not fit into rural or urban categories.
- Climate-smart agriculture provides new opportunities to address the need for local adaptation, resilient livelihoods, agrobiodiversity conservation, and better nutrition. Meanwhile, climate-smart villages provide platforms for ensuring that various interventions converge at the local level, where it matters the most. CSVs can be considered as “lighthouses” where communities test, develop, and subsequently adopt appropriate CSA practices and technologies on a wider scale.
- CSVs provide a wide array of options for farms, landscapes, food systems, and services.



Attachment 6

CCAFS Gender and Social Inclusion Strategy (GSI)

CCAFS' GSI aims to promote gender equality within the context of CSA, food systems and landscapes work (Huyer S, Campbell BM, Hill C, and Vermeulen S., 2016).



Source: Huyer S, Campbell BM, Hill C and Vermeulen S. 2016. CCAFS Gender and Social Inclusion Strategy. CCAFS Working Paper no. 171. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Available online at: www.ccafs.cgiar.org <https://cgspace.cgiar.org/bitstream/handle/10568/72900/WP171>



Attachment 7

Gender-responsive CSA



GLOBAL ALLIANCE FOR
CLIMATE-SMART AGRICULTURE

Sibyl Nelson and Sophia Huyer

KEY MESSAGES

- 1** The gender gap in agriculture affects how men and women access and benefit from CSA.
- 2** A gender-responsive approach to CSA addresses this gap by recognizing the specific needs and capabilities of women and men.
- 3** Site-specific CSA practices that are also gender-responsive can lead to improvements in the lives of smallholder farmers, fishers and foresters, as well as more sustainable results.



Food and Agriculture
Organization of the
United Nations



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Source: A Gender-responsive Approach to Climate-Smart Agriculture Evidence and guidance for practitioners: PRACTICE BRIEF on Climate-smart agriculture. Nelson, S. and Huyer, S. 2016.

Access full brief here

<https://cgspace.cgiar.org/bitstream/handle/10568/73049>



Attachment 8

Elements of a CSV: The Case of Guinayangan, Quezon, Philippines

Mr. Rene R. Vidallo, Philippine Country Program Director, IIRR
Workshop on Establishing Climate-Smart Villages in the ASEAN Region
to Improve Food Security and Resiliency in Local Communities
July 9, 2019

Presentation Highlights

- The greatest proof of empowerment observed in the Guinayangan CSV is the big change in the level of confidence of the program partners, especially those who are working in the agriculture division of the LGU.
- Guinayangan as a third-class municipality in Quezon Province, Philippines with a population of 45,155 as of 2015. Its economy is largely agriculture-based, having monocrop coconut plantations as the dominant structure. Based on participatory vulnerability assessment, the climate-related risks faced by the municipality include storms, typhoons, and La Niña conditions. Guinayangan also experiences drought-like conditions and unpredictable onset of the rainy season.
- Operations-wise, one of the foremost components of the Guinayangan CSV are the farmer learning groups that conduct participatory action research to test and learn about CSA practices. In the case of the Guinayangan CSV, there are already 17 farmer learning groups, composed of 300 farmers that are engaged in learning about specific climate-smart practices, including agroforestry, coastal agriculture, and confined livestock raising, among others.
- The second component of the Guinayangan CSV is composed of the learning sites or impact areas where on-site knowledge-sharing is facilitated. A geographic area can be considered an impact area if it exhibits the following key features: 1.) Climate-resilient agriculture or CSA technologies and practices; 2.) a number of CSA practitioners in the area; 3.) on-site knowledge-sharing; and 4.) local knowledge resource. Guinayangan features seven (7) impact areas for CSA, an example of which is the low external input pig production learning site located in Barangay CapuluanTulon and the low external input rice production systems in Barangay Danlagan Central.
- On-site knowledge sharing is the third component of the Guinayangan CSV The CSV, as a place where people can go to learn about CSA, should facilitate sharing of knowledge among farmers. Since 2015, IIRR has conducted farmer-to-farmer sharing and on-site scaling events, such as trainings and roving workshops.
- Another component the CSV is the community support systems. The purpose of establishing support systems is for farmers to have easy access to CSA options.

Social learning is an important part in community support systems, and this is done by facilitating farmer learning groups and participatory action research, developing impact areas, facilitating on-site learning, developing community innovations or adaptation fund, providing support to local government programming, and conducting scaling up events both on-site and off-site.

- Setting up sustainability mechanisms is also a key component of CSVs. In Guinayangan, this manifests in local government plans for the agriculture sector and it is in these planning platforms that designing agricultural interventions comes in and local governments allocate budget. Other sustainability mechanisms in the Guinayangan CSV include LGU investment in CSA demo site, support of national government agencies such as the DA to the LGU, building the capacities of extension service providers, and linking with the private sector and other government agencies.
- The next key component of CSVs entails organizing scaling up events. Guinayangan CSV employed three major scaling up events to promote CSA, which are off-site events (e.g., conferences, fora, discussions, and meetings), on-site events (e.g. roving workshops, training, and visits), and media coverage. In Guinayangan, there is an ongoing municipality-to-municipality scaling, wherein neighboring municipalities regularly share information through farmer groups, the DA's AMIA program, and non-governmental organizations (NGOs).
- The last component of CSVs is knowledge generation on CSA. There is much focus on knowledge generation because CSVs were initially conceptualized from a research perspective.



Attachment 9

Evaluation form

STEP 1 Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Determine appropriate analysis framework and methods for their respective communities; and					
2. Demonstrate skills in using data gathering tools and methods such as PRA and focus group discussion.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

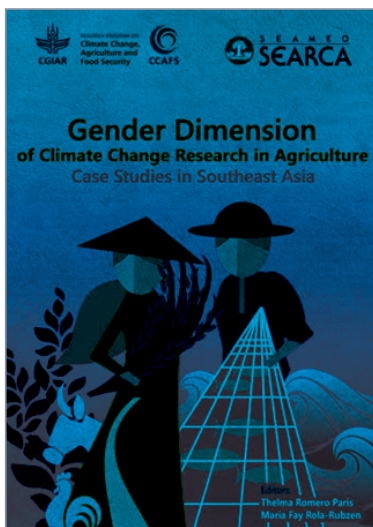
- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

Education Support Materials

(Click links to download materials)



<https://drive.google.com/file/d/1MCwcNYqLJRBJKd2h-dFiQ-nUhQS9MKUx/view?usp=sharing>



<http://www.fao.org/3/i3385e/i3385e.pdf>

Supporting women farmers in a changing climate: five policy lessons.

<https://cgspace.cgiar.org/bitstream/handle/10568/68533/>

Gender and Inclusion Toolbox.

<https://ccafs.cgiar.org/gender-and-inclusion-toolbox#.XjkKeWgzblV>

Climate resilient agriculture: educational/training posters series

<https://cgspace.cgiar.org/handle/10568/71099>

CCAFS Climate Smart Villages project in South Asia: An Introduction (Video)

<https://cgspace.cgiar.org/handle/10568/75181>

Climate-Smart Villages: A community approach to sustainable agriculture (Video)

<https://cgspace.cgiar.org/handle/10568/75182>

Equity, empowerment and gender relations: A literature review of special relevance for climate-smart agriculture programming

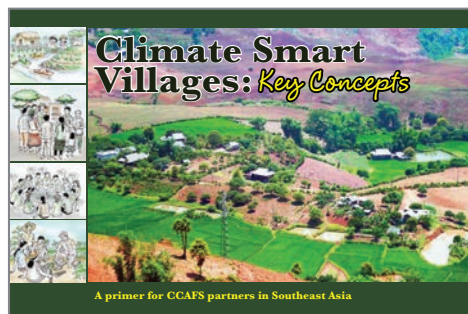
<https://cgspace.cgiar.org/handle/10568/98467>

Addressing gender-based impacts of climate change: A case study of Guinayangan, Philippines

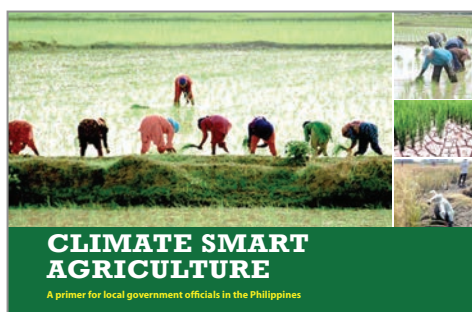
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<https://cgspace.cgiar.org/handle/10568/79434>



<https://hdl.handle.net/10568/100335>



<https://drive.google.com/file/d/1MCwcNYqLJRBjKd2h-dFiQ-nUhQS9MKUx/view?usp=sharing>



<https://ali-sea.org/aliseaonlinelibrary/sharpening-our-understanding-of-food-systems/>



https://drive.google.com/file/d/1TbXvjRkcuy_RsS85FR4rRuD2bQoLf8c/view?usp=sharing

Climate-Smart Agriculture in Asia: Beyond pilot evaluations and models (Workshop Proceedings)

<https://cgspace.cgiar.org/handle/10568/90537>

Progressing towards climate resilient agriculture: top ten success stories from CCAFS in South Asia

<https://cgspace.cgiar.org/handle/10568/83477>

FAO Training Manual

<https://www.fao.org/3/ca2189en/ca2189en.pdf>

Climate-Smart Village AR4D Approach: Synthesis of lessons learned

<https://cgspace.cgiar.org/handle/10568/100263>

Implementation of the Climate-Smart village approach

<https://cgspace.cgiar.org/handle/10568/100238>

The climate-smart village approach: framework of an integrative strategy for scaling up adaptation options in agriculture

<https://cgspace.cgiar.org/handle/10568/90727>

Building Climate-Smart Villages: Five approaches for helping farmers adapt to climate change

<https://cgspace.cgiar.org/handle/10568/89884>

Does climate-smart village approach influence gender equality in farming households? A case of two contrasting ecologies in India

<https://cgspace.cgiar.org/handle/10568/100291>

Climate-Smart Villages: A Community Approach to Climate Resilient Agriculture and Sustainable Livelihoods

<https://cgspace.cgiar.org/handle/10568/90482>

Climate-Smart Villages: the future of farming

<https://cgspace.cgiar.org/handle/10568/93371>

The Promotion of Climate-Smart Villages to Support Community-Based Adaptation Programming in Myanmar

<https://cgspace.cgiar.org/handle/10568/83372>

Building Capacities for Scaling-Up Climate-Smart Village in Nepal: A training manual

<https://cgspace.cgiar.org/handle/10568/102247>

STEP 2. Session Attachments



Attachment 1

Tools and Experiences in Developing Adaptation and Mitigation Initiative in Agri-Fisheries (AMIA) Villages

Mr. James D. Leyte, Senior Research Associate and Agriculture Systems and Landscape Specialist

The International Center for Tropical Agriculture (CIAT) Philippines
Workshop on Establishing Climate-Smart Villages in the ASEAN Region
to Improve Food Security and Resiliency in Local Communities
July 9, 2019

Presentation highlights

- CIAT adopts a four-step process in building climate-resilient communities. The first step involves understanding what is happening to the community and what could potentially happen in the future. This is followed by knowing the available options, which entails understanding the potential gains and losses in each option, for instance in identifying crops with the greatest gains and least losses based on a future scenario. The third step in the process is the implementation stage, where action plans toward mitigating and addressing climate change impacts are carried out. The last step in building climate-resilient communities involve monitoring outcomes, which will help determine which sustainable strategies can be used or developed to encourage farmers to adopt CSA strategies.
- The tools that can be used during the first step in the process include participatory geographic information system (GIS), crop suitability analysis, Terra-I, and climate risk vulnerability assessment (CRVA). CRVA is used for targeting, which involves identifying the nature and extent of climate change impacts and variability over a large geographic area. It also facilitates the prioritization of CRA options or packages of interventions for adaptation based on exposure, sensitivity, and needs for adaptive capacity in vulnerable areas identified. Meanwhile, crop suitability analysis provides an overview of the impact of climate change on different locations. It helps identify when and where are the areas that need to cope with, adjust to, or transform to adapt to climatic changes.
- An example of crop suitability analysis is the impact gradient map CIAT devised for coffee based on projections into the 2050s in Africa. Using this map, areas that need to cope (incremental adaptation), adjust (systemic adaptation), and transform (transformational adaptation) were identified. Meanwhile, in the Philippines, CIAT

adopted a climate risk vulnerability framework that consists of sensitivity, hazard, and adaptive capacity indices.

- For step 2 (knowing the available options), the tools used by CIAT include ecosystem services from agricultural landscapes, land use planning and trade-off, CSA investment prioritization, cost-benefit analysis (CBA) for CSA, and CSA profile. In the case of the Philippines, CIAT adopted CSA investment prioritization, CSA profile, and CBA for CSA.
- CSA investment prioritization is a framework composed of processes and tools that helps identify promising climate-resilient practices for priority investments by the government and private sectors. CIAT's framework for CSA investment prioritization consists of four phases, which are as follows: initial assessment of CSA options (Phase 1); first workshop on identification of top CSA options (Phase 2); calculation of costs and benefits of top CSA options (Phase 3); and second workshop on portfolio development (Phase 4).
- The country CSA profile provides an overview of the agricultural challenges and how CRA can be employed to adapt to and mitigate climate change. Lastly, information on financial and environmental gains and losses over conventional and climate-resilient practices can be obtained from assessment tools such as CBA.
- In step 3 (draw a plan), the tools that can be used are the following: 1) climate-smart value chains; 2) CSA implementer; 3) climate-smart agricultural plan; 4) climate information services; and 5) scaling CSA through value chains.
- Climate information services is an advisory mechanism wherein climate knowledge and information about what could happen in a season and what practices can be utilized to maximize benefits or mitigate potential losses are generated, translated, transferred, and used. On the other hand, scaling involves using value chains as platforms for wide-scale adaptation of climate-resilient practices through agricultural innovations.
- For step 4 (monitoring of outcomes), Terra-i can be used for real-time monitoring of vegetation loss to support immediate response by government and conservation organizations. In Indonesia, Terra-i has been piloted for eco-labeling and certification to attest that the coffee sold in the market is not contributing to deforestation. Meanwhile, the 5Q approach can be used in monitoring whether farmers are adopting the technology or not using a feedback mechanism. It employs five questions asked at a time at different time periods.
- The efforts done by CIAT in the Philippines with regard to CSA has resulted in project outputs being used by the national government in its development and investment plans. These have also demonstrated the usefulness of CRA and have been used in the overall initiatives of the Department of Agriculture as regards climate change adaptation.



Attachment 2

Participatory Tools in Identifying Community Vulnerability and Risks

Ms. Magnolia M. Rosimo, Program Manager, Learning Community Program, IIRR
Workshop on Establishing Climate-Smart Villages in the ASEAN Region
to Improve Food Security and Resiliency in Local Communities
July 9, 2019

Presentation highlights

- Participatory Climate Vulnerability and Risk Assessment (PCVRA) is an assessment tool that combines the climate lens and participatory rural appraisal (PRA), with sustainable livelihood as the guiding framework in doing the assessment. The five elements of sustainable livelihood—human, natural, financial, social, and physical capital—were assessed to be at risk.
- PCVRA is guided by the principle of participatory rural appraisal and combines different approaches and methods that enable local people to share, enhance, and analyze their knowledge of life and conditions to plan and act. In terms of the process, it is at this stage that the community is involved in analyzing their risks and in developing plans to respond to the risks identified.
- There are five key principles that should be kept in mind in doing PCVRA, as follows:
 1. Empowerment is a very important element in climate change adaptation and the community should feel in control.
 2. Researchers should show respect to the community and not consider them merely as a source of information. This entails the reversal of roles between insiders and outsiders.
 3. Localization of tools is crucial in the PCVRA process and it is recommended that local materials should be used extensively and creatively.
 4. The process should also be inclusive, ensuring that all sectors are represented, especially the marginalized groups.
 5. The process should be enjoyable for the community.
- While the usual PRA is employed to generate information, PCVRA incorporates the climate change perspective. The tools used are community-friendly, since visual

and other learning aids are employed to encourage community participation and engagement for learning and decision-making action.

- One of the PRA tools used in PCVRA is community mapping, wherein members of the community map the available resources (such as the five capitals that are important to the community's livelihood) and the areas affected by specific climate hazards. Historical timeline is also used to identify the past significant events in the life of the community, including major disasters and socioeconomic, political, and cultural events and developments. This tool captures the positive and negative impacts of these events on the community, and the coping capacities and mechanisms of the community. It also captures the changes in landscapes and trends.
- Another tool used in PCVRA is the seasonal calendar with climate change perspective. This tool uses three sets of calendars representing timelines from 30 years ago, 10 years ago, and the current calendar. Key elements to measure are: amount of rainfall, temperature, frequency and strength/ force of typhoon. Meanwhile, the livelihood matrix incorporates the gender lens in determining the gender roles and the decision-makers for each livelihood activity. In addition to this, the 24-hour clock is also employed, wherein two sets of gender clocks represent normal conditions versus extreme climate-related events, such as typhoons and droughts.
- PCVRA was able to surface the manifestations of climate change in the community. Climate change-related concepts such as exposure, sensitivity, and adaptive capacity are easily grasped by the community through the PCVRA. Thus, PCVRA facilitates the understanding of the level of risks of the community's livelihood and capacity to adapt to manifestations of climate change.
- After data gathering and analysis, results of the assessment are validated with the participation of the community. Triangulation was also done using information from other sources, including secondary data and key informant interviews. After validation, further analysis is conducted together with community members to surface doable adaptation strategies to address the livelihood risks.
- PCVRA also facilitates community discussions and provides a venue for households and marginalized sectors to participate in planning, whose voice is usually left out.



Attachment 3

Participatory Tools in Nutrition Programming in CSV Development

Mr. Wilson John D. Barbon, Country Director, Myanmar Program, IIRR
Workshop on Establishing Climate-Smart Villages in the ASEAN Region
to Improve Food Security and Resiliency in Local Communities
July 9, 2019

Presentation highlights

- CSV program in Myanmar integrates nutrition and food security. The climate-smart, agriculture-based program in Myanmar is being implemented in four villages, which represents different agro-ecological contexts, namely, the central dry zone, the delta zones, and upland/hilly zones.
- The research themes being worked on in these climate-smart villages are as follows:
 - What are the ways to optimize CSA and community-based adaptation (CBA) processes in four different agro-ecological and socio-cultural settings in Myanmar?
 - What mechanisms and social learning process can be adopted in Myanmar to scale-out CBA and CSA?
 - How are current mechanisms and programs of government, academia, and civil society serve as pathways toward scaling-out CBA and CSA?
- A comprehensive baseline study was conducted at the onset of the program, wherein the nutrition and food security aspects are integrated. Household surveys, participatory vulnerability analysis, and validation meetings were the methodologies employed in the conduct of the baseline study. Out of the 11 areas of analysis included in the baseline study, three are particularly related to nutrition and food security, namely, Household Food Insecurity and Access Scores (HFIAS), Household Diet Diversity Scores (HDDS), and Knowledge, Attitude, and Practices (KAP) assessment.
- The first tool used in the baseline study, the Household Food Insecurity and Access Scores (HFIAS), was developed by the United States Agency for International Development's (USAID) Food and Nutrition Technical Assistance (FANTA). HFIAS is a qualitative method of monitoring and tracking food insecurity. It is essentially a perception survey that looks at uncertainty and anxiety of households towards food supply, as well as at insufficiency of food quality and food intake. The higher the score obtained by the household, the more food insecurity the household experienced.
- Another tool employed was the household diet diversity score (HDDS), which considers the number of different food groups consumed over a given reference

period, usually within the past 24 hours. Also developed by USAID FANTA, HDDS is based on the assumption that a more diversified diet would lead to more important nutrition outcomes. The HDDS is presented as number of food groups consumed out of the maximum 12 food groups included in the score. The higher the HDDS, the more diverse is the diet of the household.

- Lastly, a KAP assessment was conducted to evaluate the respondents' knowledge about food groups and sources of vitamin A, protein, and minerals; their attitudes towards vegetables, legumes, and food preparations; and their practices in cooking, food preparation, and hygiene.
- For the HFIAS, the most food insecure was the Sakta CSV, which is located in the upland zone, followed by Htee Pu CSV, which is located in the central dry zone. These two villages are located in a very vulnerable agro-ecosystem (mountainous, hilly and dryzone). For mountain regions, their isolation from the main trading centers limits their food supply to their own agricultural production only. On the other hand, food production and income from agriculture are limited during the long dry season in the dry zone. These are posing a challenge to accessing food for the households. The least food insecure households were found in the Masein CSV, which is located in the delta zone.
- In terms of the HDDS, all the villages except the Sakta CSV registered a lower than 6 HDDS. Most of the CSVs got an HDDS of six out of the highest possible score of 12 food groups. While this may be a good indication of a diverse diet, it is significant to note that the top food groups consumed are cereals, oils and fats, sweets, and vegetables, which does not reflect a balanced diet to provide nutrition to the households. Roots and tubers, milk, and other fruits were the least consumed food groups. Such information can be used in developing appropriate nutrition intervention and identifying which crops farmers can plant to address the issue.
- Based on the results of the baseline study, the following key nutrition and food security considerations were identified:
 - Diversification of production all year round contributes to diverse sources of food and income
 - Promotion of new food crops to reduce dependence on climate-sensitive crops.
 - Increase consumption of vegetables and fruits for vitamins, minerals, and micronutrients; and
 - Promotion of Water, Sanitation, and Hygiene (WASH) to reduce risk of gastrointestinal diseases that leads to malnutrition
- Meanwhile, the interventions the program identified for implementation in 2019 include developing nutrition education modules for nutrition education; nutrition education sessions; and diversifying homestead production.



Attachment 4

Approaches

Participatory Vulnerability Assessment (PVA)

PVA is an approach that combines various tools and methods that communities can use to generate and analyze information enabling them to identify options to address current climate change impacts and adaptation options. In practice, PVA outputs include but not limited to community profile (village history, current state of natural resources, land use, tenorial arrangements), livelihood profile, climate change perceptions and coping mechanisms (perceived climate change impacts, impact). Data gathering methods may include focus group discussion with PRA tools, key informant and group interviews and review of secondary data and climate-related documents.

Sample Village Assessment



Barangay Balinarin

Guinayangan, Quezon

A village level assessment of climate related risks and vulnerabilities

1. BACKGROUND

1.1. Climate change adaptation and food security (CCAFS)

Climate-smart agriculture (CSA) is an integrated approach that addresses the interlinked challenges of food security and climate change. Facilitating sustainable agricultural intensification in rural Philippines requires local investments in strategies that employ a three-fold approach that:

- increases productivity,
- protects the environment, and
- targets the poorest and most vulnerable members of the community.

This can be done through development interventions that focus on increasing the adaptive capabilities of smallholder farmers through CSA. Because we know

that greater adoption of CSA by smallholders happens when interventions are promoted and undertaken at municipality level, IIRR partners with the local government unit (LGU) of Guinayangan. The partnership is supported by CCAFS in a project that is expected to enable farmers to increase productivity using environmentally friendly regenerative approaches. The project explores the effectiveness of municipality-level actions using an ecosystems-based and ridge-to-reef approach to facilitate greater adoption of climate-smart agricultural practices among smallholder farmers.

Participatory vulnerability assessments (PVAs) were undertaken in 11 villages to achieve a local understanding of the climate-related risks and vulnerabilities that enable them to arrive at viable options for addressing impacts. The PVAs were designed to generate knowledge of these risks, its gender-differentiated impacts (especially as they affect livelihoods), the communities' current coping mechanisms, and their current knowledge of CSA.

PVAs can be used to systematically generate knowledge on how development interventions in Guinayangan can facilitate community-based adaptation. Thus, they build on community perceptions and utilize participatory approaches for generating information. Although the results of the PVAs do not necessarily offer solutions to rural problems, they can be used as tools to generate community level discussions that result in community-based adaptation strategies.

The methodologies used and the lessons learned from this experience will be shared in a separate publication.

2. PVA Study

The PVA study was conducted in the 11 barangays of Guinayangan to help the community achieve a better understanding of the conditions and factors that affect their vulnerability to climate change impacts. Once the community receives this information, it will be in a better position to increase its resilience and react to disasters.

Specifically the PVA has the following objectives:

1. In collaboration with the community, establish the livelihood conditions in the village using the 5 capitals.
2. Determine the community's perception on changes in climate, its impacts on their livelihoods and other factors/drivers.
3. Determine and establish the level of exposure of smallholder farmers to climate risks in the 11 villages where IIRR works.
4. Establish an in-depth analysis of the climate-change-related risks faced by farmers, existing coping mechanisms, possible adaptation measures, and perceived interventions for increasing their adaptive capacities.

3. Methodology

The PVA study was conducted at the barangay hall on November 3–November 2014. The meeting was attended by a total of 14 participants (10 men, 4 women), representing the barangay council members and some coconut farmers.

A focused group discussion (FGD) was held using participatory appraisal (PRA) tools such as community mapping, a seasonal calendar, a timeline, and a livelihood assets matrix. These tools are described in Annex 1.

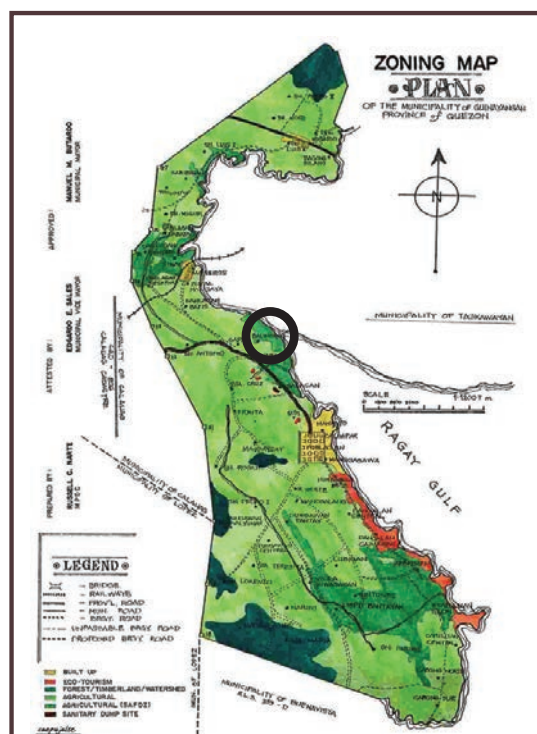
Additional data and information for this report was also gathered through a key informant interview (KII) to barangay officials. Secondary data were further gathered from the Municipal Planning and Development Office (MPDO), the Office of the Municipal Agriculture (OMA), and the Department of Social Welfare and Development (DSWD). Information from activity reports of monitoring visits, documentation of a stand-up meeting, and project reports augmented needed data and information.

The study was limited to agriculture as main source of livelihood of the community.

4. Introduction

4.1. Barangay Profile

Barangay Balinarin is a lowland village with a land area of 365 hectares with 30 hectares devoted to rice farming and 300 hectares for coconut production. Most residents own the land they live on; only a few (about 2%) are tenants.



Basic Information

Topography: Lowland

Location: 4 km south east of municipal town center

Area: 365 hectares

Boundaries: Gapas (South), Hinabaan (North), San Roque (S), Ragay Gulf (E)

Population (2014): 341 individuals (184 male, 157 female), 90 households

Community infrastructure: 1 elementary school, 1 health center, 1 day care center, basketball court, multipurpose hall, potable water supply,

Community-based organizations: 4H (youth), RIC (women), KALIPI (women), Farmers' Association (mixed male & female), few 4Ps

Unique infrastructure/features: The barangay is home to the Busay River that features a barangay-managed water resort

Most of the population are daily wage earners working either for the government or for private organizations.

4.2. Village History

Until the 1940s, when agriculture was introduced, the barangay was fully covered by grasslands and forest areas. Since then, agriculture has become the economic mainstay of most people, yet it is also responsible for environmental concerns.

In the 1950s, a place called Sitio Gapas was elevated to a barangay status and named Balinarin. Since then, administrative efforts have been made to make life more convenient for the community and the barangay is now able to control its own funds for development projects and activities. In 1952, the community became open for product trading when the Farm to Market Road Project was implemented. Various improvement in transportation and infrastructure have been made regularly, and in 1997 a community day care center was constructed to provide basic education.

In the 1980s, electricity services reached the barangay, significantly improving livelihoods. People now had greater convenience to work as well as access to basic information through television and radio. While the economic status of most people has improved, the barangay's population growth rate has ebbed as a result of busier lifestyles.

In the 1960s, the number of coconut trees began to increase, and today many people identify coconut farming as their key source of income.

Between 1984 and 1986, the clash between the New People's Army (NPA) and Armed Forces of the Philippines caused fear in the community, causing many individuals that to migrate to safer locations. Some people who refused to leave their place served as civilian volunteers to resist the presence of the rebels.

4.3. Land use and tenurial arrangements

Barangay Balinarin is a lowland village. Most residents own the land they live on; only a few (about 2%) are tenants. Many of the residents are daily wage earners working either for the government or for private organizations within and outside the municipality.

With this land ownership, agricultural production is dependent on farm labor. For coconut, there are 4 sharing arrangement. These are:

- first, 60% of the harvest goes to landowner and 40% to the laborer (evenly divided by the number of laborers);
- second, the tercio system in which 1/3 of the harvest goes to the laborer or partial division of harvest;

- third, the 90/10 share in which 90% goes to the tenant and 10% to the landowner; and
- the 50/50 system in which the harvest is divided evenly among the land owner and tenant.

Meanwhile for rice, average daily wage is Php 200. But for rice lands with tenants, more often, 95% of the harvest goes to the tenant while the remaining 5% is given to the landowner.

5. Livelihood Profile

5.1. Coconut and rice are the main crop in Barangay Balinarin. Several are into vegetable farming and fish pond culturing. Coconut production provides the largest share of income to many farm-based families. There are 14 activities performed here as identified by the locals. Men are more involved in the coconut production that requires physical strength such as harvesting, collecting, removal of husk and preparation of fire. Women share in the labor for the rest of the copra production activities such as shelling, yield counting. Usually, coconut production begins to ebb in May. The month of August serves as the lean month. Production is normal throughout most of the rest of the year.

5.2. Rice farming is a subsistence farming system in barangay Balinarin. The labor requirements for rice production usually involve men. Land preparation, threshing, spraying, fertilizing, weeding are mostly performed by men. Transplanting, harvesting, drying, "bayo" are evenly performed by both men and women. In preparing the land, a farmer usually spends PHP 160/hour of tractor use. The farmers also harrow their land for a week; soak their land for 24 hours; germinate their seeds for 2 days; plot their land for 15 days; weed their land for 3 days after transplanting; and apply urea fertilizer at the 35th day. Additionally, postharvest activity like threshing costs 2 PHP/kg of brown rice. Table 5 shows a more detailed list of activities being shared and performed by both genders as linked to rice farming. Rice is grown twice a year. The first crop is harvested by June and second by December. Because farms in the area are rainfed, the farmers try to ensure that their planting time suits these seasonal conditions. Usually, May is the lean month because it is often reserved for land conditioning activities.

5.3. Banana farming is also visible in this community. Bananas are usually planted between April and July when moderate weather conditions prevail. These conditions are necessary to avoid damaging the banana shoots. Unspecified months are the normal harvest periods of this commodity.

5.4. Last in the list of typical livelihoods of this barangay is the fishpond culturing. Villagers often have one

economic season for this system that eventually begins by December. Taking 3-4 months of growing period, marketable fish sizes will be harvested by April or May. Culturing fish is only performed when there is high precipitation rate. Usually, chanos-chanos (milkfish, locally referred to as bangus) is the most common fish species grown in the area. Different kinds of activities are involved in this system for successful operations. Men usually work in the ponds where they are mostly involved in pond preparation and maintenance. Women help in releasing fingerlings in the pond and harvesting. Usually, 20% of the harvest goes to the pond owner and 80% to the lessee. Aquaculture is very laborious in terms of water maintenance, especially when technology is not yet very sophisticated, so men supply most of the required workforce. The common pesticide used in this system is tisid, an organic procedure that removes undesirable foreign biota that compete for the available food in the pond.

- 5.5. In terms of pests and diseases, coconut production is threatened by as a number of trees decompose throughout the year due to infestation of micro-organisms that gradually damage every part of the tree until it completely dies. Moreover, termites occur in high numbers from January until April and decline thereafter until December. For rice, tungro, stem borer, and black bug affects rice crop and occur during the first quarter of the year until they reach their peak season during the second until the last quarter of the year.
- 5.6. Water supply is often low from January until August and high for the rest of the year. Surface water and groundwater are abundant in the area but these water systems will only recharge when rainfall is heavy.
- 5.7. In terms of expenses and income, many residents in barangay Balinarin is largely based on copra production. Other farming activities are conducted on a small-scale basis for food self-sufficiency. High cash inflows of a typical farmer in Balinarin take place from January to February, from April to May, from July to August, and from November to December. The months not mentioned are typified by low cash inflows. Expenses of a farmer in this community are high in March, June, July, November, and December because of cultural events and school expenses.

6. Climate Change Perceptions and Coping Mechanisms

6.1. Perceived Climate Patterns

- 6.1.1. The most recent data shows that the wet season now starts in May and ends in November. This

period coincides with typhoon season. According to participants, earlier climate patterns were similar to the current weather, but the climate these days is more unpredictable and extreme than ever. Summers used to be a little cooler than they are today. Comparing sets of climate patterns over the past years, wet seasons decades ago were similar to recent conditions, but they lasted a month longer. The dry season, both then and now, runs from January to February.

- 6.1.2. In years past, typhoons were common events. In 1995, 2006, and 2014, three typhoons inflicted massive damage to the infrastructure and livelihoods in the barangay. Typhoon Rosing was the strongest in terms of precipitation rate, while Glenda was the most deadly in terms of wind speed. Both of these typhoons killed numerous coconut trees, affecting the production and incomes of many farmers.

6.2. Impact

- 6.2.1. Another deadly climatic event was the El Niño phenomenon in 2014, which badly affected farming systems of the community. Many farmlands were totally parched and several wells went dry. People were able to recover by saving and maximizing the remaining quantities of water, but fruits and other crop commodities did not achieve sufficient growth for marketing.
- 6.2.2. Coconut farmers were the most impacted, and many were obliged to seek work as helpers, construction workers, and laborers to support their families. Subsistence farming also became an option for some farmers in their efforts to cope with the calamities. Others relocated to nearby areas to harness water for their families, while still others took up broomstick and charcoal production or fishing to mitigate the impacts of the climatic disasters. Meanwhile, damaged infrastructure was quickly repaired by everyone pitching in together.
- 6.2.3. Past typhoons damaged some houses situated near the Ragay reef when giant waves dragged everything they reached back into the sea. Coastal erosion was extreme – even the perimeter dikes were not able to withstand the strong tidal force coming from the sea. Some animals were drowned and killed as owners were not able to completely secure them. General infrastructure such as roads, barangay halls, and utility poles were also damaged. Accessibility became inconvenient because of blocked passages, council meetings were canceled, and communications and electricity services were interrupted.
- 6.2.4. Damages were repaired through bayanihan, while many people relied on backyard farming to at least address the threat of hunger after the destructive events. Others procured solar-powered devices

and gas-powered lamps to deal with the burden of widespread blackout.

- 6.2.5. Production deficits were also experienced because of the large-scale damage to coconut plantations and ricefields. Some trees were either uprooted or heavily damaged.
- 6.2.6. In contrast, available water resources in the barangay exceeded the recharge rate, making them sufficient for public, agricultural and private use. Some water sources became turbid but people were able to prime them up to make the water clear again.
- 6.2.7. Many people caught colds, fevers, and other common diseases due to the sudden change in environmental conditions, while additional working loads such as repairing of damage and land clearing were completed by farmers to be able to get back to their normal lives.
- 6.2.8. When water supply became deficient due to below average precipitation rates, the ecosystem and agriculture of barangay Balinarin experienced substantial damages that were reflected by animal migration and average farm yields. In the past situations, pond farming was forced to stop because of unstable water supply. Several coconut plantations were hit, affecting overall copra production, while natural water systems were either producing low discharge or totally parched up. People responded by securing every water droplet that they could harness from their water banks or by collecting water supply from nearby areas.
- 6.2.9. Power interruption was also experienced during hot weather condition when the electric company, QUEZELCO, imposed a maintenance shutdown to avoid overheating their cable wires. In contrast, regardless of the occasional brownouts, many people still declared that their electric bills increased as a result of increasing dependency on electric-powered devices to avoid the undesirable weather conditions.

7. FINDINGS

- 7.1. Participants defined the conditions of vulnerable households in their community with the following characteristics:
- Very sick individuals/incapacitated persons
 - No other sources of income
 - Widows/single parents
 - Large family size
- 7.2. The majority of farmers own their land and most of the constituents have regular jobs and sources of income.
- 7.3. Typhoons and prolonged dry seasons have been identified as climate-related hazards that affect the barangay. However, the participants do not see themselves as vulnerable as they can easily bounce back given their regular sources of income from their day jobs.
- 7.4. The community has sufficient water sources. Access to these sources is the issue.
- 7.5. Several people of barangay Balinarin expect that an institution will be put in place that can provide them with an early warning system so that they can gather information related to weather to secure their lives and assets. They also anticipate a seminar on effective farm management with new technologies to upgrade the farming systems in their barangay. In addition, the issue of an irrigation system has been consistently raised by the local authorities of this community to various organizations including the LGU, but a response has not been forthcoming.
- 7.6. As a result of their experiences with both typhoons and drought, barangay residents today are more vigilant concerning the rapid changes that occur in their area. They are now able to prepare themselves for incoming storms or droughts by securing their assets and preparing their emergency kits. News updates on television and radio are the most reliable sources of information as no local weather station is yet available.



Situational Analysis and Needs Assessments

The situation analysis helps clarify the context at various levels. It is a broad and comprehensive review of information related to climate change, agriculture, and food security (Pham TS, Hieu DT, Hoan LK, Quyen LN, San LV, Ferrer AJ, Yen BT, and Sebastian LS. 2015). Meanwhile, needs assessment serve as basis for decision making.

The study done by Pham TS, et al (2015) generated information on the following:

- Geographical location
- Demographics
- Local climatic information
- Natural resource utilization (land use, water resources, mining)
- Production and livelihood systems
- Food security status and trends
- Hazards and vulnerability
- Mitigation Measures
- Climate change perception
- Climate change impacts
- Institutional landscape and governance
- Current and past natural resource management initiatives
- Organizational landscape
- Information Network
- Social and gender differentiation
- Health/Nutrition profiles and other livelihood outcomes

Methods used include focus group discussion, key informant interviews, and collection and assessment of various reports and records available.

Access full report here:

<https://ccafs.cgiar.org/publications/situation-analysis-and-needs-assessment-report-ma-village-and-yan-bai-province-vietnam#.XjpAA2gzblV>

Gender and Social Analysis

Gender and social analysis employs wide-range of tools and methods to characterize gender and social differences in communities. It aids in designing research and programs to achieve multiple outcomes.

Participatory Rural Appraisal Tools

Participatory Rural Appraisal is a methodology that facilitates analysis of community situation and problems that is undertaken by the community members themselves. PRA tools are useful for gathering data on specific area, issue or sector.

The following PRA tools were used by IIRR in the Philippines to generate the different information and data. Depending on sector and gender representation, sectoral and gender-disaggregated groupings were conducted in selected PRA tools.

1. Community mapping identifies the community's boundaries, road networks, river and springs, landmarks and infrastructure and houses.
2. Historical timeline outlines the significant events in the community such as major disaster, socio-economic, political and cultural events and development, changes on landscapes; good and negative impacts and coping capacities and mechanisms. It also shows the trends, frequency and intensity of events.
3. Seasonal calendar shows the seasonality of climate patterns annually, different livelihood activities in the community, water and food availability, pest and diseases on crops and livestock, health issues among children and adult, social and cultural activities, income and expenses. The tool also used to identify the changes in climate patterns overtime (10, 20 and 30 years ago).
4. Matrix of livelihood activities lists the various work performed and identifies whether each activity is dominantly done by men or women. It also shows who will be most likely affected if a climate hazard may impact the livelihood.
5. 24-hour clock determines the time and allocation of productive and reproductive activities done by men and women over a course of a day. It also determines whether they are changes and adjustment in time, allocation and roles if there are climate hazard or extreme events.
6. Problem tree identifies the three major (3) problems and challenges on livelihood and their different factors and reasons. Information and data gathered were rooted mainly on developmental issues and problems which are worsen by climate hazards and changes in climate patterns.
7. Matrix of livelihood assets lists the different assets and resources needed. It also identifies how climate change and climate hazards affects them; what are the needed solutions and capacities to enhance that will prevent or mitigate future impacts.
8. Perceptions on vulnerability define the trait, characteristics or criteria of people who are considered vulnerable to climate hazard.
9. Mapping of vulnerable sectors identifies and lists who are the vulnerable families, individuals and where are they located.



Attachment 5

























Outputs of community workshop conducted by IIRR in Barangay Balinarin, Guinayangan, Quezon, Philippines

1. Timeline

Year	Events	Impacts	Coping Mechanisms	Additional Response
1984–86	Insurgency	Migration of population to safer places due to fear	<ul style="list-style-type: none"> • Civilian volunteer • Cooperation with the military 	-
1940s	Forested and grassland areas	-	-	-
1950s	Administrative reformation from sitio Gapas to barangay Balinarin	Community fund	-	-
1952	Earth road	<ul style="list-style-type: none"> • Improvement of transportation networks • Faster trading process 	-	-
1960s	Domination of coconut plantation	Economic development	-	-
1977	Day care center	Improvement in children learning	-	-
1980s	Electricity services	<ul style="list-style-type: none"> • Reduction of population • Additional expense 	-	-
1985	Road widening	-	-	-
1973 (17 March)	Earthquake	<ul style="list-style-type: none"> • Broken roadways • Fallen nuts 	Fertilizer application (Provided by PCA in the 1990s)	-
1995	Typhoon Rosing (Category 5)	<ul style="list-style-type: none"> • Damage of farms • Damage of general infrastructure • Damaged ponds 	<ul style="list-style-type: none"> • Relocation to other barangays • Repair of minor damages 	<ul style="list-style-type: none"> • Residence in a durable shelter • Preparation of emergency food • Listen to news updates
1997	El Niño/drought (7 months)	<ul style="list-style-type: none"> • Damaged crops • Poor farming environment • Low coconut production • Scarcity of water supply 	<ul style="list-style-type: none"> • Development of Hinabaan River into a resort • Water collected from high discharge springs 	Spring development
2006	Typhoon Milenyo (Category 4)	Same with the 1995 event	Same with the 1995 event	Same with the 1995 event
2014	Typhoon Glenda (Category 4)	Same with the 1995 event	Same with the 1995 event	Same with the 1995 event
2014	El Niño/drought (4 months)	Same with the 1997 event	Same with the 1997 event	Same with the 1997 event

2. Seasonal Calendar

CLIMATE / WEATHER

SUBJECT	MONTH											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Recent												
Decades Ago												

Legend:

 Wet season with occasional storms

 Moderate climate

 Warm

 Summer / very hot

LIVELIHOOD CROPS

SUBJECT	MONTH											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Livelihood Assets												
Coconut farm												
Rice farm (C1, BS1, G4 and miracle)												
Banana plantation												
Fishpond												
Water Availability												
Fishpond												
Culture												
Event												

Legend:

Low

High

Planting and growing

Normal

No Activity

Harvesting / high

LIVELIHOOD CROPS

SUBJECT	MONTH											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Plant pests and diseases												
Unusual tree decomposition												
Termites												
Stem borer, black bag, tungro												
Human health issues												
Chicken pox												
Rheumatism												
Income												
Status												
Expenses												
Status												

Legend:

Low

High

Planting and growing

Normal

No Activity

Harvesting / high







3. Livelihood Matrix

LIVELIHOOD ASSETS	IMPACTS	COPING MECHANISMS
PHYSICAL		
Fishpond	A) Overflowing B) Absent	A) Discharged
Rice farm	A) Damaged fields B) Dried lands	-
Coconut farm	A) Low income A) Damaged trees	A) Maximized remaining economic parts
Infrastructure (houses, roads, electric and power utility)	A) Blocked roadways A) Damaged houses A) Power interruption A) Signal Interruption B) High current bill B) Brownout	A) Bayanihan A) Utilized a generator A) Emergency kits A) Fixed damaged structures B) Energy saving B) Switched to LED bulbs
NATURAL		
Dug well	A) Overflowing A) High turbidity B) Low supply	A) Well priming B) Mineral water B) PAG-IBIG fund
Hinabaan River	A) Overflowing A) Damaged barangay wall B) Low river flow and height	A) Harnessed water from dug wells
Spring	A) Damage on hose connection A) Soiled resource (due to erosion) B) Parched up or low discharge	A) Repaired the damages
Land/earth	A) Soil erosion A) Landslide	
SOCIAL		
Community Organizations (Kalipi, 4P's, 4K, RIC, CFA, Kalahi and SC)		
HUMAN		
Children	A) School absence	A) Assistance in doing household chores
Male farmer	A) Shorter working hours	-
Female farmer	A) More household activities	A) Went to nearby areas to wash clothes
Senior citizen	A) Common diseases and rheumatism	A) Self-medication
FINANCIAL		
MFi, CARD, and lending organizations	A) Debtors could not pay A) Lending groups sent some fee collector	

Legend: A= Typhoon; B= Drought

4. Gender and Livelihood Analysis

Table 1. Comparison of activities performed by both genders under fish farming

FISH FARMING	
ACTIVITY	PIE CHART
1. Land preparation	
2. Pond watering	
3. Fingerlings selection	
4. Throwing in of fingerlings	
5. Pond maintenance	
6. Harvesting	

SIGNIFICANT PERSONS















Owner (pond)

Caretaker

Capitalist

LEGEND:  Male  Female

Table 2. Comparison of activities performed by both genders under coconut farming

COCONUT FARMING	
ACTIVITY	PIE CHART
1. Nuts poling/picking (kawit)	
2. Nuts collection	
3. Hila/parada	
4. Tapas	
5. Yield counting	
6. Mechanical shelling	
7. Kamada	
8. Fueling	
9. Hango	
10. Tigkal	
11. Pili/ tusta ulit ang hilaw)	
12. Product packing	
13. Imbasi	
14. Sulit	

SIGNIFICANT PERSONS

Owner (land) and Owner (transportation vessel)

Tenants

Laborer

Kasa (buyer)

LEGEND:
 Male
  Female

Table 3. Comparison of activities performed by both genders under rice farming

RICE FARMING	
ACTIVITY	PIE CHART
1. Land clearing/weeding	
2. Primary tillage operation	
3. Land soaking	
4. Seed germinating	
5. Secondary tillage operation	
6. Land leveling	
7. Furrowing	
8. Transplanting	
9. Spraying	
10. Weeding	
11. Fertilizing	
12. Harvesting (Gapas)	
13. Piling (Bigkis)	
14. Threshing	
15. Partehan	
16. Drying	
17. Bayo	

SIGNIFICANT PERSONS

Farmer/ Landowner

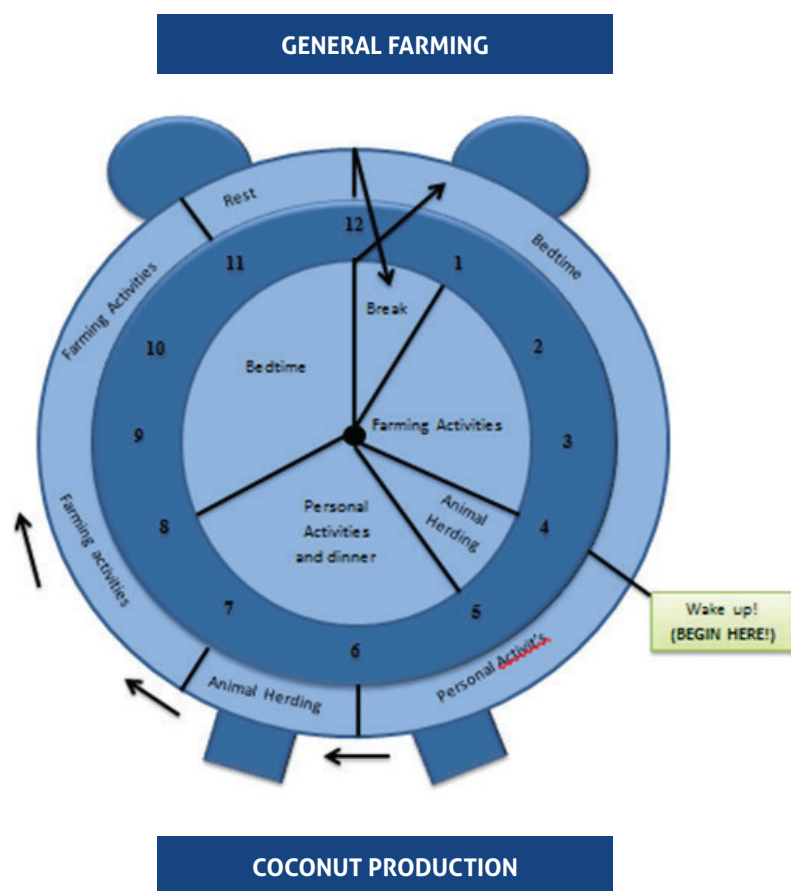
Farm laborer (magtatalok)

Rice mill owner

LEGEND:  Male  Female

5. Gender CLOCK Analysis

Figure 1. 24-hour clock of farmer activities in Barangay Balinarin



6. Community Mapping

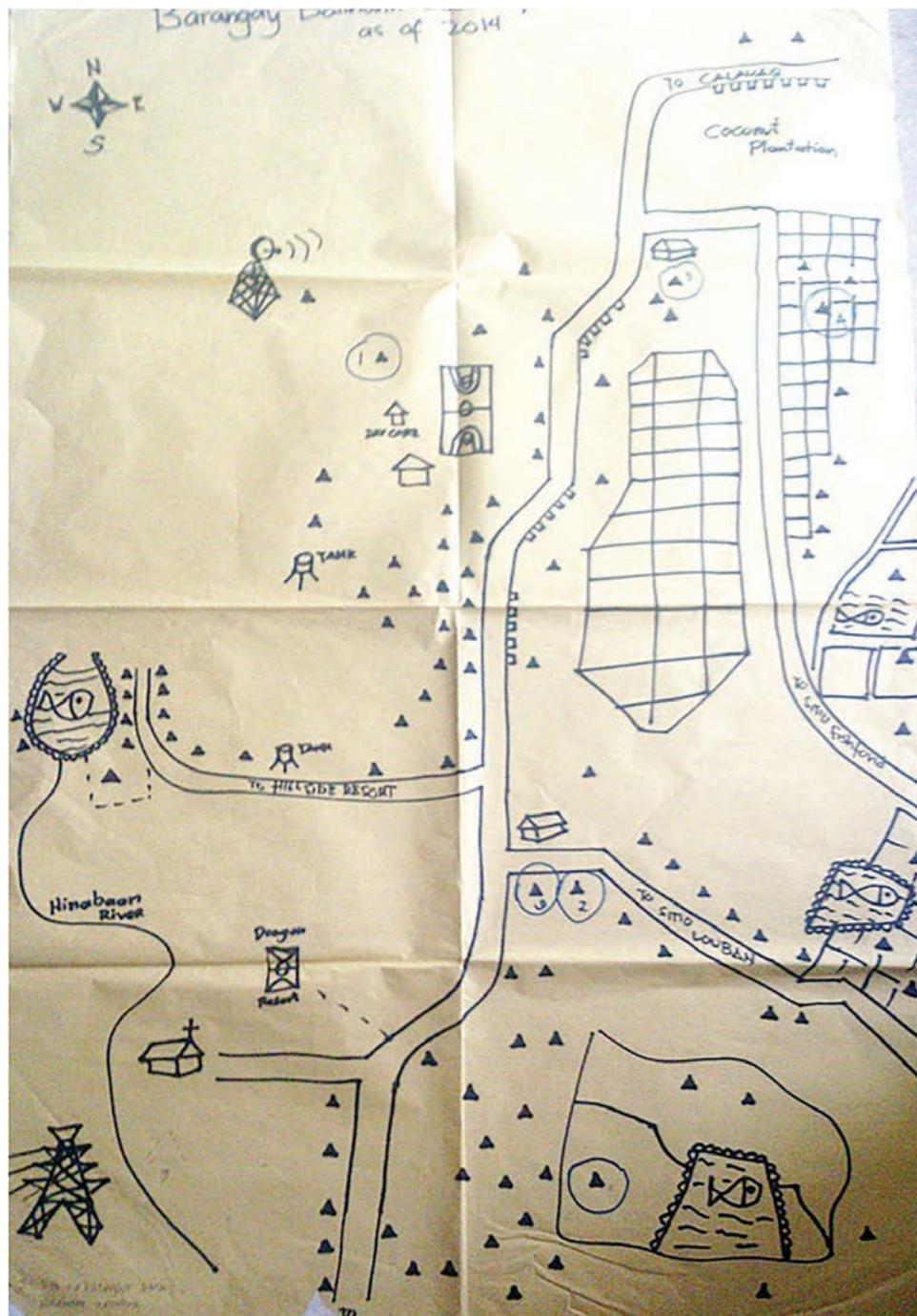


Figure 1. Community-generated map of Barangay Balinarin, Guinayangan, Quezon

Source: IIRR.2014. Barangay BalinarinGuinayangan, Quezon A village level assessment of climate related risks and vulnerabilities



Attachment 6

Sample Guide Questions

Context analysis

Understanding the context in any particular community – the socio-economic patterns of how people earn an income and obtain other resources – is useful in understanding the patterns of vulnerability to multiple risks, including climate risks. Some questions for understanding the context for climate change adaptation and mitigation are:

- What are the important environmental, economic, institutional and social patterns in the village? Do men and women have the same views on these?
- What were past climate conditions like, what are they like now, and what are future projections? Do men and women report seeing changes or impacts? What are women's and men's perceptions of these?
- What are the institutional support mechanisms for climate change adaptation or mitigation activities? What are the constraints?

Livelihood analysis

Livelihood analysis focuses on how individuals, households and groups of households make their living and the access of men and women to resources and services. It reveals the activities people undertake to meet their basic needs and generate income. Some questions include:

- How do people make their living? How do the livelihood systems of women and men, boys and girls compare? How do the livelihood systems of different socio-economic groups compare?
- What are the likely climate change impacts on current livelihood strategies? Are certain sectors or groups of people more or less vulnerable? Why? What are perceptions of women and men on these?
- How diversified are the livelihood activities of men and women? Describe the activities.
- What are the patterns for use and control of key resources? By gender? By age? By socioeconomic group? How will a changing climate affect the use of resources for men and women?
- What are the most important sources of income? Expenditures for each socio-economic group, including women and men? Tribal and indigenous groups?

Stakeholder analysis

Stakeholders are all the different people and institutions, who stand to gain or lose, given a particular activity. For every adaptation and mitigation activity proposed, the different stakeholders are identified, revealing where there is conflict or partnership. Key questions include:

- What adaptation activities do different men and women propose? For what?
- For each proposed adaptation or mitigation activity, who are the stakeholders? How big is their stake? What is their historical relationship to each other?
- Is there conflict between stakeholders? Is there partnership?
- How do different stakeholders perceive the risks associated with climate change? How do they perceive the benefits of mitigation and adaptation activities?
- How can short and long-term needs of different stakeholders be balanced?
- Will men and women benefit equally?
- Will men and women differentiated by wealth benefit equally?
- Is participation of women ensured? Is participation of marginal groups ensured? By whom?
- Is access to information ensured? By whom?

Source: Food and Agriculture Organization of the United Nations (FAO) and CGIAR Research Program on Climate Change, Agriculture And Food Security (CCAFS). 2013. Training Guide: Gender and Climate Change Research in Agriculture and Food Security for Rural Development.

Download guide here: <http://www.fao.org/3/i3385e/i3385e.pdf>



Attachment 7

Sample Baseline Study

Note: Content lifted from Village Baseline Study of Ma village Yen Binh district, Vietnam
Do TrongHieu, Le KhaiHoan, Le Viet San, Le Van Hai, Duong Minh Tuan, Luu Ngoc Quyen,
Pham Thi Sen, Alice Ferrer, and Bui Tan Yen

Abstract

Ma village, Vinh Kien commune, Yen Binh district, Yen Bai province has been selected to be one of Climate Smart Villages (CSVs) under the CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS) in Southeast Asia. The village baseline survey (VBS) of Ma village, was therefore conducted as part of the baseline effort. This VBS aimed to provide baseline information at the village level about some basic indicators of natural resource utilization, organizational landscapes, and information networks for weather and agricultural information, which can be compared across sites and monitored over time. The study was conducted using the method developed and provided by CCAFS. The study's findings show that Ma Village is rich and diverse in natural resources. There are three main resources of vital importance for the local people livelihoods, namely farmland, forest and water resources. However, improper exploitation and management have caused negative impacts on these resources. As mentioned by farmers, in the past, farmland of the village used to be very fertile, but has now become severely degraded due to overexploitation and improper management. Regarding forest resources: before 1980s, natural forests existed in large areas and consisted of valuable timber and wild animals. Today, much of the forest area has been converted to production forests or to food crop production land. Water resources, including lakes, rivers and streams have been severely polluted with pollutants from processing cassava, wood and also from animal husbandry and crop production. Degradation of water, farmland and forest resources are causing increasing challenges to agricultural production and also to other human activities. Results of farmer group discussions also demonstrate that there are 34 organizations operating in the village. Most of them are governmental. Very few are private or non-governmental organizations. The number of organizations involving in food security accounts for nearly 50%, the figure for those involving food crisis is 41.6% and in natural resources management is 25%. Those organizations working in food security and food crisis focus mainly on providing support (financial, seed and agricultural inputs) to local farmers to implement some production activities. Insufficient attention and input spent for sustainable development by these 34 organizations, especially those working in the area of natural resources management, could be one of the main reasons for the degradation and erosion of natural resources. There was no activity supporting Ma Village to develop production systems which can respond well to climate change. The study findings however show that local people are very flexible and

creative, especially in exploitation of information. Among media channels, television is the most popular. Nevertheless, organizations, in particular, extension networks, Farmers' Union, local authorities, etc., also have an important role in information dissemination. Exploitation of information from the internet and mobile phones has also been given attention, but mostly by young people only.

Access full report here:

<https://cgspace.cgiar.org/handle/10568/79890>



Attachment 8

Evaluation form

STEP 2 Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Determine appropriate analysis framework and methods for their respective communities; and					
2. Demonstrate skills in using data gathering tools and methods such as PRA and focus group discussion.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

Education Support Materials

(click links to download materials)

Climate-induced vulnerabilities Participatory assessment for My Loi village, Ky Son commune, Ky Anh district, Ha Tinh province <https://cgspace.cgiar.org/handle/10568/89634>

CCAFS baseline survey data and materials: <https://ccafs.cgiar.org/resources/baseline-surveys#village>

Situation Analysis and Needs Assessment Report for Ma Village and Yan Bai Province, Vietnam <https://cgspace.cgiar.org/handle/10568/72437>

Situation Analysis and Needs Assessment Report for Pailom Village, Savannakhet Province, Lao PDR <https://cgspace.cgiar.org/handle/10568/76329>

Organisational Baseline Study: Overview report for Tra Hat CSV, Vietnam (VN03) <https://cgspace.cgiar.org/handle/10568/80485>

Village Baseline Study – Site Analysis Report for My Loi, Ky Anh district, Ha Tinh province – Viet Nam <https://cgspace.cgiar.org/handle/10568/79896>

Village Baseline Study: Site Analysis Report for Pailom village Champone district, Savannakhet province, Lao PDR (LA02) <https://cgspace.cgiar.org/handle/10568/80495>

Organisational Baseline Study: Overview report for Ma CSV, Vietnam (VN01) <https://cgspace.cgiar.org/handle/10568/80493>

Organisational Baseline Study: Overview report for Pailom CSV, LAO PDR(LA02) <https://cgspace.cgiar.org/handle/10568/80497>

Organisational Baseline Study: Overview report for My Loi CSV, Vietnam (VN02) <https://cgspace.cgiar.org/handle/10568/80498>

Analyzing farm household strategies for food security and climate resilience: The case of Climate-Smart Villages of Southeast Asia <https://cgspace.cgiar.org/handle/10568/99100>

Gender and Inclusion Toolbox <https://ccafs.cgiar.org/gender-and-inclusion-toolbox#.XjkKeWgzblV>

Closing the Relevance Gap: Lessons in Co-Developing Gender Transformative Research Approaches with Development Partners and Communities. CCAFS Working Paper no. 99 <https://cgspace.cgiar.org/handle/10568/56630>

STEP 3. Session Attachments



Attachment 1

The Case of Daga-Birame

Lifted from Case study of Daga-Birame CSV for CCAFS ISP11/6.1.2 – Senegal

The Climate-Smart Village approach: what research and insights from current implementation in Daga-Birame CSV in Senegal?

Sonogo D, Dayamba D, Ouedraogo M, Zougmore R, Bayala J, Ndiaye O, Sall M, Diop M, Camara B, Ndour Y, Sangare S, Ky-Dembele C, Partey S, Ouedraogo J, Jarvis A, Campbell B

Approach to setting up the CSV

Setting up Daga-Birame CSV commenced after selecting potential CSV sites based on climate risk profiles, potential land-use options, and assessing willingness of farmers and local government to participate (Förch et al., 2013). Initially, a household baseline study was conducted and covered 7 villages including Daga-Birame (Yacine et al., 2011).

In 2011, two villages including Toune Mosquée and Ngouye-Daga-Birame, were selected for the implementation of the CSV approach but the latter was the main focus given the social motivation of the village for innovation. The visions for the future, as well as actions and partnerships needed to reach this desired future, were elaborated with farmers and key stakeholders using a participatory approach. Village communities indicated that for natural resources management, they envision the following to happen, in a positive future:

- Crop production provides sufficient food as well as surplus stocks
- Livestock numbers increase, and their health and conformation (shape and structure) improve
- Pest and diseases from the location are eradicated
- Water erosion is controlled through better management of farmlands
- Market-gardening incomes increase
- Livestock deaths due to flooding are reduced

The community also wished to eradicate diseases related to drought and rainfall events, to have better access to financial resources, to have dynamic, autonomous, well-structured and functional organizations and strengthened partnerships.

Subsequent to the defined vision, specific actions to be undertaken were agreed upon during the community meetings. The community recognized that a key condition to getting an operational CSV was strong partnerships, with partners implementing the different actions in an integrated manner. For Daga-Birame CSV, research and extension services, met services, NGOs, private sector, local decentralized authorities and community organizations were key playing actors (Sanogo, 2014; Bayala et al., 2016). Regional and international organisations such as Aghrymet, INSAH, CORAF/WECARD, ICRAF, CCAFS-WA, provided scientific, technical and financial support. Through a number of these partners, community voices, successes and lessons could be relayed to policy-related decision makers.

Access full report here: <https://cgspace.cgiar.org/handle/10568/78211>



Attachment 2

The Case of Bihar



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Scaling up of Climate-Smart Villages across the 38 districts of Bihar



PHOTO: P. CASIER / CGIAR

March 2019
CCAFS Outcome Case

LEAD CENTER / PARTNER
CCAFS, CIMMYT

YEAR 2016

CONTACT Mangi Lal Jat

FLAGSHIP Climate-smart
technologies and practices

GEOGRAPHIC FOCUS South Asia

SUMMARY

Bihar's agricultural production is regularly affected by droughts and floods. The CGIAR Research Program on Climate Change, Agriculture and Food Security ([CCAFS](#)) and International Maize and Wheat Improvement Center ([CIMMYT](#)) showcased climate-smart agriculture (CSA) practices to high-level government officials in several Climate-Smart Villages (CSV). After the visit, the government of Bihar decided to implement CSA and CSVs in all districts of Bihar. On-farm evidence from the CSVs and events organized by CIMMYT and partners inspired these government policies. They are expected to positively influence the ability of hundreds of thousands small-holder farmers in Bihar to improve their nutrition and livelihoods while coping with the droughts and floods.

CCAFS IS LED BY:



RESEARCH IMPLEMENTED IN COLLABORATION
WITH:



OUTCOME CASES

Bihar's economy has grown considerably in the last decade but this growth has been hampered by the vulnerability of the agricultural sector, according to the World Bank. While Bihar has fertile soils and sufficient ground water, its agricultural production is affected by recurring droughts and floods. Strengthening the climate resilience of the agricultural sector is therefore key to the livelihoods of the more than 100 million Bihari, especially in the face of a changing climate.

For this reason, the state government of Bihar has prioritized improved resilience in agriculture in its policy agenda, seeking measures to diversify production and improve water management. For several years, CCAFS, CIMMYT and other partners have tested agricultural practices that improve food security, build resilience to climate stresses and reduce emissions in CSVs in Bihar. In the need to address climate change in their agricultural policy plans, Bihar's Chief Minister, the Agriculture Minister and other senior government officials visited several of these Climate-Smart Villages in 2016.

After the visit, the government of Bihar decided to implement CSA and CSVs in all 38 districts of Bihar. Ever since, numerous events have been organized by CIMMYT, the Borlaug Initiative for South Asia (BISA) and other partners to assist the government of Bihar with their policy agenda, 'the Krishi road map'. These events highlight the benefits of practices such as direct-seeding, site-specific nutrient management and weather forecasting, and have already attracted hundreds of farmers and representatives of NGOs, companies and the government. In total, the policies inspired by the CSVs are expected to help hundreds of thousands small-holder farmers in Bihar improve their nutrition and livelihoods while coping with climate risks.

KEY FACTS

- The state government of Bihar prioritized strengthening the climate resilience of its agricultural sector.
- CCAFS and its partners showcased CSA practices to high-level government officials.
- The state government of Bihar decided to implement CSA and CSVs in all 38 districts of Bihar.

LESSONS: KEY ELEMENTS OF SUCCESS

- CSA answered the need of the Bihari government for practices that improve the climate resilience of agriculture.
- CSVs and agricultural research sites in Bihar enabled the showcasing of effective practises in local conditions.
- A combination of on-farm evidence and high-level meetings led to the scaling up of CSVs across Bihar.

FURTHER READING

- Blog: [Bihar agriculture minister visits Climate-Smart Villages](#)
- Framework, guidelines and governance: [Designing local adaptation plan of action to mainstream Climate-Smart Villages in India](#)
- Annual report 2016: [Climate-smart hotspots in South Asia](#)

RELATED RESEARCH OUTPUTS

- Journal article: [Coping with weather adversity and adaptation to climatic variability: a cross-country study of smallholder farmers in South Asia](#)
- Journal article: [Economic benefits of climate-smart agricultural practices to smallholder farmers in the Indo-Gangetic Plains of India](#)
- Journal article: [Seven years of conservation agriculture in a rice-wheat rotation of Eastern Gangetic Plains of South Asia](#)
- Journal article: [Prioritizing climate-smart agricultural land use options at a regional scale](#)

RESEARCH SUPPORTED BY:



Access full report here: Scaling up of Climate-Smart Villages across the 38 districts of Bihar <https://cgspace.cgiar.org/handle/10568/102479>



Attachment 3

Evaluation form (Adapted from IIRR)

Step 3 Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Explain the criteria and other considerations when choosing a CSV.					
2. Identify potential CSV/s within their locality.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating.

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

STEP 4. Session Attachments



Attachment 1

Building Multi-stakeholder Partnerships



Promoting multi-stakeholder partnerships is one important mechanism in enhancing the participation of a larger and more representative grouping to provide inputs into an activity or project. Real and meaningful participation cannot be achieved by involving only a few key groups. In most development activities or projects, partnerships are often limited to a few stakeholders, e.g., donors, government and/or non-government organisations (NGOs) or people's organisations (civil society organisations (CSOs), or community-based organisations (CBOs). This is now changing with a greater appreciation of the value and advantages that partnerships among wider groupings bring into the development scene.

Value of Multi-Stakeholder Partnerships

- **Better information**

Key actors from various sectors provide critical inputs to the formulation of the framework and context for development assistance or the design, implementation, and monitoring and evaluation of projects.

■ **Representative perspective**

Varied groups and sectors, rather than only a handful of so-called experts hired by donor agencies or by governments, help ensure a wider, more representative, even if divergent perspectives and approaches.

■ Wider ownership

Multi-stakeholder partnerships enhance sense of ownership of the outputs of the process.

■ Democratisation

Multi-stakeholder groups also promote and strengthen democratisation processes. A multi-stakeholder approach in conceptualising, identifying, implementing, monitoring and evaluating a project or an activity, ensures wider ownership, shared responsibility and collective accountability than would be otherwise be possible.

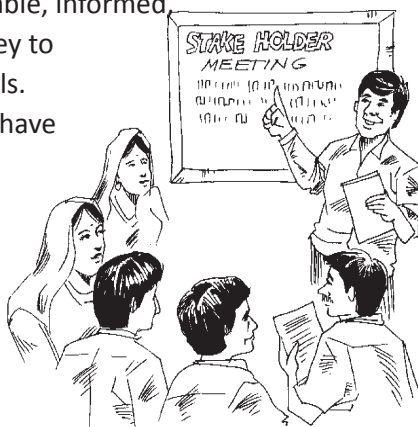
Multi-stakeholder partnerships and approaches should be promoted at the following levels:

- policy formulation at national and local levels; and
- projects at local level.

Building such partnerships and networks at any level, can be a formidable task, fraught with risks if the right stakeholders are not properly involved or if important stakeholders decide not to participate in the process of networking. It is, therefore, essential to be guided by certain principles that make for effective multi-stakeholder partnerships.

Principles for Effective Partnerships

1. **Proper groundwork.** In depth groundwork is necessary, including the following:
 - adequate briefing of all parties concerned;
 - providing them with enough background information and materials;
 - allowing sufficient time to develop the networking; and
 - enabling parties to feel they are all – to some extent – owners of the process.
2. **Skilled/quality staff.** Knowledgeable, informed, committed and skilled staff are key to building networks at varying levels. Important skills that staff should have include:
 - conflict management and resolution;
 - community organisation;
 - group-building;
 - communication;
 - facilitation; and
 - documentation.



Principles for Fostering Multi-Stakeholder Partnerships

1. Proper groundwork
2. Skilled/quality staff
3. Proper identification of stakeholders
4. Clear aims of partnerships
5. Commitment of stakeholders
6. Determining level of partnership
7. Active participation of stakeholders
8. Availability of human/financial resources
9. Regular communication
10. Capacity building
11. Inclusiveness
12. Documentation



3. **Proper identification of stakeholders.** Stakeholder analysis is essential for ensuring a balance in representation of sectors/groups as well as a balance of power relations and dynamics among the groups and individuals (*stakeholder analysis is discussed on page 102*).
4. **Commitment of stakeholders:** Clarification of commitments of stakeholders to the process needs to be made, particularly of government which can affect the outcome of the activity or project.
5. **Clarification of aims of partnership:** The objectives and purpose of building a multi-stakeholder network/partnership must be clear to all parties concerned.
6. **Determining level of partnership:** Level and extent of partnership envisioned with various stakeholders should be determined.
7. **Active participation of stakeholders:** Active participation of key parties, particularly primary stakeholders, (the poorest of the poor and the most marginalised) should be ensured.
8. **Capacity-building:** Working with primary stakeholders who are the poor and marginalised entails also developing their capacity to voice their views and opinions to wider groups without fear of intimidation.
9. **Availability of human/financial resources:** Networking and partnership-building need time and investment in human and financial resources to be effective.
10. **Regular communication:** Regular communication among different stakeholders is a key element in building partnerships.
11. **Inclusiveness:** It is important to keep inclusiveness in mind while forging multi-stakeholder partnerships to ensure participation and sense of ownership of the process among the widest group possible.
12. **Documentation:** At all stages of building partnerships, documentation should be an essential element to assure a continuing learning process for everyone concerned.

Value of Consultations

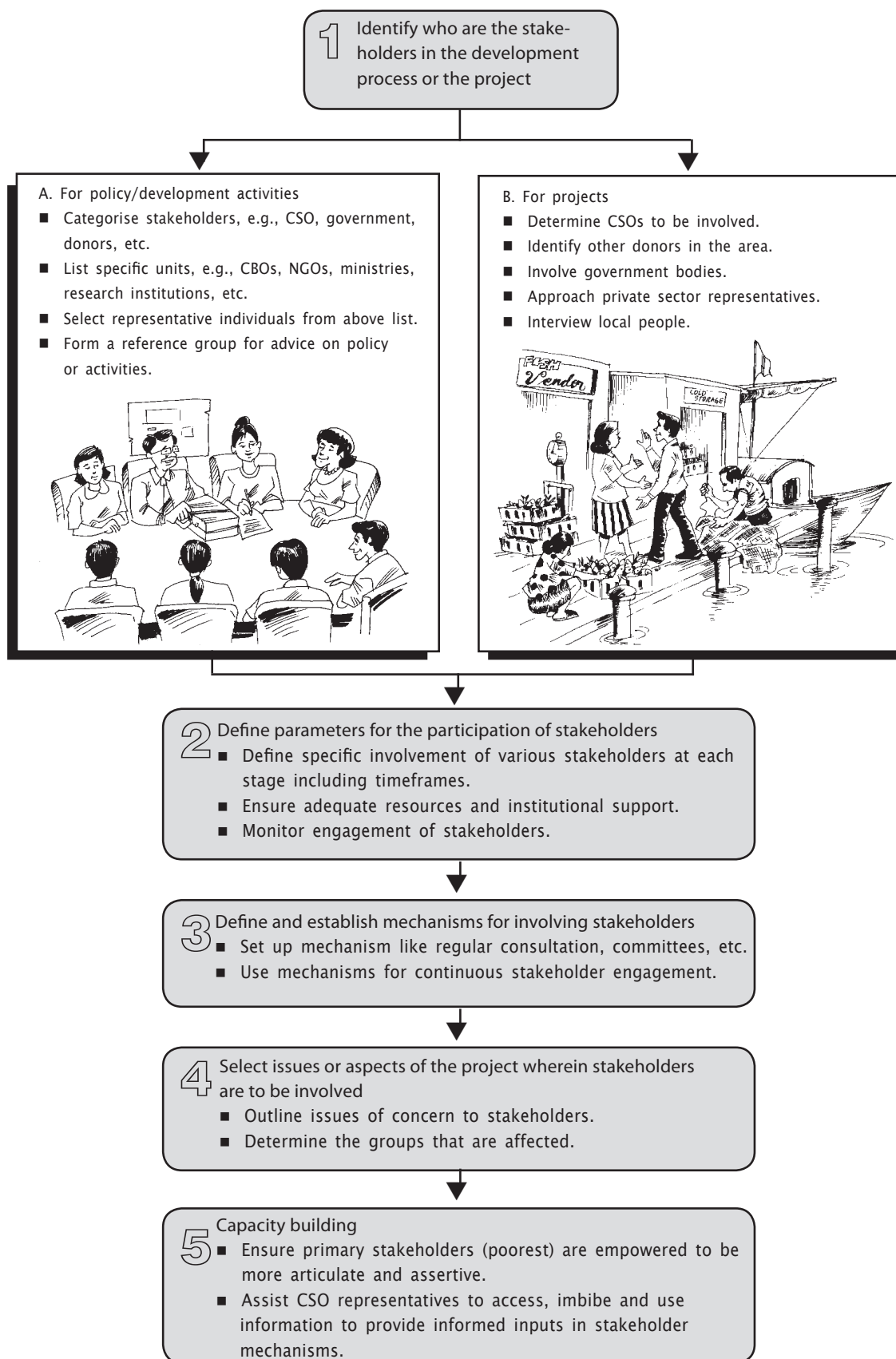
- A way to involve all stakeholders, particularly at the initial stages to explore possibilities for future collaboration and mechanisms for furthering the collaboration.
- Avenues for seeking opinions on issues that can affect policy or projects.



Process for Facilitating Multi-Stakeholder Consultations

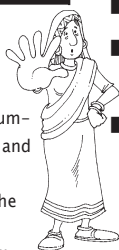
An important mechanism for promoting multi-stakeholder partnerships is through multi-stakeholder consultations. Ideally, these should be held regularly.

The aim and objectives of consultations may be viewed differently by different groups. Consultation involves a two-way communication where stakeholders have the opportunity to make suggestions and express their concerns. However, they have no assurance that these inputs will be used. In many cases, stakeholders do not give their inputs into the agenda or process.



Essential Elements for Successful Multi-Stakeholder Consultations

- Sufficient lead time for preparations
- Funding and other logistical support for preparatory work
- Prior circulation of documents in a simplified/summarised format (this includes the use of tables and diagrams and use of the local language)
- Involvement of a lead CSO or CSO network in the planning and preparation for the consultation
- Finding the "right mix" of participants among all stakeholders
- A separate, prior meeting/s among a few key stakeholders to clarify the consultation objectives, the agenda and expected output or even technical concepts
- Immediate clarification of the purpose, expected outputs and "ground rules" of the consultation
- Skilled facilitation and participatory discussions
- An immediate on-the-spot summary and feedback on the key points discussed, including all the major points of agreement and disagreement
- Post-consultation feedback to participants



Distinctions need to be made between and among the following:

- meeting – can be of a general nature;
- consultation meeting – has a more defined objective/s; and
- consultation process – involves a more drawn-out process of possibly several meetings/consultations, with informal discussions taking place outside the formal meetings.

The scope and purpose of the consultations must be made clear to all concerned at the start of the process. In this way, expectations among stakeholders will not be overly high and cynicism can be avoided. Transparent processes and methods must be communicated to everyone concerned, staff involved in the networking must be sincere and determined in pursuing the networking, despite constraints such as lack of interest, skepticism, even cynicism among some stakeholders.

Preparing the consultation process

- As government agencies at local or national level are key stakeholders in project or activities, ensure that there is adequate government awareness and commitment to the process; also clarify the extent of government involvement.
- Inform and convey clearly the aims, objectives, and scope of the consultation exercise to all parties concerned.
- Ensure that there is:
 - adequate budget and resources for the process, including follow-up if needed;
 - adequate time provision to prepare for the consultation meeting/process; and
 - sufficient and appropriate human resources, including adequate knowledge, skills and expertise, particularly for facilitators.

Prepared by:
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With inputs from:
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RESOURCE BOOK PRODUCED IN A PARTICIPATORY WRITESHOP ORGANISED BY THE International Fund for Agricultural Development (IFAD), Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC), Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP), South East Asian Rural Social Leadership Institute (SEARSOLIN), MYRADA and International Institute of Rural Reconstruction (IIRR).

Selecting participants

- Ensure that the participants to be invited are credible and that they are representative geographically.
- Seek advice from key informants in other organisations/sectors who may be familiar with CSOs, etc.
- Ensure transparency in the selection process which must be made available to anyone interested.

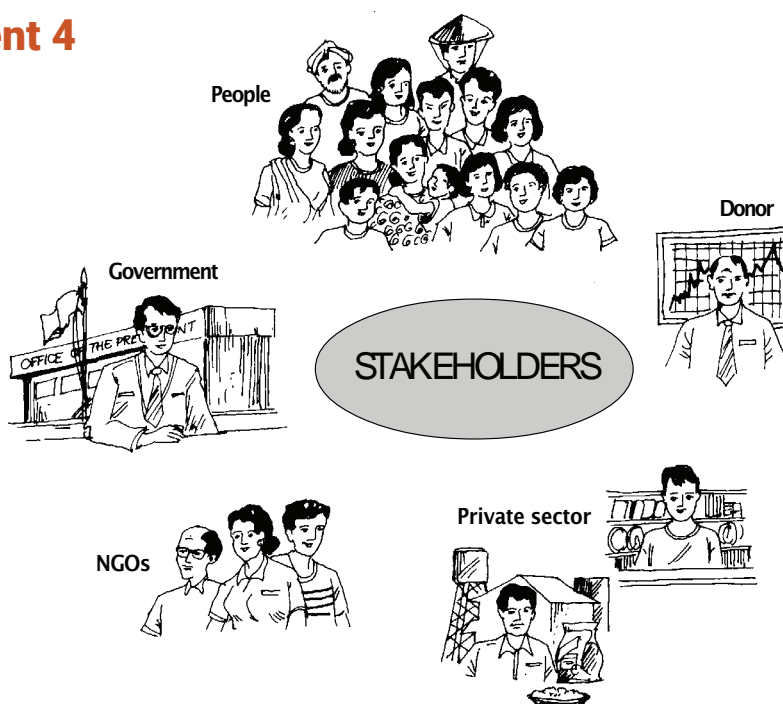
Source: IFAD, ANGOC and IIRR. 2001. ENHANCING OWNERSHIP and SUSTAINABILITY: A RESOURCE BOOK ON PARTICIPATION. International Fund for Agriculture Development (IFAD), Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) and International Institute of Rural Reconstruction (IIRR). 335 p.



Attachment 2

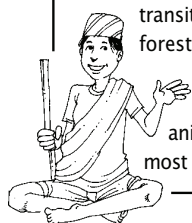
Stakeholder analysis: A process approach

Attachment 4



The Risks of Overlooking a Stakeholder

The establishment and implementation of community forestry in Nepal has considerably improved the status of forest resources. However, the closing of areas under community forestry to “outsiders” meant that pastoralists from the northern areas who used to take sheep and goats to the south for trade (carrying salt and other goods) as well as to bring their herds to greener pastures, lost their traditional rights of transit through some of these forests. As a consequence, pastoralists had to slaughter or sell their animals, thus losing their most important livelihood assets.



Failure to identify all stakeholders can have severe implications in development initiatives/projects:

- It can have devastating consequences on the livelihoods of some people;
- It can slow down project implementation. For example, the disregard of some government agencies and/or private sector (middle-level traders) may lead these stakeholders to “boycott” project initiatives;
- It may even stop implementation altogether. For example, watershed projects often fail to recognise the stakes and the ensuing competition between communities (upstream and downstream interests with regard to water, soil conservation, etc.), between individuals (commercial vs. subsistence agriculture) and/or between national interests vs. local livelihoods. This often leads to conflicts that may, at times, bring projects to a grinding halt.

Stakeholder analysis is crucial in project design and implementation as it seeks to identify all stakeholders, in particular the disadvantaged and less powerful groups – who are generally voiceless – and seeks to integrate their interests and concerns. Stakeholder analysis is critical for the identification of appropriate project initiatives as well as for targeting them. Stakeholder analysis is an integral part of participative diagnostic studies (see related topic on Participatory Diagnostic Study in Project Formulation and Beyond: A Process Approach) which focus on primary beneficiaries, particularly the poor and the marginalised.

Who is a Stakeholder?

In the context of a development project, a stakeholder can be defined as any group or individual who can affect, or is affected by, any initiative undertaken by that project.

What is a Stakeholder Analysis?

"Stakeholder analysis can be defined as an approach for understanding a system by identifying the key actors – or stakeholders – in the system and assessing their respective interest in that system" (Grimble et. al. 1995). It refers to a range of tools for the identification and description of stakeholders on the basis of their attributes, interrelationships and interests related to a given initiative or resource.

Why do we Need a Stakeholder Analysis?

There are several reasons to carry out a stakeholder analysis:

- empirically discover existing patterns of interactions;
- improve and target interventions;
- as a management tool in policy-making; and
- as a tool to predict and/or manage conflicts.

What is the Purpose of a Stakeholder Analysis?

The basic objectives of stakeholder analysis are to:

- identify all those – people, groups or institutions – who might be affected by an intervention or can affect its outcome;
- identify local institutions and processes upon which to build; and
- provide a foundation and strategy for participation.

Categories of Stakeholders

- Primary stakeholders: These are project beneficiaries. IFAD regards the poor and marginalised groups as the primary beneficiaries and tries to focus its efforts on fostering their participation.
- Secondary stakeholders: They comprise government agencies, NGOs, research institutions, etc. They participate in the project because they either have a stake/interest in or can contribute to it.
- External-or other-stakeholders: These are people groups and/or institutions that are not formally involved in specific project activities but can have an impact on or be affected by a project.

Stakeholder Analysis: Steps and Tools

- Identify the main purpose of the analysis;
- Develop an understanding of the system and decision-makers in the system;
- Identify principal stakeholders;
- Investigate stakeholders' interests, characteristics and circumstances;
- Identify patterns and contexts of interaction between stakeholders; and
- Define options for management.



Although differentiation between stakeholders is a necessary step in stakeholder analysis, the distinction is often based on qualitative criteria that are difficult to generalise. The use of matrices is a common tool in stakeholder analysis, in which stakeholder groups appear on one axis and a list of criteria or attributes appears on the other. For each cell, a qualitative description or a quantitative ranking is given in the table.

The identification of stakeholders is best achieved through a series of brainstorming sessions at various levels, whereby a list of all likely stakeholders is drawn up. Then, depending on the type of stakeholders, interviews, workshops and participatory analysis are undertaken during the project formulation process, to ensure that their voices/concerns are heard and their interests are identified. The table below illustrates how the methods that best fit different types of stakeholders can be identified.

Questions to Ask for Identifying Important Categories of Stakeholders

- What issues are at stake for this category of stakeholders?
- How important is this stakeholder for the success of the project?
- How much influence does this stakeholder have over the project?
- How can this stakeholder contribute to the project?



Plan for a Stakeholder Consultation					
Stakeholder	How to be Consulted	Methods to be used			When to be Consulted
		Interview	Workshop	Participatory Diagnostic	
IFAD evaluation committee					Choice of evaluation
Cooperating institution					Prior to and after mission
Co-financier	Review TORs				Prior to and after mission
Country Programme Manager (CPM)	Review TORs, participate in workshop and wrap-up meeting		X		Prior to, during mission wrap-up and during writing and review
Office of Evaluation (OE)					
Borrower (MOF)		X			Etc.
MOA HQ		X	X		
MOA district			X		
Front line implementing staff			X		
Implementing NGOs		X	X		
Environmental lobbies/ NGOs			X		
District local government			X		
Private contractors		X			
Local leaders			X	X	
Ordinary households				X	
Poor farmers				X	
Women and youth				X	
Ethnic groups/caste				X	

An essential step in stakeholder analysis is to identify all primary stakeholders, especially those who are less “visible” and voiceless, e.g., the marginalised groups.

Process in Stakeholder Analysis

1. Brainstorming: list all possible stakeholders in project
2. Group stakeholders: public sector, private sector, NGOs, intended beneficiaries, other affected people
3. Assessment of stakeholders’ interest and potential impact of the project on these interests (Table 1)
4. Assessment of stakeholders influence and importance (Table 2)
5. Outline of a stakeholder participation strategy (Table 3)

Tables 1 to 3 show analytical grids that can be used to identify: (a) which stakeholders are most important for the programme; (b) which stakeholders are most able to make their voice heard; and (c) which important stakeholders are likely to be bypassed unless special efforts are made to consult them.

Identification of Stakeholders

Likely Primary Stakeholders

- Farmers: smallholders, commercial, landless households
- Male/female, young/old, wealthy/poor, ethnicity
- Crop growers, mixed farmers, pastoralists, fishermen, forest dwellers, casual labourers, handicraft producers, etc.
- Producers for local market, export crop growers
- Food secure; food insecure
- Local groups (formal/informal): cooperatives, women’s groups, self-help groups, exchange labour groups, etc.

Likely Secondary Stakeholders

- Local government (village, ward, district)
- Implementing agencies (ministries, departments, NGOs, etc.)
- Private input suppliers, traders, transporters, processors, etc.



Table 1. Identification of Stakeholder Groups, Interest, Importance and Influence

Stakeholder Groups (Illustrative list)	Interests at Stake Relative to Project (list)	Effect of Project on those Interests positive/negative (insert +, 0, or -)	Importance of Stakeholder for Project Success (1 - highest, 5 - lowest)	Degree of Influence over Project (rank 1 to 5)
Farmers - Smallholders - Commercial - Landless - Women				
Other private sector - Input suppliers - Agro-processors - Farmers' association - Farm lobbies - Local NGOs - Universities - Consulting firms - Elected councils				
Borrower (MoF) - Central - Districts - Other				
Other ministries - Planning - Agriculture - Natural resources - Others (land, women, etc.)				
Donors/ Major NGOs				

Note: Influence refers to the power which a stakeholder has over a project. Importance relates to which achievement of project objectives depends on the active involvement of a given stakeholder group.

Table 2. Mapping Key Stakeholders' Relative Influence and Importance

Influence of Stakeholder on activity (+)	Importance of Activity to Stakeholder (0)					
	Not known	Little/No importance	Some importance	Moderate importance	High importance	Critical player
Unknown					+ 000	
Little/No influence						
Some influence						
Moderate influence						
Significant influence						
Very influential						

Note: Each stakeholder has a set of grids by type of activity or component.

Table 3. Formulation of Stakeholder Participation Strategy

Stage in Project Process	Type of Participation			
	Information sharing (one way flow)	Consultation (two way flow)	Collaboration (increasing control over decision-making)	Empowerment (transfer control over decisions and resources)
Project formulation				
Appraisal				
Implementation, supervision and monitoring				
Evaluation				

Note: Insert specific participation strategies for key stakeholders, e.g., information campaign for general public, workshop with ministries and NGOs; PRA with communities and groups, etc.

After the stakeholder analysis is carried out, a series of consultation meetings at different levels (local, regional and/or national workshops) are organised in order to identify areas of convergence/divergence among key stakeholders. Given the unequal distribution of power among stakeholders, care must be taken that those with less power (women and other marginalised groups) are provided with the necessary “space” to voice their concerns and priorities. In some circumstances, external partners/agencies need to play, at least in the beginning, an advocacy role in favour of the powerless group.

In case of divergence of interest/concerns, negotiations/conflict management tools need to be employed.

Since changes are likely to take place during project implementation, stakeholder analysis is not a discrete activity but rather a process – though an intermittent one. Therefore, groups/individuals/agencies who are not stakeholders at project formulation may become such during implementation either owing to project activities or to totally external factors. Thus, the need for flexible projects and a “learning” approach based on re-diagnosis and planning. This will allow, among others, for inclusion of new stakeholders.

Prepared by:
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RESOURCE BOOK PRODUCED IN A PARTICIPATORY WRITESHOP ORGANISED BY THE International Fund for Agricultural Development (IFAD), Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC), Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP), South East Asian Rural Social Leadership Institute (SEARSOLIN), MYRADA and International Institute of Rural Reconstruction (IIRR).



Attachment 3

Excerpt from brief: Establishing partnership with governments: The case of Guinayangan fostering local adaptation platforms for agriculture

How local adaptation platforms such as CSVs can contribute to National Adaptation Plans in Agriculture

The objectives of any country's National Adaptation Plan are to reduce the impacts of climate change by building adaptive capacities and to facilitate the integration of climate change adaptation in a coherent manner into relevant policies and programmes and activities (UNFCCC, 2012). Climate change can lead to a loss of assets, result in reduced income flows, and affect livelihoods and food security. There is a need for no regrets climate adaptation work (promoting climate resilience in agriculture in order to build capacities to cope with climate impacts even if the worst fears do not materialize). There are risks in promoting measures that deliver on short term gains,

but which compromise the coping capacities of communities (in the long run).

This can be referred to as mal-adaptation. National Adaptation Plans reduce vulnerability to climate change, help build capacities, and promote resilience. At local levels, CSVs (or other local adaptation platforms) can help serve as crucible for testing and developing solutions relevant to National Adaptation Plans. They facilitate climate change adaptation into local programs and plans. Climate change adaptation process and approaches are developed in these community-based platforms.

Building adaptation capacities to continue to cope

To design effective Community-Based Adaptation (CBA) efforts, we have to first understand and assess the local risks and vulnerabilities of communities. Focus group discussions, key informant panels, surveys, and the study of secondary data are important methods. Vulnerability assessments help to better understand location and context-specific climate change impacts, which enables stakeholders to properly identify options for addressing it.

CBA is a process of resilience building that is grounded on location and context-specific vulnerabilities. The goal of CBA is to build resilience in a bottom up manner. This is why community-based participatory action research is essential for deriving effective

solutions. Finding solutions that work locally involve a process of participatory technology development (action research and learning). Farming and fishing communities identify, plan, design, field test, and learn about the effectiveness and scalability of a portfolio of options for addressing specific risks and vulnerabilities.

Building resilient smallholder farms and communities entails understanding the complexities that contribute to vulnerabilities and risks; and developing multiple scales and levels of strategies that all contribute to addressing the multi-dimensional challenges of food, nutrition and livelihood insecurities.

CSVs: focal points for adaptive research at local level

Individual action is not enough to cope with climate change. CSVs provide venues where different stakeholders collectively participate in the program/project planning and implementation. Here, they can generate practical adaptation and mitigation options to improve their food security, nutrition, and climate resilience. Concerted actions in the CSVs operate at the community level and its surrounding landscape.

CSVs are primarily focal points for deriving or/and testing location-specific adaptation options in agriculture, livestock, aquaculture, and in allied natural resource management sectors (agroforestry, agrobiodiversity, community forestry, etc). Multiple CSV sites represent different agroecologies, climate risks, etc. This diversity in context is useful for comparison, extrapolation, climate analogue research, etc. CSVs

help develop solutions to anticipated future impacts of climate change. No regret options are developed in anticipation of climate change.

The CSV approach is a collaborative effort designed to test and identify appropriate interventions, innovations, and policies which are not only technically appropriate but also gender- and socially-sensitive. In CSVs, rural communities partner with local governments, national programs, and international research and development organizations to develop villages as models for local research and development. They provide platforms for multi-stakeholder participation and collaborative work in targeted, clearly delineated geographic areas ("territories" or "small landscapes").

CSVs are "lighthouses" where communities strengthen existing farming systems and enrich them with CSA practices and technologies. Climate resilience thinking is already noted in communities as demonstrated by farmers. The approach rides and builds on current systems, enhancing diversification, nutrient cycling, food safety, and market linkages.

CSVs consider not only the farms but the landscapes as well

CSA/CRA is usually best undertaken across landscapes because ecosystems are interconnected. By conserving and improving forest and water resources, nutrient flows to farms on lower slopes are likewise enhanced. Landscapes are useful organizing frameworks for operationalizing climate-smart/resilient agriculture on the ground. Landscape approaches help us better understand the multi-functionality of agriculture and links to forests, water, and other natural resources. Climate, Environment, and Ecosystem elements interact with farms and local communities in a small landscape or micro-watershed setting. These natural resource boundaries are important because of the ecosystem influences on climate adaptation and resilience building objectives of a CSVs.

CSVs feature incremental development and adaptation approaches

Collective action on a wider scale is usually necessary for successful local adaptation programs (e.g., no burning of rice straw campaign, watershed rehabilitation, etc.). The interface between forestry and agriculture is blurred in such approaches requiring multidisciplinary and convergence approaches. Groups processes are involved. Learning methods recognize that farmers and local communities have limited time for a series of structured courses. Instead, experiential learning and sharing is featured. With a deepening engagement, more sophisticated methods of learning might be considered.

CSVs at local levels (villages and municipalities) are ideal locations for harmonising and converging agricultural and natural resource management and governance inputs. Using participatory land use planning approaches, communities can be assisted to develop local adaptation plans to address climate-related risk.

CSVs are unique in that they provide space for the

testing of shortlisted options (derived from on-station research, local indigenous and technical knowledge, etc.). This eventually leads to the prioritization of best options for particular geographic areas. CSVs also help generate methodological innovations.

Though CSVs are focal points for action research (or lighthouses for learning and sharing), they should not remain as islands of innovations. Wider adoption of innovations needs to be ensured. They should "not [be] a showcase but a pattern". The integrity of the CSV as a unit for action research should not be compromised. Otherwise, its emphasis on generating local evidence is lost. It is important for the CSV proponent to clarify the role and purpose of doing CSVs and specify their intended scope and scale of application. The question of scale must be understood in the context of what is driving the need for a CSV.

Conclusion

Local adaptation platforms help empower sub-national and local government players, civil society organizations, and public-private partnerships in demonstrating the validity of agro-ecology-specific solutions to current and future climate change impacts. Such adaptation platforms are invariably diverse in their portfolio addressing multiple needs and purposes. Development-oriented CSVs feature scaling, social inclusiveness, and sustainability.

CSVs serve as centers for discovery, adaptation, learning, and sharing. They serve as basis for documentation and field level advocacy. Adaptation research, which is a basic element of a CSV, helps build and nurture local capacities at different levels. Local communities of practice are encouraged to continue to innovate, experiment, and adapt (incrementally or step by step). Communities that have had a successful community-level adaptation management experience are likely to adapt better to future changes. In a CSV, we ultimately need to ask ourselves whose needs are being addressed. Achieving outcomes such as reduced poverty, enhanced resilience, improved livelihoods, and better nutrition should be the primary considerations. After all, CSVs are not about doing business as usual! CSVs feature ways of achieving both scale and sustainability in a socially inclusive manner.

Reference:

UNFCCC. (2012). National Adaptation Plans. Technical guidelines for the national adaptation plan process. Least Developed Countries Expert Group. UNFCCC Secretariat. Bonn. Germany (available at www4.unfccc.int/nap/Guidelines/Pages/Technical-guidelines.aspx).

Source: IIRR, 2019



Evaluation form (Adapted from IIRR)

Step 4. Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Discuss key activities and target outputs of the consultation process; and					
2. Identify ways to engage potential partners and resource institutions.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating.

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

STEP 5 & 6. Session Attachments



Attachment 1

Participatory Action Research (PAR)

PAR, an approach that brings together farmers, researchers and resource institutions, can produce sustainable solutions to address climate change impact in agriculture. PAR as defined by CCAFS is a “collaborative approach to research, education and action, and helps gather information in order to solve social or environmental issues”. PAR in the context of resilient building in agriculture is used to test, identify and evaluate technological options and processes. Unlike conventional action research, testing and development of technologies are done at the farmers’ field. These technological options, lessons and new knowledge can be scaled out through indigenous and emerging pathways.



Attachment 2

Strategies to promote innovation development and learning: IIRR's experience

Participatory action research (PAR) planning and implementation

The commodity-based adaptation strategies were tested through participatory action research. PAR is an approach for the community to identify the best technology for adoption. Minimum number of farmers (2-4 persons) will try the identified solution. They are called farmer researcher or cooperators. Depending on the immediate concerns of the community, priority is given to selected strategies. Usually, only 1 to 2 action researches supported with innovation fund were performed in a season. For short duration commodities, testing is repeated twice. However, this is not applicable to perennial crops. Nevertheless, PAR is not a one-time activity but a cycle of inquiry that will answer future concerns of the group.

Farmer researchers played a significant role in doing action research. He led the establishment and management of the technology demonstration site. The following criteria guided the FLG in selecting farmer researchers:

1. a member of the FLG;
2. willing to share a piece his land or facility where the technology will be tested;
3. able to provide labor or materials as his counterpart; and
4. capable of gathering data and will share his experiences to the FLG members.

The learning group defines the method on how they can meet their objective. It could either be a participatory technology demonstration, participatory varietal or crop selection and comparison of technological options or farming system. In PAR, farmer participants are considered active learners thus they are given the chance to design the action plan. Farmer cooperators will be selected after establishing the PAR method. The FLG members will decide who among them is best suited to conduct the action research.

The details of the validated PAR were indicated in a form also called as the participatory action research proposal. Technical assistance from local

agriculture technicians is integral in designing the PAR proposal. They can provide insights about CSA technological options. The proposal contains the following information:

1. name of farmer researcher;
2. demo site or location;
3. name of local extension worker in-charge;
4. identified issue and challenges related to climate change and based from participatory vulnerability assessment and commodity profiling;
5. proposed solution to address the issue;
6. process, protocol and workplan of the action research;
7. materials needed and cost for the whole duration of PAR; and
8. the agreement between IIRR and farmer cooperator, terms of reference or memorandum of understanding.

Proposals are submitted to the municipal agriculturist for evaluation. A technical committee assess the proposal and endorse approval to the municipal agriculture officer (MAO). Upon approval, the accomplished form is attached to the Memorandum of Agreement signed by both parties: the implementers and the farmer researchers. Local barangay official will serve as witnesses. More so, barangay officers are also encouraged to join the learning activity. Barangay-level policy can be influenced directly by well-informed barangay officials.

Community innovation fund is directly given to famer innovators during meetings. Farmer researchers are encouraged to manage their own action research but with close supervision of local extension workers. Purchasing inputs, in some cases, were done collectively in order to reduce the cost of hauling/transportation.

It is expected from the farmer to follow the guideline laid in the initial stage of PAR implementation. Typically, farmer researchers were assigned to take care of crops/ livestock, collect data, take note of his observations, calls the attention of technicians if necessary and share information to other FLG members. Consequently, extension workers must be present during critical stages of PAR implantation: planning, establishment, monitoring, sharing of outputs and team evaluation. The local technician ensures that the agreed protocol is implemented.

Monitoring of action research is a joint activity of implementers and farmers. It can be done according to crop stages or can either be monthly or quarterly. The team agrees on the terms of monitoring and evaluation. In crop-based action research, the team check on basic agronomic parameters, response to

environmental stresses and resistance to pest and diseases. For livestock, common parameters observed is resistance to harsh weather condition, growth vigor and changes in weight. Importantly, farmers conduct a simple cost and benefit analysis.

Aside from the structured PAR, farmer members receive small amount of seeds, planting materials, and in some cases poultry and small livestock. This distribution is done through a dispersal mechanism wherein recipients promise to return back and/or redistribute parts of their harvest or production. Direct distribution is an approach wherein farmers are allowed to experience the concept of learning by doing. Together with the farmer researchers they also produce knowledge that can either support or improve the communal technology demonstration.

Value of Community Innovation Fund (CIF)

Community innovation fund is a type of support system provided to learning groups or individuals in order to catalyze community-based adaptation of identified CSA technologies. Provision of innovation fund aims (1) to encourage local efforts to experiment and innovate to address both current and future climate change impacts, (2) to tap the small-holder farmers as beneficiaries; and (3) to reduce these risks by providing funds in a cost-sharing arrangement with self-identified farmer groups willing to adopt new technologies.

According farmer researchers, the innovation fund helped them try different technologies and practices. Simple research experiment developed their skills to explore and determine options to improve their farms. Result helped them decide whether to adapt or not to adapt a specific CSA technology. There was less pressure among farmer researchers because they did not spare any money. Aside from which, the group also noted that farmer cooperators were more responsible because of the memorandum of agreement signed between them and the granting institute. More farmers prefer this method than direct distribution of materials.

But, not all farmers who signed the MOA are committed. Some sighted that the fund was not enough and they had to provide additional labor during testing. For example, they needed more manpower during the conduct of upland rice PVS specifically during harvesting and threshing. Participants added that proper selection of farmer researcher is very important.

What is a Learning Group?

A learning group needs no formal structures and preferably small in number, around 10 to 12 persons in a group. Learning agenda function as the core foundation of the group. Farmer-to-farmer sharing sustain knowledge generation which is directly linked to scaling-out of tested technology. Learning group also served as a mechanism for developing human resource for local extension systems. Reliance on agricultural technicians in extending technical assistance alone is limiting, specifically in the Philippines where there is shortage in terms of the number of extension workers.

Farmers sharing the same interest and learning agenda are identified by local extension workers. Learning group does not necessarily follows a module but meets regularly. Most learning groups opted to elect a set of officers. Members agreed the time and location the FLG meetings. Meetings are usually conducted on a monthly basis. Attendance are regularly monitored during meetings. The elected president facilitates the assembly with the guidance of the local agricultural technician. Minutes of the meeting is noted by the group secretary. The meeting is centered on knowledge sharing. Usually, information is based from action research results or updated on the individual crop or livestock testing. The agricultural technician provides additional inputs and recommendation. Furthermore, the technician links the learning group to other institutions. In the end, the learning group is expected to share the knowledge they generated to other barangays and municipalities.

Methodological Approaches: Facilitating Farmer Learning Group (FLG) Processes

In the Municipality of Guinayangan, there were 17 farmer learning groups established across different ecosystems. The groups had different learning agendas developed based from the farmers' needs. In order to identify need-based approaches, IIRR and OMA staffs use tools particularly participatory varietal assessment and commodity profiling. Initial learning agenda were commodity based but was expected to be modified as the learning process proceed. Participatory action research is designed based on the generated learning agenda. Specific action research is planned and validated prior to implementation. The learning group submit a proposal to the local agriculture office to be evaluated by a technical working group. Implementation of approved PAR is supported by a community innovation fund. Discussions within learning groups include farmer cooperators observation.

Source: Vidallo, R., Mendez, K., Angeles, D. Learning Groups and Knowledge Generation on Climate Resilient Agriculture. Working Paper. International Institute of Rural Reconstruction (IIRR) and CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).



Attachment 3

Evaluation form (Adapted from IIRR)

STEP 5 and 6 Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Describe the PAR approach.					
2. Characterized CSA practices in various CSVs.					
3. Identify key lessons and facilitating factors in scaling CSA options.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

Education Support Materials

(click links to download materials)

Towards developing scalable climate-smart village models: approach and lessons learnt from pilot research in West Africa

<http://old.worldagroforestry.org/downloads/Publications/PDFS/OP16051.pdf>

Uptake of Climate-Smart Agricultural Technologies and Practices: Actual and Potential Adoption Rates in the Climate-Smart Village Site of Mali

<https://cgspace.cgiar.org/handle/10568/104038>

Prioritizing Land and Water Interventions for Climate-Smart Villages

<https://cgspace.cgiar.org/handle/10568/103395>

Participatory diagnosis and development of climate change adaptive capacity in the groundnut basin of Senegal: building a climate-smart village model

<https://cgspace.cgiar.org/handle/10568/81011>

Trees and agroforestry for coping with extreme weather events: experiences from northern and central Viet Nam

<https://cgspace.cgiar.org/handle/10568/76605>

Adaptation, mitigation and food security: Multi-criteria ranking system for climate-smart agriculture technologies illustrated for rainfed rice in Laos

<https://cgspace.cgiar.org/handle/10568/101147>

Scaling up agricultural interventions: Case studies of climate-smart agriculture

<https://cgspace.cgiar.org/handle/10568/96171>

Uptake of Resilient Crop Interventions to Manage Risks Through Climate-Smart Villages Approach in Nyando, Western Kenya

<https://cgspace.cgiar.org/handle/10568/80805>

Participatory identification of climate-smart agriculture priorities

<https://cgspace.cgiar.org/handle/10568/75542>

Participatory Research and Development for Sustainable Agriculture and Natural Resource Management

Volume 1: <https://www.idrc.ca/en/book/participatory-research-and-development-sustainable-agriculture-and-natural-resource-1>

Volume 2: <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/36074/IDL-36074.pdf?sequence=1&isAllowed=y>

Volume 3: <https://www.idrc.ca/en/book/participatory-research-and-development-sustainable-agriculture-and-natural-resource-management?PublicationID=191>

STEP 7. Session Attachments



Attachment 1

Scaling Considerations in CSV Development

Ms. Jana Patricia Koerner
CCAFS Scaling Officer
CCAFS SEA

Presentation highlights

- In the same way that setting up CSVs has elements of science but basically entails action, scaling is about action; it is about doing something to achieve impact.
- While project implementers feel a strong pressure to reach numbers as indicator of success, scaling aims to reach impact at scale. Based on the 2018 CCAFS Learning Platform on Partnerships and Capacities for Scaling, the CCAFS working definition of scaling is “the set of processes required to go beyond pilot projects to bring more quality solutions to millions of farmers in a fast, equitable, and lasting manner.”
- This definition was later refined during the CCAFS Southeast Asia Conference on Scaling in 2018. In the new definition, the scaling up of agricultural innovations is understood to “take place in complex systems of agricultural transformation. Therefore, sustainable scaling should build into ‘sustainable change at scale.’”
- Scaling does not happen in a straight line, but should be considered as a journey across a landscape, with different entry points, or a zigzag between different possibilities and opportunities. The next question to ask is “What are we going to scale?” In answering this question, there need to strike a balance between the most urgent needs of the farmers and the areas where the CSV approach can make the biggest impact or have the greatest leverage.
- Scalable solutions can be identified tools and practices that prove so beneficial and scalable that these will be scaled out to a larger scale.
- Building capacity for innovation is important, especially since the environment is changing and communities must be flexible enough to adjust to the changing conditions.

- Innovations must be easy, affordable, and culturally acceptable, these must also be better than any other comparable solutions. This hints strongly at economic assessments, and there should also be analysis of costs and benefits not only at the farmer level but also at the policy level.
- Inclusiveness concerns must also be considered, as the most vulnerable people and areas have different needs. The question that must be asked is, “Who shall benefit from the intervention?” At this point the need to strike a balance and accept trade-offs could arise. This also requires good targeting, since the vulnerable groups are mostly the ones that do not have the infrastructures and capacity for scaling out.
- One cannot separate innovation development and scaling, both of which are iterative processes. Right from the very beginning, stakeholders must be involved in the process so that they can have a sense of ownership of the intervention. There is also a need to negotiate different interests so communication occurs and shared understanding is reached across all levels.
- The biggest learning as regards scaling is that one cannot scale in isolation. Scaling is a collective action and involves “leveraging across different levels and sectors, a series of synergies and momentums.”



Attachment 2

Lessons from the Adaptation and Mitigation in Agriculture (AMIA) Program of the Philippine Government

Excerpt from info note:

Scaling the capacities to adapt to a changing climate

Experiences of the AMIA Climate Resilient Villages, Philippines

Jana Koerner, Ruvicyn S. Bayot, Maggie Rosimo, Rene Vidallo, Julian Gonsalves

NOVEMBER 2019

Key lessons from implementation

■ Ownership at the different levels

"A progressive community greatly depends on the farmers or people themselves!" Climate change is irreversible, but farmers are intrinsically able to adapt to and even mitigate climate change, thus strengthening the resiliency of their communities. Most respondents emphasized strongly that this effort takes collective learning and action.

"It is important that all actors understand their roles and responsibilities." The local government units (LGU) have a crucial role in guiding the AMIA process. They facilitate on the ground implementation, e.g. the introduction of CRA technologies and practices to farmers and farmers' trainings. They also coordinate with stakeholders at the field level to take on and enact their respective roles and responsibilities. Stakeholders include farmer associations, community officials, local and regional technical working groups, State Universities and Colleges and local, provincial and regional government units. The DA-Regional Field Offices (RFOs), in turn, liaise with the LGUs and the national government, and have the national coordinating responsibility of the AMIA village project.

■ Adaptive management

"The AMIA team must be resilient to adapt to the client's unique distinction." Each AMIA village has distinct geographic, political, social and demographic characteristics, and every village has its own priorities. This calls for an adaptive management approach. Communities need to be equipped to identify their own problems and come up with locally viable solutions. This entails proper and regular coordination and planning with the farmers from the very beginning.

"If you do not level off with the locals, you will never understand how they behave and why." Another crucial ingredient was having presence on the ground. Being hands-on and directly working with the farmers and fisherfolks builds trust in relationships. Open communication spaces allow that technicians and farmers effectively convey and understand their messages. Explaining the project thoroughly before starting field activities and having continued interaction will further

increase the probability that farmer-learning groups keep agreements and adhere to research protocols.

■ Partnerships and multi-stakeholder platforms

"The project can't work if you don't have smooth linkages with all the partners." Partnerships and multi-stakeholder platforms are very important elements to ensure sustainability. DA-RFOs and the LGUs shall facilitate and coordinate multi-stakeholder platforms from the very beginning of community planning to market linkage establishment for farmer associations and cooperatives.

Organizing and strengthening the community were other important elements of sustainability. One AMIA village leader observed that farmers who organized themselves during or after project implementation became more confident, active and maintained better relations among themselves than those who already had been members of existing organizations when the project started.

The AMIA villages' narrative on CRA

"... a holistic approach to foster the adaptive capacities of farmers and fisherfolks."

Not two communities or villages are alike. AMIA villages promote a combination of the respective traditional and best-adapted climate-resilient practices and technologies, as well as livelihood and income diversification, summed up as climate-resilient agriculture (CRA). They see this as a holistic approach to enhance the adaptive capacities of farmers and fisherfolks. Their main aim is to increase communities' resilience in the face of economic, human-induced and natural risks.

Depending on the respective contexts and development aims, some AMIA villages hereby focus more on climate change adaptation, livelihood enhancement and diversification. Some AMIA villages explicitly promote opportunities for women (e.g. low cost investments that women can manage); while other villages focus on supporting indigenous people's communities.

Textbox 3: The AMIA villages' narrative on CRA



Attachment 3

Excerpt from info note:

The why, what, who and how of scaling agricultural innovations

Key messages from the CCAFS SEA and cross-CRP Scaling Conference, Hanoi 2018

Jana Koerner, Lennart Woltering, Silke Uhlenbrock, Uwe Ohmstedt, Felix Zeiske, Murat Sartas, Arne H. Theissen

EDITED IN JULY 2019

Getting ready for system change

- In recent years, there is growing international demand that research outputs shall bring quality benefits to millions of farmers, contributing to the SDG 2030.
- Scaling up agricultural innovations takes place in complex systems of agricultural transformation.
- Therefore, sustainable scaling should build into "sustainable change at scale". This calls for cooperation of all involved stakeholders.
- To support sustainable system change, we also need to be open to challenge ourselves and change the way we work.

Within CCAFS, scaling is understood as the set of processes required to go beyond pilot projects, for bringing more quality solutions to millions of farmers in a fast, equitable and lastingly manner. This is especially important in the context of climate variability, climate change and uncertainty about future climate conditions. Experience has shown that scaling innovations can take different pathways and involves a wide range of partners, capacity building, finance, and communications skills. It has also shown that scaling takes place in complex environments and requires institutional support.

In recent years, the CGIAR and partners already achieved a wide range of development outcomes on local, national, regional and global levels. However, uncertainties and open questions with regard to scaling remain. At the occasion of the CCAFS SEA Annual Event in Hanoi 2018, the CGIAR/GIZ Task Force on Scaling organized a Conference on Scaling across the different CGIAR Research Programs (CRPs), to provide a forum

for capitalizing on existing experiences, sharing and learning.

"Interactive Scaling"

70 participants of 34 research, development, farmer, policy and finance organizations shared their perspectives and experiences, actively contributing to the Scaling Conference's aim to understand scaling as a dynamic process that involves a wide range of different stake-holders, pathways, tools and methodologies. Formats featured impulse presentations, panel discussions and multi-stakeholder group works.

The following synthesis reflects the key messages of the Conference's discussions throughout the day. It does not claim completeness of the topic of scaling innovations.

Why is scaling important?

With the call for agricultural transformation, the international development community increasingly focuses on agricultural innovation, with a trend to support new technologies, prototypes and pilots. Still, it is commonly recognized that "the size of the problem does not match the size of the solutions".

"Pilots never fail, pilots never scale!"

Pilot projects are often set up and managed in very controlled environments that do not reflect the reality. They are shielded from many influential forces such as politics and markets. This might work for a small project, where the reward is doing another project. By pilot projects, however, the aim should be to test not only the innovation but also the processes around it for scaling: Which collaboration works best, who will build the

leadership for the push after the project duration, how is the access to market finance, and more. This is also an opportunity: The way you pilot an innovation already influences the chance to reach later scale.

What is meant by scaling?

There is still poor conceptual clarity on what scaling is, which results in a narrow focus on numbers, with the assumption that a certain adoption rate at a defined time, usually the end of the project, will lead to the desired impact, in a sustainable way. But is more always better?

“Sustainable change at scale”

Reaching scale is not automatically sustainability. This concept ignores dropout rates, and the complex environment in which scaling shall take place. The focus on the simple and the visible goes at the expense of the people and the relationships (SNV). To support scaling of an innovation, all relevant actors and entities need to accommodate the change. Therefore, to achieve sustainable impact for many people, scaling should lead to sustainable system change (CIMMYT). A project should be designed in a normal, real life situation. Sustainable change will be “the new normal”, paving the way to sustainable change at scale.

Who is involved in scaling?

We cannot bring innovations to all farmers, and we do not have to – we can collaborate with those people and organizations that have the same vision, the drive and mission to reach scale. These are not necessarily the farmers themselves, but the people with the most reach and influence in our scaling environment. These can be all public or private players, as long they have a comparative advantage in their field. The ideal partner matching brings together people with complementary skills and capacities.

“Work with the right partners in the right way.”

In pilot projects, farmers are often told to adapt an innovation by a strong project leader. In the real world, we have to find the farmers that have aspirations and will be the pioneers, the early adopters. Farmers are also entrepreneurs, no uptake without business incentives.

The private sector, as key actor for scaling low emission innovations along the respective value chains, has two main motivations: Supporting low emission production as a way to highlight their commitment to sustainability, and to mitigate the risks to their own value chains. The CEOs also have little time. When engaging with the private sector or financier, we cannot expect them to “come and sit with us for three months to discuss on how to do things.”

Policy makers will have to be convinced, which can require a lot of time. Communication has an important role, especially in settings where the commitment is

voluntary (vs regulatory). Consensus is a slow and expensive process. Campaigning for scaling is also specific and different from campaigning in public. It needs to adapt to the different languages of the ministries, and also of the sectors.

Donors are not only giving the money, but they are also part of the scaling processes. They influence the design of funding instruments, which in turn influences our chances to achieve scale. E.g., as trend of the last 25 years, the number of donors doubled, the number of projects doubled, while projects' duration and size halved! At the same time, donors, trust funds and financiers influence what is being scaled out, by whom and where, depending on national partners' and investors' interests.



Figure 1. Group picture CCAFS Scaling Conference Hanoi.

How to achieve scale?

Scaling innovations in complex systems brings a full set of systemic challenges, especially when viewed from a national, regional or global perspective. ACIAR, GIZ, FAO and World Bank representatives shared their experiences and discussed key issues put by the audience:

“Systemic challenges for scaling”

- **Focus:** To achieve system change, we need to find the bottlenecks/leverage points. Along the Pareto principle, what is the 20% intervention that could lead to 80% of the impact?
- **Targeting:** The most vulnerable areas and people are not necessarily the ones with conditions and infrastructure that lend themselves for scaling.
- **Coherence:** There are multitudes of frameworks and agendas across the different sectors needed for sustainable scaling. Coverage is mostly limited for the challenge to coordinate efforts among key players.
- **Data:** For monitoring or tracking impact like sustainability or climate change, it is crucial to have aggregate data from the field to the national levels. With the existing national M&E systems, this becomes a big challenge.
- **Competing interests and priorities:** Each part of the system has different interests and priorities. This accounts for ministries as well as for private sector industries and other stakeholders, and can lead to biased design of projects/ programs and influence the implementation.

- **Finance:** Finance is limited. Banks increasingly focus on catalyzing private sector capital. But it is not only about the quantity of money that has to be provided, but also about the quality of how the money is utilized. "Something that has to happen within that system itself that leads to exponential proliferation throughout the system."
- **Continuous learning and innovation:** The environment keeps changing, and systems are highly context-specific. We need to build capacities in our local partners and organizations working on the ground to keep adapting appropriate technologies with nuanced, contextualized approaches.
- **Behavior change:** The need for behavior change accounts for all actors in the system, from the farmers themselves, all actors in the value chains and up to the consumers. We need to question our assumptions critically along each step that we are taking, and reflect upon if they are realistic, given the operating context.

"Good practices and working areas in progress"

The presentation and discussion of CGIAR and partners' scaling projects and initiatives reflected the diversity of technologies and practices, scaling pathways, good practices and challenges on implementation level. One shared take-away from the Conference was that indeed, sharing with small groups of different stakeholders brings new aspects into each initiative. It also triggered an ongoing discussion about where and how to improve:

Translation, packaging and communication

For allowing an innovation to become scalable and an action in the field, the first large investment should go into the translation of the research into a product that is useful for the farmers. One way to decide what and how to scale are "empathic interviews" with the farmers and stakeholders, which seek by active listening to reveal contexts, motivations, and possible incentives. This might also include reframing the product, e.g., emphasizing on food safety instead of "low emission food", and packaging.

Finally, the product needs to be easily understood and usable by farmers, and/or the respective users. Complex research and knowledge shall stay at the "back front", with an easy "forefront" for communication. Also need to adapt the communication to the different languages of the stakeholders and the particularities of users in different countries.

Systematically building partners' capacities

Long-term partnerships are not only crucial for learning and exchange, but also to understand the capacity of the different stakeholders. Workshops and conferences alone will not provide enough information to make impact for the communities. We need to have a clear and systematic approach and invest more in our partners' and farmers'

capacity building, because "we will not save the world by flying around the world as consultants".

Inspiring Initiative: Nong Thon Moi Program

The Vietnamese National Target Program Nong Thon Moi - New Rural Development - aims to scale out countrywide to 9,000 communes. The increased impacts of climate change initiated the MARD to look for additional solutions. After a visit to the CIAT-led Climate Smart Village (CSV) in Ma, Yen Bai Province, the NTM program now aims to incorporate the CCAFS CSV approach into their program. What convinced them to promote this approach?

"The CSV approach uses local tradition and local knowledge. We work with communities in very different contexts. When disaster strikes, they are the first to respond. So communities must be informed, and empowered to use their local knowledge to deal with the situation."

Textbox 1. Nguyen Minh Tien, Director General NTM, sharing his experiences, together with Dr. Le Bui Vinh, CIAT.

Responsible scaling

We do not want to scale at all costs, but also look out for unintended consequences. It might happen that the concepts we want to scale will affect negatively on the intended outcomes, or have unexpected consequences on the livelihoods or environment. This will be even more true for "general applicable solutions". Good practices e.g., related to farmer business planning are tools that allow thorough but simple assessments and calculations. "We must know that the farmers have a chance in the market before we scale up".

Apart from social and environmental aspects, scaling is also about governance. We need to make sure that there is "no regret, no risk, higher income, no added labor, or no other cost." Farmers may hold you accountable for promoting an innovation. In some cases, governments, and also researchers, are even legally liable.

Use tools systematically

Are we using tested and validated tools? There are a number of tools already available, also from other sectors, which are useful for the different actors in the different steps of project planning, design and implementation.

Especially with regard to scaling, the task would not be to develop more tools, but to test and scientifically validate the existing ones. These might also help donors and financiers to more systematically assess scaling proposals.

Tools for Scaling

A number of tools for scaling are already available, or in the process of validation for agricultural innovation:

The Scaling Scan (PPPLab & CIMMYT):

A practical tool to determine the potential to scale, which unpacks the concept of scaling to make it more understandable and actionable. It looks at 10 scaling ingredients to: fully understand what scaling your innovation would require; facilitate an exploration about the challenges scaling your innovation is likely to face and the opportunities it can leverage; identify points of attention that should be addressed in the scaling strategy; and monitor and learn how the scalability of the project changes over time.

More information on <https://ppplab.org/2018/11/3223/> and <https://www.cimmyt.org/scaling-scan-a-simple-tool-for-big-impact/>.

Business Plan Development (promoted by WorldFish), a set of tools including:

- Value Chain Analysis
- Stakeholder Analysis
- Empathic smallholder need assessment
- Competitor Analysis
- CANVAS Business Plan Development
- Gross margin calculations
- Transportation costs
- Microfinance need assessment

More information at: s.uhlenbrock@cgiar.org.

Scaling Readiness (CGIAR Research Program Roots, Tubers and Bananas, RTB)

A decision support system for “how to” achieve higher scalability performance, by creating evidence for making strategic choices on

- What to work on
- On what to invest
- Who to work with
- How to engage with partners

More information at: m.sartas@cgiar.org.

The Adoption & Diffusion Outcome Prediction Tool ADOPT (CSIRO/ACIAR)

An MS Excel-based tool that evaluates and predicts the likely level of adoption and diffusion of specific agricultural technologies and practices, with a particular target population in mind.

- Predict
- Inform
- Engage

More information on: <https://adopt.csiro.au/> and <https://research.csiro.au/software/adopt/>.

Textbox 2: A choice of tools for scaling, introduced at the Scaling Conference in form of a World Café Format.

Science for scaling or science of scaling

Are we using science to inform our scaling strategies? Journals, donors and the research community increasingly recognize the emerging science of scaling. Still, science-informed scaling strategies, like many pilots, may have been developed in a “green-house”, an ideal situation. In reality, scaling is more a learning by doing process, with many trials and errors and continuous improvement along the way. However, opportunities abound to produce science from our scaling work and to contribute to the global, also peer reviewed, knowledge base!

Adaptive management

Experience has shown that in many cases the best outcomes are the unexpected ones. Theories of Change are important tools for reflecting on assumptions, but we need to be open and challenge and question ourselves as we go, based on the actual demand.

Since the context in which projects operate changes continuously, new skills are needed to address the different issues. Are we benefitting from the right people in our team? We need more adaptive employment strategies, to have broader capacities. E.g., people with history in the private or financial sector.

At the same time, when actively driving scaling processes, researchers themselves will change their roles. The more advanced the process, the more likely they will become conveners, brokers, facilitators and advocates.

Are we using efficient and effective management options? Good practices relate to reviewing projects frequently and at the end of each cycle, and fostering communication across projects/programs.

MEAL for scaling

We do not know how to measure the success of scaling as sustainability or system change. A related challenge is balancing the emphasis of outcomes and results against the process orientation. M&E of scaling is different from impact assessments. We also measure too quickly. System change takes time.

Regarding impact, there are trade-offs between indicators of food security, nutrition, poverty, natural resource management and more. In addition, different partners are advancing different indicators. Still, there is lots of unused potential of new formal and informal partnerships with organizations working on the ground and well cognizant of the respective contexts, for thinking together and generating and sharing data and experiences.

We also need partners to help us to measure system change not only in the project, but beyond, in the real world. In a complex system, we cannot trace back all changes to our intervention. We all contribute to the

outcomes. Attribution chokes us! This mindset keeps holding us back. Answers in that area could pull our work in a new direction.

Are we using M&E and Learning (MEAL) systematically as a tool to generate learnings on what works for scaling, and what does not? E.g., how to identify the technologies and practices that have most potential for adoption?

Efficient investment

Not only investors, also farmers need to see a business cases to invest in agricultural innovations. Inclusive business models work with farmers' groups and link farmers to markets, using the market pull for achieving scale along the entire value chain. Micro-finance institutions and community-managed revolving funds can play an important role for business incubation.

Building agricultural literacy in banks and financiers to invest in other areas than cash crops will help to develop rural markets. A good practice is also to bundle different investment areas, e.g., making the business model of climate information start-ups more sustainable by linking to agricultural insurance.

Inspiring Initiative: The AgResults Program

AgResults is a \$147 million multi-donor initiative using pay-for-results prizes to incentivize and reward high impact agricultural innovations that improve outcomes in the sectors Food Security, Health, Nutrition and Livestock. It promotes the adoption and scaling of new technologies by the private sector to benefit smallholder farmers, by a staged testing and scaling process, without initial funding by the project. Competitors whose promising innovation shows good results in the first stages receive a cash prize and may continue in the next, more scaling oriented phase.

Currently, out of 22 companies that set out to increase rice yields by reducing emissions in the Mekong Delta, 9 companies have won the cash prize of 75,000 USD in the third phase.

Why do private sector companies with working innovations still need a cash prize? - "Because it is an incentive that companies overcome market barriers themselves and to accelerate. We need systemic change in the market, not in 5-10 years, but now!"

Text Box 3: Alison Rusinow sharing the AgResults Program supported by SNV and partners.

Also, private public partnerships and government and private sector procurement can be targeted for increasing the impact of finance. Can we support investors on local, national and global level by providing and using data for identifying bottlenecks and efficient investments?

The disruptive element

Uber just forced through the market within months, with global penetration and massive adoption. In agriculture, average adoption takes 10 to 15 years. What might be the disruptive element to speed the super-change?

It might be related to our own mindset. We researchers and implementers are playing only with 0.1% of the gain money, thinking from one project to another. That is only a fraction of what the market finance, private sector or commercial banks could invest. Go out and link! In this aspect, we are still illiterate, and a bit too comfortable. We work with the same people we went to university with. Opportunities lie in working with different companies, communication companies, transport companies – "why don't we work with Uber?!"



Attachment 4

Excerpt from info note:

Scaling agricultural innovations – How to manage institutional change?

Key messages from the CGIAR++ Scaling Workshop, Hanoi 2018

*Jana Koerner, Lennart Woltering, Silke Uhlenbrock, Uwe Ohmstedt, Felix Zeiske,
Murat Sartas, Arne H. Theissen*

OCTOBER 2019

Key messages for institutionalizing scaling

The discussed initiatives are only two of many examples how the CGIAR++ centers currently approach and explore scaling within their structures. The following key messages of the workshop's participants can help the wider R4D community in institutionalizing their scaling efforts:

- Scaling is not an expenditure – it is an investment!

“Scaling needs money, but also attracts money.” Some donors and development initiatives already explicitly fund scalable innovation development, while private sector, investors and government partners look more into massive adoption. However, both need to have evidence to prove that the innovations are worth investing in.

- Be responsive to the multiple demands of users.

“Farmers don't think in silos, so we should not work in silos.” Researchers propose innovations with specific uses, but farmers need innovations that answer their multiple challenges. Therefore, it is crucial to cooperate with multiple disciplines, and to invest in understanding, translating and repackaging the innovations.

- Build management capacity for scaling

“The scaling mindset is different from the research mindset” New leaders will need to be managers, with business perspective and skills. This will require different human resource policies, with other forms of performance evaluation criteria than for traditional research.

- Allow for failures – but document for learning

“Our reality is constantly changing, we need to go with the flow and sometimes step aside to advance.” In dynamic systems, it is difficult to plan long-term processes. Arising

opportunities might imply risking failure at times. Built-in learning loops can help to cope with an uncertain future.

- Learn from the private sector's instinct for business.

“If private sector people see a business case, then there is energy behind, there is money behind; it takes off nearly by itself!” This is because private sector actors are used to assess the demand and potential returns. An example of a CGIAR initiative to support business case development is the ICRISAT Agribusiness and Innovation Platform. Donors increasingly launch calls for projects directly developed in partnerships with the private sector.



Attachment 5

Evaluation form (Adapted from IIRR)

STEP 7 Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Discuss scaling principles and considerations.					
2. Identify opportunities and options within their own context.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

Education Support Materials

(click links to download materials)

Lessons for successful scaling of climate smart agriculture innovations Nov. 21, 2017 By: John Francis Okiror and Laura Cramer (IITA)

<https://ccafs.cgiar.org/blog/lessons-successful-scaling-climate-smart-agriculture-innovations#.Xeh4hpMzblU>

Towards developing scalable climate-smart village models: approach and lessons learnt from pilot research in West Africa

<https://cgspace.cgiar.org/handle/10568/76336>

The World Bank scales up insights from Climate-Smart Villages in Niger

<https://cgspace.cgiar.org/handle/10568/102483>

Scaling-up Climate-Smart Villages in India

<https://cgspace.cgiar.org/handle/10568/67902>

Community Innovation Fund from implementation to scaling out of climate-smart agriculture practices

<https://cgspace.cgiar.org/handle/10568/93152>

Scaling the capacities to adapt to climate change

<https://cgspace.cgiar.org/handle/10568/105717>

Scaling agricultural innovations – How to manage institutional change?

<https://cgspace.cgiar.org/handle/10568/105560>

The why, what, who and how of scaling agricultural innovations: Key messages from the CCAFS SEA and cross-CRP Scaling Conference, Hanoi 2018

<https://cgspace.cgiar.org/handle/10568/99099>

STEP 8. Session Attachments



Attachment 1

Evaluation form (Adapted from IIRR)

Step 8 Evaluation: Participants' Reactions

A. Objectives

1) To what extent did the session achieve its objectives?					2) What factors contributed or hindered the achievement of the objective?
Session Objectives	Completely Successful	Generally Successful	Limited Success	Not Successful	
At the end of this session, participants will have:					
1. Discuss M&E key concepts and principles.					
2. Characterize different M&E tools and methods used by other CSVs.					

B. Content

1) Please identify at least 3 of the most important lessons that you learned from this session.	2) This lesson is important to me because

C. Please rate the Facilitator/Resource Person; Methodologies Used and Materials for each activity in the session using the following rating:

- 1- Not effective/helpful at all
- 2- Fairly effective/helpful
- 3- Effective/helpful
- 4- Very effective/helpful

Encircle the number corresponding to your rating

Sessions and Facilitators	Facilitator/Resource Person	Methodologies Used	Materials
	How effective was the Facilitator/Resource Person in facilitating your learning and sharing of experiences?	How helpful were the methodologies used in the activity in attaining session objectives and in encouraging sharing and synthesis of experiences?	How helpful were the training materials (Audio visuals, learning aids, hand-outs): used in the activity to achieve the session objective?
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4
Session title: Name of speaker:	1 2 3 4	1 2 3 4	1 2 3 4

Education Support Materials

(click links to download materials)

Learning from Change: Issues and Experiences in Participatory Monitoring and Evaluation
<https://www.idrc.ca/en/book/learning-change-issues-and-experiences-participatory-monitoring-and-evaluation>

Activity report: CSV Monitoring and Evaluation Plan
<https://cgspace.cgiar.org/handle/10568/100233>

Key informant analysis for climate smart agriculture practices in Tra Hat Village, Vietnam
<https://cgspace.cgiar.org/handle/10568/103814>

Farmers' own assessment of climate smart agriculture: Insights from Ma village in Vietnam
<https://cgspace.cgiar.org/handle/10568/90628>

Participatory prioritization of climate-smart agriculture techniques: Case study of processes and outcomes from the Tra Hat Climate-Smart Village in Vietnam
<https://cgspace.cgiar.org/handle/10568/103815>

Participatory Evaluation of Resilient Potato Varieties in Climate-Smart Villages of Lushoto in Tanzania
<https://cgspace.cgiar.org/handle/10568/79454>

BLOGS

Climate Risk Management Special Issue: Highlights approaches to making climate services more effective for smallholder farmers

Jan. 16, 2019 By: James Hansen (CCAFS/IRI)

<https://ccafs.cgiar.org/blog/climate-risk-management-special-issue-highlights-approaches-making-climate-services-more#.Xeh5lZMzbIU>

Holding on to water through climate smart agriculture

<https://ccafs.cgiar.org/blog/holding-water-through-climate-smart-agriculture#.Xeh335MzbIU>

Moving closer to achieving climate smart future for Southeast Asia

Dec. 6, 2017 By: Nguyen Thu Hang (Viet Nam News)

<https://ccafs.cgiar.org/blog/moving-closer-achieving-climate-smart-future-southeast-asia#.Xeh4JpMzbIU>

Monitoring CSA performance and outcomes in the Climate Smart Villages: Ready... set, go!

Nov. 23, 2017 By: Osana Bonilla Findji (CCAFS), Mathieu Ouédraorgo (CCAFS), Anton Eitzinger (CIAT), Nadine Andrieu (CIAT/CIRAD)

<https://ccafs.cgiar.org/blog/monitoring-csa-performance-and-outcomes-climate-smart-villages-ready%E2%80%A6-set-go#.Xeh4KpMzbIU>

Lessons for successful scaling of climate smart agriculture innovations

Nov. 21, 2017 By: John Francis Okiror and Laura Cramer (IITA)

<https://ccafs.cgiar.org/blog/lessons-successful-scaling-climate-smart-agriculture-innovations#.Xeh4hpMzbIU>

Unlocking Myanmar's potential for establishing Climate Smart Villages

Oct. 13, 2017 By: Camille Anne Mendizabal (World Agroforestry Centre)

<https://ccafs.cgiar.org/blog/unlocking-myanmar%E2%80%99s-potential-establishing-climate-smart-villages#.Xeh4tJMzbIU>

The art of adaptation: Engaging youth with climate smart solutions

Aug. 18, 2017 By: Abigail Smith (World Agroforestry Centre (ICRAF))

<https://ccafs.cgiar.org/blog/art-adaptation-engaging-youth-climate-smart-solutions#.Xeh425MzbIU>

Info notes for planners, policy makers, and extension agents



Excerpt from info note: Supporting local actions for Climate-Resilient Agriculture: The AMIA Experience **IIRR, FAO, DA (2019)**

Key lessons from the AMIA Program implementation

1. Using the AMIA village approach

Addressing climate risks needs a systems approach and a sustainability mindset. The AMIA program takes the landscape approach and has established and sustained 21 AMIA villages across the country. The villages were selected based on the level of vulnerability to climate risks, the capacity of the community to adapt to climate change through the various interventions, and the capacity of the local institutions to provide support services. The AMIA village serve as local platforms for action research and

Color-coded maps, commodity specific risk projections, and region-wide CRVA outputs are available. These could serve as basis for planning our interventions with LGUs and farmers. But given the technical requirement for using such products, these efforts require technical backstopping and technical guidance. The challenge is to be able to make these methodologies usable in the DA through its banner programs, and in the LGUs. Developing the capacity of the DA and the LGU to continuously implement and develop these methodologies should be part of a sustainability program

scaling of adaptation approaches. An AMIA villages is both a laboratory and a showcase of learning and outcomes on climate change adaptation and food security improvement. It is not solely a demonstration of the most laudable CRA technologies and practices, but a location where learning, and sharing of lessons happen. Through this iteration of the learning process, the AMIA village concept and practices are brought to scale.

The implementation of CRA technologies and practices and provision of support systems in each village are being coordinated by a DA-RFO through the local government unit (LGU).

2. Addressing uniqueness of local context

The level of vulnerabilities and risks differ from one village to another. Each village takes its own holistic approach, and relevant interventions are appropriately targeted based on the village's context. In the 'business-as-usual' scenario, technologies (such as climate risks-tolerant

crops) or practices (such as soil and water conservation practices) were introduced, but more often than not other interdependencies, such as traditional farmer knowledge, markets, financing, institutions, and policies were not looked at during implementation. Those interdependencies were taken into consideration in an AMIA village.

The common diversified systems introduced in the AMIA villages are crop rotation, alternate cropping, crop–livestock/poultry–fishery integration, and agroforestry in the uplands. These systems provide livelihood diversification, hence alternative livelihood sources in case of crop failure due to climate-related calamities. The most common alternative livelihood in the AMIA villages is native pig production. Some AMIA villages have also developed agri-enterprises to increase income, such as coffee production (CAR); beekeeping and soybean production (Region I – Ilocos); and corn cob charcoal briquetting, soybean processing, and ube powder processing (Region IVA-CALABARZON).

3. Understanding vulnerability at different scale levels

Various tools and methodologies have been developed, through partnerships with other research and development programs and institutions, to assess and understand climate risk vulnerabilities. At the national level, the National Color-Coded Agricultural Guide Map provides commodity specific risk projections. The Climate Risk Vulnerability Assessment (CRVA) tool, which was developed by CIAT and CCAFS and implemented by state colleges and universities, was used to identify priority vulnerable areas within a region where CRA technologies and practices are tested and/or implemented. At the community level, location-specific impacts and appropriate interventions were identified through participatory approaches.

At local (municipal and community) levels, there are simple ways to help farmers and extension agents understand location-specific risks and vulnerabilities and objectively find ways to address it.

4. Understanding different aspects of and the importance of diversification

A stable and resilient system is complex and diverse; hence diversification is a cross-cutting strategy in the management of the impacts of climate change in agriculture. At least two forms of diversification exist in an AMIA village -- commodity diversification and livelihood diversification. Benefits from farm level diversification includes low incidence of pests and diseases, maximized use of arable areas, reduced soil erosion, enhanced soil fertility and condition, reduced risk of market failure when some crops got damaged, and overall increase in agricultural productivity. In addition, diversification provides a variety of available food, which is important in terms of improving human nutrition.

Given the importance of diversification in adapting to climate risks and resilience building, this strategy should be made explicit in the implementation of the commodity programs of the DA. The DA-RFO-X (Northern Mindanao) has already demonstrated interface between the AMIA program and the Corn and Cassava Banner Program implemented in their respective region.

5. Implementing best-bet CRA technologies and practices with the farmers

There are already available, mature, and scalable technologies and practices that are being implemented on the ground. Most of these technologies are already highlighted in the banner programs of the DA. These include planting of drought tolerant varieties, planting of rice varieties that can withstand long period of submergence, organic farming, agroforestry system, alternate wetting-and-drying technology to optimize use of irrigation water in rice production and reduce greenhouse gas emission, sloping agricultural land technology (SALT), rainwater harvesting, and agricultural mechanization, to name a few. These interventions are being tested and implemented by the farmers in their field.

Farming communities are inherently innovative and are eager to try new technologies and practices, especially when faced with adverse conditions. This gives a potential

to enhance research output utilization. This requires working with LGUs and the agriculture extension system, and developing their capacities to provide mechanisms in sharing these research outputs to the farming communities.

The promotion of a CRA technology or practice should also take into consideration the market potential of the commodity. Aside from having the potential to survive the climate challenges, the commodity should also have the potential to generate livelihood and increase farmers' income. Competitiveness, productivity, sustainability all directly or indirectly contribute to resilience.

There are enough experiences on the ground from both AMIA and the regular DA commodity programs to provide basis for mainstreaming CRA within DA system. Those tasked to mainstream CRA in the national level is the SWCCO team, and at the regional level, the focal persons.

6. Capacitating farmers to implement CRA technologies and practices

The immediate goal of the AMIA Village approach is for farmers to fully appreciate and practice climate resilient approaches in agri-fisheries. This learning process is facilitated by a formation of a learning alliance. The Guinayangan village (Region IVA-CALABARZON) has farmer learning groups, composed of 10 to 12 farmers who participate in the field testing of selected CRA technologies and practices. Farmers meet once a month to share experiences among themselves. Learning and knowledge emanate from these shared experiences. Members of these learning groups become capacitated to support local extension workers to accelerate adaptation of technologies and practices.

In some regions of the country, farmer learning groups were transformed into organized groups, such as associations and cooperatives. In Region III (Central Luzon), farmer field school participants became members of organized registered cooperatives. This set up allows them to access more interventions and support from the government.

7. Investing in systems and mechanisms to facilitate community adaptation and create an enabling environment

Creating an enabling environment helps farmers become more competitive, hence build their resiliency to climate risks. In an AMIA village, farming and fishing communities receive strong support from the LGU. They serve as the conduit of services for creating facilities, and of support provision to accelerate agricultural production. Examples of these are community seed bank (e.g., Community Seed Bank of Cagbunga Riverside Farmers Organization in Pamplona), and crop insurance (Region VI – Western Visayas). These two support systems are also part of the disaster risks reduction program of the government.

A community innovation fund to support and encourage smallholder farmers to field test innovations on their farms was started in Guinayangan village. The fund also covers opportunity costs to farmers. The innovation fund was also used to build community support facilities, such as community animal breeding facility, seedling nurseries, coffee processing facility, among others.

8. Sustaining and operationalizing CRA technologies and approaches

There are already a number of methodologies, tools, models, and systems that have been developed within the AMIA program. The National Color-Coded Agricultural Guide Map, commodity specific risk projections, region-wide CRVA outputs, participatory risks and vulnerability assessment, and climate information service to farmers could already be used as bases for planning interventions with the local government units and the farmers. How these are sustained and operationalized within the DA and the LGUs should be given utmost attention. A usability assessment of these toolkits would be useful to kickstart the planning for their operationalization.

Part of sustaining the CRA is the increasing investments on infrastructures and mechanization to enhance the community's adaptive capacity. Some AMIA villages have invested on automated weather stations, solar powered irrigation system, and drip irrigation system. The DA-RFO-V (Bicol) has invested in infrastructure development, such as building of dikes to avert storm surge and massive inundation in their rice fields.

9. Developing capacities for sustainability

Developing the capacities of both the farmers and the agricultural officers to use CRA technologies is as important as the development of the product. However, the extension system was considered to be below the required capacity level in terms of number and in terms of technical understanding. This was found to be crucial and a common challenge among the AMIA villages.

In the development of climate information service to farmers, capacities of the DA-RFOs and LGUs to generate, interpret and deliver useful climate information need to be developed further. This delivery of climate information service to farmers requires collaboration with the banner programs for the formulation of advisories, and with the Agricultural Training Institute for the development of training programs.

The DA-RFO-V (Bicol) AMIA team members are currently serving as the resource persons for the development of climate information service to farmers in other DA-RFOs. They have already come up with a manual, which will be published by the Bureau of Agricultural Research for wider circulation.

10. Establishing and maintaining partnerships

At the center of AMIA's partnership network is the local government unit (LGU). It has the most direct reach to farmers, and it serves as a conduit of support and services from other levels of government to the farmers. The critical issue is if this mandate of the LGU is appropriately supported by the DA.

Private sector and other institutions should also be well placed in the network of linkages, especially if building resiliency also involved establishing linkages to market and to other nodes in the commodity value chain. Partnerships should be clearly identified and defined.

We are reminded though that the mandate of reaching to farmers is still a mandate for LGUs because of devolution. This includes helping farmers understand risks and vulnerabilities. So what do we need to do to contribute to LGUs delivering this mandate?

11. Mainstreaming gender

Women and men differ with regard to their respective perceptions of and reactions to climate change and extreme climate variability. Within a community, women are disproportionately at risk. Climate change aggravate gender inequality through increase unpaid work and increased vulnerability. Understanding these varying levels of vulnerabilities can lead to the development of appropriate approaches and technologies that addresses gender-related issues. There should be an in-depth analysis and understanding of the opportunities and constraints of women in accessing and controlling resources and services using gender disaggregated data, gender-sensitive data collection, gender-sensitive M&E indicators, and gender-equitable budgeting. In addition, there should also be an understanding of the cultural and social stereotypes and restrictions of women in a particular community.

12. Identifying champions

All these interventions can be successfully implemented with the help of champions. Champions help drive efforts, such as advocacy, and establishing linkages to policy and investments. In the course of the implementation of the AMIA Program, some champions have already been identified. At the LGU level, the local chief executives of Guinayangan, Quezon, and Pamplona, Camarines Sur have already showed support to the sustainability of the program by incorporating climate resilient agriculture approaches in their government programs. At the DA-RFO level, staff at the directorate level from DA-RFO-II, DA-RFO-IVA, DA-RFO-V, and DA-RFO-VI, have shown full support to the program by engaging other existing DA programs in the implementation and by providing additional investments.

Conclusion

The Philippine Department of Agriculture implemented the AMIA program since 2013 to enable the small agriculture and fisheries communities to adapt to the challenges of climate change and sustain their livelihoods. To do this, the AMIA program established 21 AMIA villages across the country to implement CRA tools and practices with the

farmers according to the village's context. The AMIA villages were selected based on modeling tools and participatory approaches. These villages were considered vulnerable to climate crises.

Aside from CRA tools and practices, other interventions such as seed bank, crop insurance, development of climate resilient infrastructure, support to mechanization, establishment of irrigation and water saving facilities, access to credit, among others, were implemented in the village through the DA-SWCCO, the DA-RFOs, the LGUs, and other program partners.

The AMIA village is more than a demonstration of CRA tools and practices on the ground. It is a 'go-to' place for learning. Farmer-to-farmer learning is facilitated within a village. Farmers share their experiences among their learning group to continuously improve their practices. They also serve as resource persons during field days. This supplements the seemingly low capacity of the extension system to facilitate knowledge delivery and sharing.

There are already a number of lessons and outcome stories that can be documented from the AMIA village experience, which would inform the DA community about the relevance of the AMIA program to the overall resilience building agenda in the DA.

Addressing climate issues needs a systems approach and a sustainability mindset. There is an interdependence and interactivity among various factors (physical and social). Interventions should take into consideration cause-and-effect and long-term value and impact.

There are enough experiences on the ground to serve as basis for mainstreaming CRA within the DA system. Those tasked to mainstream CRA at the national level is the SWCCO team, and at the regional level, the focal persons. Mainstreaming must start with sensitizing colleagues within the department at different levels about CRA, the AMIA program to realize that CRA & AMIA are integral and can contribute to DA's regular program. This will require orientation about CRA, AMIA and mainstreaming processes. CRA mainstreaming is a mandate of everyone in DA. CRA mainstreaming is still towards the goal of increasing the resiliency of the agriculture sector. An is immediate task to mainstream CRA within respective RFOs.

The Department of Agriculture (DA) should consider inculcating climate resilience in its plans, operations, and programs. Mainstreaming climate resilience requires a paradigm shift. Top-down directives to implement those changes must be influenced and supported by learning and outcome stories from the ground.



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PATHWAYS TO ATTAINING A FOOD SECURE PHILIPPINES THROUGH A COMPETITIVE AND CLIMATE-RESILIENT AGRI-FISHERIES SECTOR

November 2019

In the Philippines, the effects of climate change are felt hardest by poor smallholder farmers and fisherfolk. To help alleviate their situation, the Department of Agriculture (DA) developed the Adaptation and Mitigation Initiative in Agriculture (AMIA) Program in 2014. Managed by the Systems-Wide Climate Change Office (SWCCO), the program identified, tested, and promoted climate resilient agriculture (CRA) technologies and approaches, with the ultimate goal of mainstreaming climate resilience within DA.

Almost six years into the program, SWCCO and DA Regional Field Offices (DA-RFOs) have drawn initial sets of lessons and insights from the AMIA villages established across the Philippines. In November 2019, as DA observes the Climate Change Consciousness

Week, SWCCO and the DA-RFOs are poised to bring understanding within the DA system the value of programming for resilience, the relevance of CRA, and the need for mainstreaming, scaling, and sustainability at local levels.

This document highlights the key messages drawn from climate adaptation efforts and events done with DA-RFOs across the country. This brief, developed for the Climate Change Consciousness Week, offers DA a synthesis of lessons from the AMIA village experience as a bankable model for establishing context-specific, local adaptation platforms for developing and disseminating CRA technologies and processes. This brief also offers valuable policy insights for the Philippines' National Adaptation Plan.

1

Support local platforms for Climate Resilient Agriculture as foundations for resilient agriculture and fisheries

- Climate Resilient Agriculture (CRA) is the Department of Agriculture's approach to building climate resilient livelihood and communities.
- CRA a) increases agriculture productivity and income in a sustainable and environmentally-sound manner; b) builds the capacity of households and food systems to adapt to climate change; and c) reduces greenhouse gas emissions and increase carbon sequestration.
- DA implemented the Adaptation and Mitigation Initiative in Agriculture (AMIA) Program in 2014 to respond to the local challenges of climate change in the agriculture and fisheries communities. It was implemented in phases:
 - » AMIA 1 (2014) strengthened the capacity of DA to mainstream climate change adaptation at the strategic and operational levels. The National Color-Coded Agriculture Guide (NACCAG) Map was developed and launched in 2017 to inform the decision of farmers on crop management practices that are suitable and appropriate at a given location. The map shows naturally suitable areas for 20 priority crops and it also features eight climate hazards. (To access the map, go to <http://www.farmersguidemap.gov.ph>)
 - » AMIA 2 (2016) implemented and evaluated CRA technologies and practices in targeted areas.

Climate-risk vulnerability assessment was done to identify hazards in a given area and serve as basis for suitable CRA options.

- 21 AMIA Villages were established across the Philippines. These were selected based on level of climate risk vulnerability, the capacity of the community to adapt to climate change, and the capacity of the local institutions to provide support services.
- AMIA villages are lighthouses that serve as learning and dissemination sites of the most relevant CRA technologies and practices. Through this iteration of the learning process, the AMIA village concept and practices are brought to scale.

2

Pursue sustainable and competitive livelihoods while effectively managing climate and environment risks through promotion of adaptation strategies

- DA and its partners have developed tools and methodologies that assess climate risk vulnerabilities. These can be readily used for objective programming at various levels of DA's banner programs. (For more information, visit www.ciatph.github.io)
- DA is implementing an extensive number of available, mature, and scalable CRA technologies and practices on the ground, with AMIA villages as models. (See www.swcco.da.gov.ph)
- In promoting CRA technologies and practices, market potential and increase in income must be taken into consideration.
- Adaptation strategies facilitated on the ground: agricultural diversification; climate resilient crops; sustainable mechanization; enterprise development; climate information services; agricultural financial services; learning platform; farmers database; and soil and water management.

3

Review and re-orient existing DA programs to facilitate greater access of farming and fishing communities to adaptation strategies

- Agriculture and Fisheries Modernization Plan (AFMP) realized: CRA is crucial to agriculture and fisheries modernization, which aims to increase the resilience of agri-fishery communities.
- Mainstreaming CRA: Climate resilience, sustainability, and productivity have to be integrated in regular DA programs, plans, operations, and investments. Competitiveness and profitability should link with resilience.
- Paradigm shift: Mainstreaming climate resilience in DA requires a paradigm shift that deviates from "business-as-usual" approaches. Lessons and evidences from the field must support top-down directives.
- Role of champions: Champions drive efforts to sustain and scale up adaptation work on the ground and establish linkages to policy and investments.

4

Empower women to take advantage of opportunities presented by Climate Resilient Agriculture

- Climate change has differential effects on men and women that aggravate gender inequality. 35% of Filipinas involved in agriculture are unpaid (PIDS, 2018). Their plight are largely due to traditions and norms that limit their abilities and participation in agriculture.
- Gender disaggregated data, gender-sensitive data collection, monitoring and evaluation indicators,

and gender-equitable budgeting bring targeted attention to women in agriculture.

- An in-depth analysis of opportunities and constraints of women in accessing and controlling resources and services is needed to develop appropriate approaches and technologies that address gender-related issues.
- There are emerging agricultural technologies that are favorable to women. Examples of these are backyard gardening, small livestock production, weeder, transplanter, and seeder.

5

Increasing support for capacity building and local extension to harness potential of agri-fishery communities to adapt and innovate towards resilience building

- Provide opportunities to capacitate agri-fishery communities in testing and innovating practices that enhance resilience and competitiveness.
- Improve local agricultural extension mechanisms for farmers and fisherfolk to utilize research outputs on Climate Resilient Agriculture.
- Consider the inherent adaptation mechanisms and traditional practices of farmers when promoting new technologies and practices.
- The Department of Agriculture's Agricultural Training Institute uses the Climate Resilience Field School Model to educate local extension workers, farmers, and fisherfolk how to practice resilient agricultural methods.

6

Maximize the unique opportunities presented by LGUs in delivering Climate Resilient Agriculture at the community level while fostering strategic local partnerships

- The Department of Agriculture (DA) and Local Government Units (LGUs) have a shared responsibility of delivering agricultural services to farmers and fisherfolk.
- LGUs have unique capacities to mobilize human and financial resources to deliver CRA down to grassroots level. DA can formulate and operationalize national agriculture programs and projects, provide capacity building support, and develop platforms for LGUs to deliver this mandate.
- The AMIA village is a good model of a local platform for partnerships in pursuing climate resilience in agriculture and fisheries.

7

Capitalize on private sector contribution to sustain and scale out Climate Resilient Agriculture through enhanced services provision, financing, and value chain support

- Sustaining CRA requires increased investments in infrastructure (i.e. irrigation, farm to market roads, marketing facilities), mechanization, local seed systems, agricultural credit, and crop insurance.
- CRA should be financially beneficial to agri-fishery communities in the long run by reducing production cost and enhancing the resilience of existing, well-established community value chains.
- The local private sector ensures that agri-fishery communities have assured supply of agricultural inputs and services, fair trade prices, better access to markets, and services to support CRA practices.

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Info Note

Addressing gender-based impacts of climate change

A case study of Guinayangan, Philippines

Magnolia Rosimo, Julian Gonsalves, Johanna Gammelgaard, Rene Vidallo, Emilita Oro

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Key messages

- Understanding vulnerabilities through the conduct of participatory vulnerability assessments can lead to the development of approaches and technologies that addresses gender issues.
- Woman farmers face the impacts of climate change differently from men. This includes taking over additional and heavier agricultural tasks and becoming more indebted when coping with increasing crops failures or extreme weather events.
- Small livestock systems, a climate-smart agriculture practice, present a less risk-prone livelihood venture. It can feature as a diversification agenda, reducing the risks from crop failure and are relevant to all ecosystems.
- Small livestock initiatives can benefit women as it provides them with a low-labor and manageable economic option, which requires a small startup investment.

The Municipality of Guinayangan and risks of climate change

Climate change exacerbates poverty and affects food and nutrition security, threatening various sectors in the world. Among those vulnerable sectors, agriculture is expected to bear the brunt of climate change impacts because it heavily relies on agro-ecosystems for productivity. Consequently, this will directly hit the livelihoods, food security, and nutrition of rural poor households because they lack the capacity to recover even from a single cataclysmic weather event. Aside from the households, the impacts of climate change extend to the ecosystems, affecting interspecies dynamics, movement of range, altered abundance, and shift in seasonal activities.

Guinayangan, a municipality in Quezon Province, Philippines, covers a land area of 22,800 hectares, comprising 54 *barangays*. From the total population of over 40,000 settling in almost 9,000 households, half are living below the monthly per capita poverty threshold of PHP 1,403 (approximately USD 33).

The climate in the area falls under Type IV Category (as classified by CORONAS) where rainfall is evenly distributed throughout the entire year. Under climate change conditions, Guinayangan is considered a vulnerable community, with more than two thirds of its total land area devoted to agricultural production. For instance, in the recent years, the municipality already experienced longer dry seasons. The locals reported that typhoons are now coming more frequently than before.

Aside from stronger typhoons and prolonged droughts, Guinayangan is vulnerable to storm surges and rising sea levels in the future. These climate-related impacts are believed to be brought by increasing unpredictability of onset of dry and wet seasons, prolonged dry spells, and strong typhoons. Crop failures occurred due to the lack of soil moisture—an important component to protect the crop during its vegetative stage. Even coconut production was observed to be suffering from prolonged dry spells as the nuts produced during the dry months are smaller than expected. With the majority of the town's farmers practicing monocropping, food and livelihood insecurity declines during such times. During their free time, male members of the households look for jobs in nearby urban areas such as Laguna and Manila.

These evidences on the ground prove that climate change poses a real threat to Guinayangan, impacting farmers—both men and women—in different ways. A significant body of literature on gender and climate change shows that women and men perceive and

experience climate change differently, with the women being more vulnerable due to their roles in diversifying livelihood systems, to their dependence on natural resources, and to the structural inequity in the access to and control of such resources (Dankelman 2010; FAO 2011). Despite their vulnerability, women can still act as proactive agents of climate change adaptation.

Livelihoods in Guinayangan and division of labor

Most of the residents of Guinayangan depend on rice and coconut production for their livelihoods. They also grow crops such as banana, corn, peanuts, ginger and eggplants, but coconut production provides the largest share of income to many farm-based families.

The traditional process of coconut production, which yields copra (desiccated coconut) as the main product and provides the farmers liquid cash, lasts for a year and is generally termed as *pagkokopra* or *paglulukad*. Mature coconut is normally harvested every 45 days. Tenancy arrangement in coconut production typically relies on 40:60 to 30:70 profit sharing, where the bigger share goes to the landowner and the rest goes to the tenants or laborers. The laborers, locally called as *maglulukad*, are usually smallholder farmers and tenants. They usually work as a group and move to different coconut areas in what is considered as regular employment.

Locals identified at least 14 activities in the value chain. Generally, men are more involved in the production activities, especially those that require physical strength such as harvesting or polling, collecting, removing of husk, preparing the kiln for smoking, and weighing and loading of the byproduct. Although women are active in all activities, their major roles are directed to shelling, cooking, and managing income.

Many are also engaged in rice production. Most rice areas are rainfed and have one cropping season, while those with access to irrigation have two cropping seasons. Labor is not paid in cash but on the sharing basis called, *talok-ani* system, wherein 20% of the production goes to the laborer while the 80% of it is collected by the landowner.

The division of labor in rice farming depends on the nature of the work. In general, men act on a more prominent role in performing physically demanding work. In this regard, seed selection and securing rice field from pests are done by women. Land preparation is tasked to men. Fertilization and spraying, which could possibly require handling of 16-liter chemical sprayers, is performed by men although some people claim that a few women also take this task. Seed bed preparation and transplanting are divided equally between men and women. Afterwards, women perform most of the weeding

work. Harvesting operations are shared between men and women, unless it is automated or manual threshing where only men do the job. Manual drying and milling are again undertaken by both men and women. During post-harvest, women are the ones managing income from rice.

Farmers in Guinayangan also raise livestock, where large ruminant livestock are assigned to men who graze cows and carabaos, while women tend to small livestock such as pig production. The lack of investment capital keeps pig production to a small section of the wealthier families in the communities. Income from small livestock accrues to women who have control over how that income stream is utilized.

Access to capital

In terms of loans, 63% are secured by women while only 19% are by men. Access to lending is an important mechanism for women to cope with climate change. When they cannot access loans in banks and in other lending institutions, women take loans through several informal channels such as neighbors, microfinance institutions, copra buyers, and cooperatives. They also get loans from their husbands' connections since most men have wide networks of informal loan providers. While women access more capital than men, the ownership of livelihood assets is still skewed towards men.

Another coping mechanism for households is for men to look for temporary jobs outside their communities. This leaves the women to tend to the farms and homes, which burdens them as they must take on the roles of men on the farms. The "feminization" of agriculture, wherein women take on more of the traditional roles of men in farming, is noted after an adverse, extreme climate event such as long dry seasons and crop failure. The lack of timely or adequate levels of rain has resulted in the abandonment of rice areas in parts of the municipality. In other areas, households already shifted to corn-based systems, where women take on a relatively reduced role. The restoration of mung beans—where women have a bigger role—in farming systems is also noted under reduced rainfall conditions.

Differences in the division of labor between men and women are distinct in terms of maintaining livelihoods in Guinayangan. As a result, the impacts of climate change are and will also affect men and women differently. The main differentiated effects are the "feminization" of agriculture. With increased risks of crop failures and unstable incomes, men are inclined to seek off-farm work, which then forces women to take on more agricultural tasks. This situation leaves them with less time for their traditional tasks such as cooking, cleaning, and raising children, potentially compromising these essential livelihood responsibilities. It also forces them to borrow more capital, relegating them to more debt in the future.

Climate change impacts on women and climate-smart agriculture: The case of Arbismen

The case of Barangay Arbismen showed that a better understanding of context and vulnerabilities can help in the design of climate-smart agriculture (CSA) activities, which will support local communities to adapt to the risks and impacts of extreme weather events. The case discussed below provides insights into how CSA can lead to better adaptation measures by communities. It also exhibits how issues of equity and economic empowerment of women can be addressed.

IIRR decided to test CSA approaches that were uniquely relevant to woman roles in farming systems. Starting with six farmers (five women and one man), the project introduced and tested low-external-input, low-carbon foot print approaches to pig production in Arbismen. This approach featured native pig breeds known to tolerate temperature rises and extreme weather events (e.g. rains, typhoons) and housing that featured cross ventilation and non-metal roofs. When raised in housing made of natural materials, the temperatures can be lowered in the pig pens (open sides permitting aeration and roofs made of natural materials). Flooring included bedding made of rice husk to improve sanitation and hygiene and better manage wastes.

Each farmer was given two gilts (young, female pigs) and commercial feed provision enough for the first month. The suggested model was to feed the gilts with commercial feeds for only one month. Subsequently, farmers would rely on alternative feeds such as sweet potato, taro, banana, rice bran, coconut and byproducts. The project's investment was a mere PHP 11,300 (around USD 250).

The purpose of the testing was to show that swine production can be a low-cost investment relevant to the poor, especially women. This reflected IIRR's advocacy for social group targeting, keeping in mind a socially inclusive development agenda for CSA. Starting with a small group of farmers engaged in action research-oriented intervention (i.e., learning by doing, establishing evidence, and using these models for advocacy), the program has grown within Arbismen and has now spread to neighboring villages, primarily engaging women in a livelihood activity that they control.

The practice of low-external-input pig production has drawn wide interest, with the number of women increasing to 74 farmers, and just expanded to five more villages in a two-year time frame. Through the Department of Agriculture, its national network of climate-smart villages (i.e., AMIA villages), and partly, as a result of the visit of representatives to pig production and breeding centers in Guinayangan Quezon, this low-carbon foot print approach of producing safe and protein-

rich food is now widely adopted. These participants were also brought to the National Swine and Poultry Research Station in Tiaong, Quezon where they were able to study the scientific evidence for such alternative systems of climate-smart approaches.

Economic empowerment of farm households, especially women

Growing native pigs has proven to be reliable due to their tolerance to changing climate conditions. They have higher survival rates compared to commercial breeds. A litter can be sold for PHP 2,000 while a fully grown (i.e., 3–4 months) native pig can be sold at PHP 100-120 per kilo at live weight. If they are butchered, they can go as high as PHP 180; if processed into *lechon*, they can generate PHP 200 per kilo. Farmers claim that compared to other sources of income, they find this to be the most worthwhile as it generates the most income from a small investment. As their assets are supplemented and savings are increased, households have more disposable income that they can use, not only to support everyday expenses, but also to purchase non-essential needs. The swine are an asset and an emergency source of funds. Women reported that they were able to acquire school supplies and meet other needs of their children through the sale of livestock.

Food Security: Safe and healthy food

Native pigs also offer safe and nutritious food with its high-protein content. As native pigs are more resilient to changing climate conditions, it provides reliable source of food for families. The crops in the feed gardens such as sweet potato, cassava, and taro can also become household food in times of emergency. No antibiotics or hormones are used. Native pig production does not entail taking loans or credit. The potential of pigs to produce large litters at a time also provides increased assurance that families will consume at least some of this produce.

Woman-friendly and empowering

During a mid-year assessment of CSA options conducted by the IIRR field team, swine raising is now regarded as a livelihood of women. Raising commercial pigs in the village was previously managed by men. However, women are now more involved in the management (i.e., 70% of total time in managing the livestock is assigned to women). As a result, they now have a say on how to spend the income from this livelihood. Women are inclined to spend the associated income on children's education, food, and medical expenses. Many of them claim that they can now afford to serve *lechon*, a roasted pork delicacy normally served only during special occasions (and usually associated with rich households), "enhancing" their social status.

Farmer Learning Groups (FLGs) provide the beneficiaries with a platform for knowledge exchange. The FLGs are designed to bring together the beneficiaries and creates a sense of belonging to a community for the farmers by giving them a platform to help one another. The women's participation in the pig production learning group (20 out of 34 of the Arbismen FLG members are women) has increased their confidence and self-worth. The platform of the FLG gives an opportunity to share their experiences in managing their swine and collectively analyze issues in management. In addition, the Arbismen FLG has been able to reach out to more than 15 women in their own village and to more than 10 women in other villages. In the FLG, challenges are overcome together. The research support component (i.e., participatory action research) means that methods adapted to the local conditions of farmers are producing the finest quality pigs for market, at a lower cost and in an environmentally sound manner.

Mitigation: Towards low carbon foot print approaches

Farmers claim that raising native pigs is cheaper compared to commercial pig productions. This is due to the native pig's reliance on locally grown feeds. It can be fed with vegetables and root crops grown in the backyard. This led the farmers to stop buying commercial feeds, contributing to a lower carbon footprint. Native pigs are also resilient to diseases and harsh weather condition. They seldom get sick, saving the farmer from buying antibiotics and other medicines. All these attributes prove that this approach to pig production is climate-smart.

Conclusions

Woman farmers face the impacts of climate change differently from men. This includes taking over additional, heavier agricultural tasks, which could compromise their livelihood responsibilities at household levels. Women also risks becoming more indebted when coping with increasing crops failures or extreme weather events induced by climate change.

Climate-smart agriculture, which features small livestock, highlights the role of livestock in farming systems. In an economy dominated by vulnerable crops, small livestock presents as a less risk-prone livelihood venture. Small livestock can feature as a diversification agenda, reducing the risks from crop failure and are relevant to all ecosystems (i.e., coastal, lowland, and upland, serving food security, nutrition, livelihood, and asset-building objectives). An emphasis on small livestock fosters opportunities for integrating crops, trees and livestock in a closed loop nutrient cycle. What is interesting about small livestock systems as a CSA practice is that it increases gender balance in facing climate change.

The case of native pig cultivation in Arbismen showcases to the CSA community new opportunities in addressing

issues of inequities and disempowerment associated with previous technological interventions, which disproportionately favored the better-off people in the society. Small livestock initiatives as shown here can benefit women as it provides them with a low-labor and manageable economic option, which requires a small startup investment. Small livestock activities can empower women, the landless, and near landless, addressing income inequities. Small livestock gets women on the incremental adaptation ladder, helping them grow their capacities to cope with climate change and providing a new space for economic empowerment.

Understanding vulnerabilities through the conduct of participatory vulnerability assessments can lead to the development of approaches and technologies that addresses gender issues. Better social group targeting ensures that social inclusiveness goals are also achieved. Community engagement in the process of participatory action research can help local communities build their capacities, reduce the risks of maladaptation, and help them better address climate change.

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Info Note

Equity, empowerment and gender relations

A literature review of special relevance for climate-smart agriculture programming

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Key messages

- A wider and more equitable gender sensitivity is now seen amongst policy makers and local government, with a corresponding enhanced and out-scaled uptake on CSA.
- The issue of how climate-smart agriculture can advance equity and empowerment of women and their inclusion in disaster and climate adaptation programs could be addressed via community-level research studies (i.e., the engagement of farm women in the design, management, and implementation of enterprises in homesteads and family farms).
- The increased control of production assets by women and a responsibility (value chain-oriented) for establishing and managing links with markets is by itself empowering.
- Improved access to resources, information, markets and decision-making opportunities of women will bring them on par with men as equal partners in climate change and disaster risk reduction efforts. Applying social learning improved the adaptive capacities of women.

The impacts of climate change are hitting all walks of life, regardless of age, gender, or race. They can be seen from short-term natural hazards such as landslides, floods, earthquakes, and typhoons, and in the long-term through more gradual degradation of the environment. These impacts, however, vary between women and men (Josh et al. 2015; Kristjansson et al. 2014).

Women make up most of the world's poor sector. They rely more on natural resources than men for their livelihoods and survival. Due to various factors, women tend to earn less and are more likely to be economically dependent than men. As a result, they suffer more than men do from the undue impacts of natural disasters, severe weather events, and consequently, climate

change. The situation is far worse for women in marginalized groups, as well as in indigenous communities. In the Philippines, for instance, rural women are saddled economically due to stronger natural disasters and more extreme weather events.

The impacts of environmental problems caused by climate change not only destroy sources of livelihood and food for women, but also damage their health and their lives in general (FPW 2001-2004). Climate change deals critical implications on the four dimensions of food security: food availability, food accessibility, food utilization, and food systems stability. Issues on food security can then lead to loss of life; increased food insecurities; decreased ability to earn income and grow food; less arable land available; less access to clean water; and more diseases.

This lopsided situation being experienced by women is due to existing cultural norms and unequal distribution of roles and resources, which are prevalent in developing countries (Yabinsky 2012).

These forms of inequality are exacerbated by climate change and are manifested in the situation of the poor—regardless if they are men or women—who are not capable enough to bounce back from shocks and climate hazards, driving them down deeper into poverty (Ortega and Klauth 2017).

Different vulnerabilities; different capacities

The CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS) learned that farmers—both women and men—in developing countries differ in vulnerabilities and capacities to deal with the impacts of climate change on agriculture (Huyer et al. 2015; Gonda 2016). Due to these differences, their

adaptation measures vary as well (Gonda, current issues; Huyer et al. 2015).

For example, issues on land tenure, lack of capital, and limited farm inputs pose major barriers to adaption and conservation agriculture (a climate change adaptation strategy) in Sub-Saharan Africa (Goh 2012). More studies even found that financial and resource constraints, as well as lower levels of access to information and extension services, can prevent women from implementing adaptive practices (Jost et al. 2015; Tall et al. 2014; Twyman et al. 2014).

Climate variability and weather-related shocks affect women's and men's assets in different ways (Josh et al. 2015; Kristjanson et al. 2014). Women and men are changing their cropping practices in response to climate variability, with different impacts on access to and control of the income, as well as their respective workloads (Josh et al. 2015; Nelson and Stathers 2009). Women are also more vulnerable because they have less access to education and information that would allow them to manage climate-related risks on agriculture and livestock.

Gender-sensitive

The International Institute of Rural Reconstruction (IIRR) launched the CCAFS-funded community-based climate change adaptation project in Guinayangan Quezon, Philippines. The participatory vulnerability studies under the project revealed that the perceptions of men and women on the nature of risks of climate change may be the same, but how they respond or made to respond on the risks differ. Related research is also undertaken at ICRAF's site in My Loi Vietnam.

A trend towards seasonal "feminization" of agriculture is noted in post-disaster events. For instance, men vacate their properties after a natural disaster, leaving behind women to take care of (devastated) coconut farms. They are further undermined for their lack of financial capability. They only take home one fifth of their harvest for their labor on transplanting and harvesting; whenever a natural disaster hits them, they rely on micro credit to recoup their crop loss (Rosimo et al. *forthcoming*).

Supported by the Department of Agriculture-Bureau of Agriculture Research, IIRR's project is looking for new evidences to prove that gender-sensitive technologies can reduce the impacts of natural disasters and climate variability on women (Mendez et al., *forthcoming*).

Gaps between men and women in agriculture

Agriculture plays a significant role in the Philippine economy. Employing about 40 percent of Filipino workers, it contributes an average of 20 percent to the Gross Domestic Product. This output is mainly sourced

from agribusinesses, which, in turn, accounts for about 70 percent of the total agricultural output (CIDA-LGSP 2003). The main agricultural enterprise is crop cultivation. Others are chicken broiler production, including operation of chicken hatcheries (20.4 percent), agricultural services (19.8 percent), and hog farming (18.4 percent) (NSO 2002).

This sector also remains one of the most important livelihoods of women in the world. More than a third of employed women work in agriculture. Women comprise about 40% of the agricultural labor force in developing countries (FAO 2011). However, they comprise less than 20% of agricultural landholders worldwide (FAO 2010).

The agricultural activities of women are characterized by global gender gaps in vulnerabilities, access to resources and productivity (FAO 2011; Perez et al. 2015; Quisumbing and Pandolfelli 2010). Substantial gender gaps persist in access and control of six key resources and inputs for agriculture: land, labor, credit, information, extension, and technology (Sheahan and Barrett 2014; World Bank 2012).

In most countries including the Philippines, agricultural policies and investments still fail to consider the difference in available resources for men and women, their roles, workloads, and the various constraints they face every day. Specifically, in the Philippines, inequities and economic gaps prevail in conventional agricultural programming—considered an irony as the Philippines consistently finishes high in gender equality rankings. With the prevalence of extreme weather and disasters, rural women in the country now carry more economic burdens. This is aggravated with the increasing feminization of agriculture during times of natural disasters as women play critical roles in the sector.

Two strategic and interrelated gender issues in the Philippines were outlined in Women's Empowerment, Development and Gender Equity Plan 2013-2016 (WEDGE): (1) women's limited access to and control over resources; and (2) their limited participation and representation in decision-making. Women in agriculture, fisheries, and forestry have limited access to and control over land, water, and other resources for food security and self-sufficiency. The Department of Agrarian Reform reported in 2010 that women comprised only 29% of agrarian beneficiaries, indicating that men were still considered as the land title holders.

This finding implies that many women are deprived of their right to own property, which limits their bargaining power in the household and the community. Little control over land and aquatic resources leads to loss of control over food resources and unsustainable food production. Women's access to support services is hindered by unequal gender relations in the household, existing stereotypes, their non-recognition as farmers and fishers, and gender-based violence. Many indigenous people own

no legal documents, such as diploma or land ownership titles, which are required to access credit, training, and other support services. No woman serves as deputized fish warden (bantay dagat) or law enforcer because of gender biases or cultural norms.

Based on the agriculture and fisheries census made by Census Planning and Operation Division and Bureau of Agricultural Statistics, rural women undertake a variety of production and caring activities. Although not counted in official statistics, women are active economic actors who act as landless workers and traders of agricultural and fishery products. They are important agents of innovations in response to climate-induced change (Denton 2002). They also engage in micro-manufacturing enterprises. From the total rural work force, women comprised 27.3 percent of the 10.4 million workers employed in the agricultural, hunting, and forestry sector in 2004 (NSO 2004). The women's actual contribution to food production and rural economy remains undervalued, if not invisible. As a result, women have less access to productive resources than men do. Access to land, technology, extension services, capital, and infrastructure support tend to favor rural men (WAGI 2003).

Women's economic empowerment

Men and women view empowerment and specifically, women empowerment differently. The concept of empowerment is commonly related to an individual's capability set (Sen 1993; Bennett 2002; Narayan 2002). In literatures, empowerment is defined differently, depending on the context where it is applied. For instance, in the context of capabilities, Benett (2002) defined empowerment as the process of enhancing the assets and capabilities of diverse individuals and groups for them to engage, influence, and hold accountable the institutions that affect them. In terms of capabilities and participation, Narayan (2002) described empowerment as an expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives.

To empower women, their role in decision-making processes must be considered (Schuler and Hashemi 1994; Balk 1997; Rowlands 1997; Hindin 2000; Kumar and Paul 2007). For Kishor (2008), empowerment is defined as the process of increasing women's control over their own lives, bodies and environment. In simple terms, it means giving them autonomy (Dyson and Moore 1983; Basu and Basu 1991; Schuler and Hashemi 1994; Jeejebhoy and Sathar 2001) and some agency (Gage 1995; Tzannatos 1999; Roy and Niranjana 2004; Alkire 2007; Kabeer 2008).

The importance of agency in the discourse on empowerment emerges from the "bottom-up" perspective that replaced the "top-down" approaches in development. Women must be active agents rather than passive recipients of change. In this regard, Jo Rowlands asserted that empowerment is a bottom-up process and cannot be bestowed via top-down system.

In terms of power, empowerment is considered a social process "of challenging existing power relations and of gaining greater control over the sources of power" (Bennett 2002; Beteille 1999; Schuler 1986; Malhotra 2002; Saraswathy 2008; Mahmud and Johnsten 1994; Batiwala 1994; Agarwal 1997; Beegle et al. 1998; Pulerwitz et al. 2000; Kahlon, 2004). Since it is concerned with power, it deals with the power relations and distribution of power between individuals and group. Other literatures defined empowerment as simply decision-making power.

The concept of power is also defined in various ways: "domestic economic power" (Mason 1998); "bargaining power" (Beegle et al. 1998; Hoddinott and Haddad 1995; Quisumbing and de la Briere 2000).

Climate smart agriculture (CSA): How can it help further gender relations, improve equity and foster empowerment

CCAFS-funded studies conducted by IIRR in the Philippines showed promising results on the potential of climate-smart agriculture (CSA). The results showed that climate-smart interventions provide special opportunities to enhance the economic status of women; reduce gender gaps; and build their adaptive capacities on climate change. These potential benefits of CSA could help foster women economic empowerment.

Empowering women and achieving gender equity could then help to address climate change. With the right approaches, CSA is uniquely suited to the needs of women.

As defined by the Food and Agriculture Organization of the United Nations, CSA refers to a type of agriculture "that sustainably increases productivity, enhances resilience (adaptation), reduces/removes greenhouse gas emission where possible, and enhances achievement of national food security and development goals". It is based on the principles of increased productivity and sustainability, with a focus on climate change adaptation and mitigation to achieve food security for all.

About the CGIAR Research Program on Climate Change, Agriculture, and Food Security (CAAFS)

CAAFS focuses on women as central figures of agriculture in developing countries within a broader social context. This focus is appropriate since gender equality is a key leverage point for change given women's important roles in agricultural production, food security, nutrition, and livelihoods. Addressing gender equality opens spaces to address other social inequalities. The CCAFS gender and social inclusion approaches to CSA, food systems and landscapes follow three main approaches: vulnerabilities; gender transformation; and strengthening institutions.

The CCAFS desired outcome for CSA objectives is 1) CSA options with gender implication; 2) incentives for adopting CSA, which reduces risks and vulnerability; 3) investment to improve access and control to resources such as safety net; and 4) Investment to increase women participation.

CSA can be considered as sustainable agriculture that incorporates resilience while seeking to reduce greenhouse gas emissions. In the context of the Philippines, one of the most vulnerable countries in Southeast Asia, CSA can be nested in disaster risk reduction approaches that were already mainstreamed in the country.

CSA increases productivity and incomes from crops, livestock, and fish without inflicting negative impacts on the environment. It also aims to reduce exposures to short-term risks, while also strengthening the resilience of people by building their capacity to adapt and prosper in the face of shocks and long-term stresses.

Conclusions

The issue of how climate-smart agriculture can advance equity and empowerment of women and their inclusion in disaster and climate adaptation programs could be addressed via community-level research studies. These studies include field-level livelihood activities/action-research managed by women themselves. The following pre-selected ventures will provide women direct access to assets, resources, climate and market information and decision-making opportunities: (i) small livestock; (ii) high value vegetable production; and, (iii) root and tuber crop production and processing. Outcomes accrue from action research due to engagements with farm women in the design, management, and implementation of enterprises in homesteads and family farms

The increased control of production assets by women and a responsibility (value chain-oriented) for establishing and managing links with markets is by itself empowering. While modernization, mechanization, and commodity orientation (rice, coconut in the case of the Philippines) has moved women to a peripheral position, their deliberate engagement in agricultural entrepreneurship-oriented activities (mentioned above) exemplified by high-value CSA activities is expected to provide them a more central role, especially in homesteads and small family farms (where they have better control of productive assets and resources, which they can directly supervise and oversee).

Project designers must learn how to generate new CSA-oriented business opportunities, with multiple functions featuring more prominent, central roles for women. In IIRR's four decades of action research in the Philippines, farmer champions have always featured as the primary agents of change. In more recent initiatives, women innovators already surfaced. Their social transformation is apparent and notable. Their new leadership roles in the community and the improved preparedness towards natural disasters have been recorded. IIRR and CCAFS partners build on this social capital of woman innovators to foster social transformation amongst woman farmers at local levels. Improved access to resources, information, markets and decision-making opportunities of women will bring them on par with men as equal partners in climate change and disaster risk reduction efforts. Applying social learning (learning groups and local innovation platforms and on participatory action research) improved the adaptive capacities of women. Incremental adaptation processes will result from the engagement of women in these targeted CSA-oriented activities in risk-/disaster-prone environments. These results will be carefully tracked and documented and used for multiple capacity development, advocacy, and promotional activities.

Participatory and community-based action research can provide opportunities to identify and test emerging risk-based, gender-responsive technological options and social learning methods aimed to derive a mix of economic, environmental and social (including equity) benefits. Research can be designed to help in the surfacing of gender-differentiated disaster and climate change risks; in different ecological zones such as coastal, lowland and uplands, indicators and methods for surfacing the sources of inequities need to be derived. Strategies, mechanisms, and partnerships to mainstream gender-responsive CSA into local development programming need to be tested. Institutional structures and systems, which can facilitate the introduction and eventual mainstreaming of gender-responsive CSA in local development programming must be studied. Design, planning and programming implications for sub-national and national level can be derived via research and development at local levels.

Overall, a wider and more equitable gender sensitivity is now seen amongst policy makers and local government, with a corresponding enhanced and out-scaled uptake on CSA. The research impacts/influences on the institutional infrastructure (at community and local government level) will contribute to improved equity, economic empowerment and social inclusion of farm women and a future generation of young girls/women in rural communities.

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This research was carried out as part of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and implemented by the World Agroforestry Centre (ICRAF) and the International Institute of Rural Reconstruction (IIRR). This brief summarizes the findings of a case study of a diversification effort undertaken in Guinayangan Climate-Smart Village.

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About CCAFS Info Notes

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is led by the International Center for Tropical Agriculture (CIAT). CCAFS brings together some of the world's best researchers in agricultural science, development research, climate science and Earth System science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. Visit us online at <https://ccaafs.cgiar.org>.

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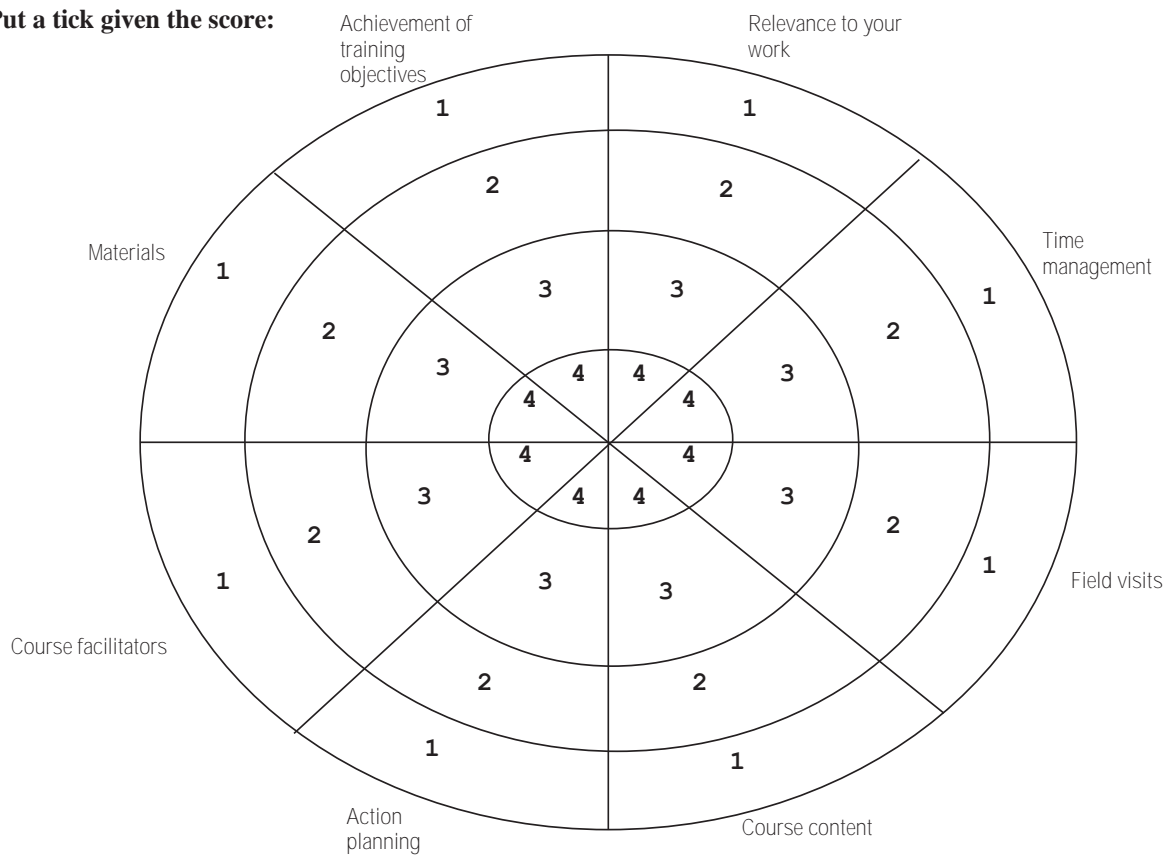
Annex 1. Overall Post-Training Evaluation Form

Dartboard Evaluation

1. After going through the entire the training, please assess it based on the criteria identified below using a scale of 1 to 4 as follows:

- 1- Poor**
- 2- Needs Improvement**
- 3- Good**
- 4- Very Good**

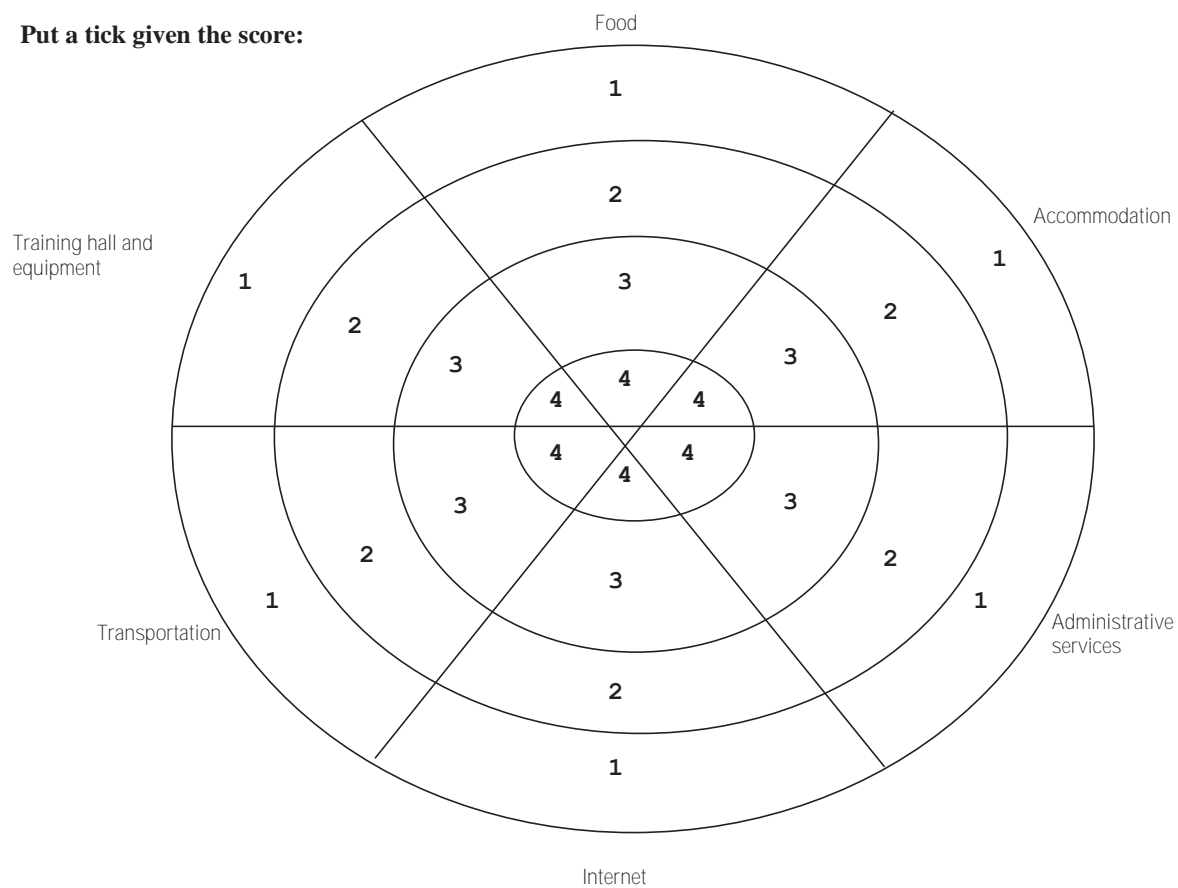
Put a tick given the score:



2. Please rate the following services and facilities:

- 1- Poor
- 2- Needs Improvement
- 3- Good
- 4- Very Good

Put a tick given the score:



Participants Reactions

1. What factors contributed and/or hindered the achievement of the objectives of the training?

2. What other suggestions do you have to improve the training?

3. Please leave some words or reflections on your training experience (training, organization, people, etc.)

Thank you for your feedback.

Do you grant us permission to use photos where you are included and to quote your comments or messages for our external communications (publications, press releases, annual reports, etc.)? Put a check to your answer.

_____ Yes, with my name	_____ (Name)
_____ Yes, but use it anonymously	_____ (Designation)
_____ No, don't use my reflections	_____ (Organization)
	_____ (Email address)

Annex 2. A roving workshop conducted during the training workshop on Establishing Climate-Smart Villages in the ASEAN Region to Improve Food Security and Resiliency in Local Communities

Excerpt from the narrative report prepared by Christian Ray C. Buendia

The third module of the workshop on establishing CSVs in the ASEAN Region consisted of a roving workshop, where participants visited various field sites in the Guinayangan CSV from 10-12 July 2019. These field sites represented the various agro-ecological settings and showcased the CSA options and best practices adopted to address the prevailing climate risks specific to these settings.

The first field site was located in Barangay Cabong Norte, an upland agricultural area that primarily produces coconut., Participants learned about intercropping corn and legumes under to maximize the areas in between coconut trees, and other interventions. Meanwhile, Barangay Capuluan Tulon featured a method of raising native pig breeds that utilizes low external input and produces low carbon footprint. This was followed by a field visit to the fishery and coastal agriculture community of Barangay Capuluan Central, where families that are dependent on marine resources discussed about the initial work on coastal reforestation and diversification of coastal livelihoods.

The next field visit consisted of a brief tour of the Maulawin Spring Protected Landscape. Here, Guinayangan Mayor Cesar J. Isaac III presented the LGUs efforts toward the institutionalization of the Green Fund, as well as their experiences regarding water resource management in the municipality. Participants proceeded to Barangay Sta. Cruz to learn about agroforestry and diversification techniques. They also showcased private sector linkage, , where farmers were contracted by Jollibee Foods Corporation to produce chili peppers. The last site visited by the participants in the Guinayangan CSV was the demo farm and eco-park managed by the Office of the Municipal Agriculturist of Guinayangan, where the focus was on synthesizing the learnings from the field visits, with focus on social learning approaches.

On the way back to Los Baños, participants made a brief visit to the National Swine and Poultry Research and Development Center (NSPRDC), where they learned about efforts to promote climate-resilient native livestock breeds, and to the Quezon Agricultural Research and Experiment Station in Tiaong, Quezon, where the various initiatives and milestones reached under the DA-AMIA Program were discussed.

FIELD VISIT 1

Barangay Cabong Norte

Upland Agricultural System/Corn Production

The first CSV site visited by the participants featured intercropping in an upland agricultural setting. Mr. William R. Lopez, Agricultural Technologist from Municipal Agriculture Office (MAO) Guinayangan, facilitated the discussion and field visit to the corn production farms in Barangay Cabong Norte. Barangay Cabong Norte is an upland agricultural village in Guinayangan, Quezon with a total area of 437.44 hectares. Its major agricultural products include coconut, corn, legumes, upland rice, livestock, fruit trees, banana, root crops, and chili.

Through the partnership between MAO Guinayangan and IIRR, farmers were able to learn about corn-legume intercropping as a CSA option to increase yield and land use efficiency. In addition, to address the vulnerability of area to water scarcity due to prolonged dry season, the MAO and the LGU initiated efforts to find alternative water sources, including the construction of open deep wells. Four-wheel tractors were also provided to replace manual plowing to address synchronicity and timeliness of planting schedule in the area.

Another challenge faced by corn producers in the area is the lack of post-harvest facilities, specifically for drying the harvested corn during the wet season. In response, the MAO-LGU partnership provided a corn sheller and corn dryer. Meanwhile, Mr. Lopez said that the MAO adopts a holistic approach in providing assistance to the farmers, from providing inputs to extending marketing assistance to help them sell their produce at a more profitable price.

Among the future plans of the MAO and the LGU, according to Mr. Lopez, are to establish seed production of glutinous corn; establish demo farm on sorghum production; initiate seed production of peanut; expand chili pepper production; construct four additional open deep wells; establish community vegetable farms; and apply the six-sector industrialization approach, which covers the various activities along the value chain, from production to marketing.

Ms. Jessean Dueñas and Mr. Wilberto Dueñas, farmer beneficiaries of the program, shared that they adopted the CSA approach, particularly intercropping, to maximize the use of land and to provide additional income to their families.

FIELD VISIT 2

Barangay Capuluan Tulon *Small Livestock Production*

During the second site visit, participants were able to understand how the provision of livelihoods and community support structure, climate-smart livestock production in the case of Barangay Capuluan Tulon and Barangay Arbismen, has contributed to the economic empowerment of women. Mr. Gerry Hernandez, Agricultural Technician from MAO-Guinayangan, served as the facilitator for the discussion and tour of the native pig breeding center in the area.

Barangay Arbismen consists of 300 households that are mainly dependent on rice and coconut production. Its rice farms, the largest in Guinayangan in terms of land area, are primarily rain-fed. The area experiences prolonged dry spells, and in fact, farmers were not able to plant rice for three years due to water scarcity. Meanwhile, Barangay Capuluan Tulon has 240 households, with coconut production as their primary source of livelihood. In the past years, the area has suffered from low production volume and declining prices of coconut in the market. To augment the traditional sources of income in the two barangays, the women tried to raise livestock, raising the commercial pig breeds at the onset before transitioning to the more climate-resilient native pig breeds.

Farmers were able to link with the National Swine and Poultry Research and Development Center (NSPRDC) for assistance with regard to technical input and source of good pig breeds. They also collaborated with the DA Region 4-Southern Tagalog Integrated Agricultural Research Center (STIARC) for the provision of support on value chain development through the crafting of business plan and setting up of holding facility. Farmers have also introduced more climate-resilient crops in their farms, including corn and drought-tolerant high-value crops.

It was interesting to note that 70 percent of the participants are women. Through the years, women farmers have led the formation of farmer groups, which continue to grow in membership. The establishment of farmer learning groups (FLGs) and the conduct of participatory action research has provided invaluable inputs and capacity building to the farmers. Aside from serving as a learning platform for farmers, FLGs are also a mechanism for scaling out and an avenue for farmer-to-farmer exchange, addressing the problem as regards limited manpower for agricultural extension systems.

Mr. Hernandez shared the case story of Ms. Leony Labro who used the money obtained from selling her pig to finance the hospitalization of her husband. Afterwards, participants were given a tour of the native pig propagation center that showcases low-external input and low-carbon footprint technology. According to Godofredo Rosales, president of the Community Savings and Credit Association (CoMSCA) in Barangay Capuluan Tulon, the expenses incurred for the maintenance of the breeding facility is shared by the organization members themselves. The facility utilizes alternative pig feeds from naturally-growing plants (banana stalk, coconut meal, and *Trichantera gigantea*, among others). In terms of addressing climate risks, Dr. Gonsalves said that the breeding facility has a lower carbon footprint than the commercial pig production since it reduces the need for commercial feeds. Moreover, it addresses food safety issues as it provides an alternative source of meat to the commercial pigs that are administered with antibiotics, which may cause antibiotic resistance. The design of the facility, particularly the materials used and the airflow, also reduces temperature by 2 to 3 degrees Celsius, while the floor mattings/living bio-beds (made of rice hull, coconut husk, and soil) consume less water, produce less methane, and have less foul smell.

Towards the end of the site visit, Ms. Rosimo emphasized that role of community support structure in encouraging more farmers to adopt CSA approaches to augment their livelihood while addressing climate risks. Another important social process concept that can be observed in the site is the use of participatory action research, wherein the farmers themselves assess the climate risks and then discuss and test the adaptation strategies.

FIELD VISIT 3

Barangay Capuluan Central *Fishery and Coastal Agriculture*

Participants proceeded to Barangay Capuluan Central, a coastal community dependent primarily on subsistence fishing. Mr. Joel Fabricante, Fishery Technician from MAO-Guinayangan, facilitated the discussion. During the *amihan* (northeast monsoon) and *habagat* (southwest monsoon) seasons and during typhoons, fisherfolks in Barangay Capuluan Central are not able to catch fish in the sea. During this period, which lasts from September to December, fishermen resort to coconut farming and livestock raising as alternative sources of food and income. Another challenge faced by fisherfolks in Barangay Capuluan Central

is the limited fishing area, since the Ragay Gulf is shared by 10 municipalities. Fish catch has also been decreasing through the years.

According to Mr. Fabricante, one of the programs of the MAO-Guinayangan is mangrove reforestation, which started in 2010 and funded by the Bureau of Fisheries and Aquatic Resources (BFAR). This reforestation project has also served as an alternative source of income, since BFAR provides remuneration for every propagule planted and separate remuneration when the propagule has survived and developed. The community has also engaged in seaweeds production as alternative livelihood through the efforts of the Office of the Provincial Agriculturist of Quezon. The fisherfolks produce pickled seaweeds from harvested seaweeds and has been trained on the production of seaweed noodles. Meanwhile, the Guinayangan LGU has launched efforts to protect sea turtles and corals.

One of the collaborations done by the LGU and IIRR is coastal agriculture which aimed to increase the adaptive capacity of coastal communities. In 2015, the program attempted to plant different species of mangroves with diagonal spacing to help break strong waves. Although the program started with eight villages, it is now operating only in three villages, namely, Barangay Capuluan Tulon, Arbismen, and Dancalan Caimawan.

According to Dr. Gonsalves, coastal agriculture can also act as a bio-shield that could protect communities during typhoons and storm surges. He added that the goal is to get as much plant varieties that can thrive in saline conditions into the system, including eggplants, root crops, and fruit bearing trees such as mango, cashew nuts, coconuts, and jackfruit. In terms of small-scale livestock component, pigs can tolerate rains and saline air.

FIELD VISIT 4

Maulawin Spring Protected Landscape *Water Resource Management and Green Fund*

The participants visited the visited the Maulawin Spring Protected Landscape (MSPL), formerly known as the Maulawin Spring Watershed Forest Reserve. MSPL is a 149-hectare protected landscape located in barangays Himbubulo and Magsaysay in Guinayangan, Quezon. Ms. Kimberly Anne Abrera and Ms. Keya Zia Pitero of the Department of Environment and Natural Resources

discussed the LGUs efforts toward the sustainable management of water resources in the municipality and the application of the payment for ecosystem services.,

The MSPL represents one of the remaining intact forests in Southern Quezon. Classified as a tropical rainforest, the MSPL houses Philippine dipterocarp species and other native tree species. Given its unique features, the MSPL was declared a Protected Area under the Protected Landscape category by virtue of Presidential Proclamation No. 295 issued on 23 April 2000. In 22 June 2018, the MSPL was classified as a National Park under Republic Act 11038. Its total land area of 183.15 hectares is divided into two management zones, namely, the strict protection zone (SPZ) and multiple use zone (MUZ). Multiple use zones, which constitute around 57 hectares, are intended for forestry, agriculture, and ecotourism. This is also where tenured migrants are given temporary settling areas and serves as source of livelihood for the communities.

In terms of biodiversity, the MSPL serves as home to 325 species of flora and fauna, 13 of which are Philippine endemic while 40 are threatened species. Its watershed is also an invaluable source of potable water to the neighboring communities. Income generated from resource user fees collected by the Guinayangan Water District (GWD) and entrance fees from visitors of the ecotourism zone are utilized for programs and activities that aim to protect and conserve biodiversity, as well as to maintain and develop the ecotourism facilities.

Protection and conservation efforts by the Guinayangan LGU include reforestation, boundary fencing between MUZ, SPZ, and private lands, and monitoring and maintenance of established plantations. The IIRR has also engaged in reforestation and boundary fencing activities in the MSPL, in addition to enrichment planting and the tagging and identification of priority species. On the aspect of climate-smart agriculture, IIRR has collaborated with tenured migrants of the protected landscape in applying agroforestry and raising of climate-resilient livestock such as pigs.

Meanwhile, Guinayangan Mayor Cesar J. Isaac III shared about the municipality's experience and successful implementation of the payment for ecosystem services (PES) and how the LGU helped the Department of Environment and Natural Resources (DENR) in protecting watersheds within Guinayangan. According to Mayor Isaac III, the current water requirement of the municipality totaled 63.55 liters per second. While in 1964 the available water from the watershed was 100 liters per second, this declined to 20 liters per second in

2012, falling short of current water demand of the municipality. At an annual population growth of 2.37%, the LGU deemed water shortage imminent, prompting collaboration with organizations such as the IIRR and the Forest Foundation Philippines to preempt this problem. One fruit of this collaboration is the establishment of the Municipal Ecosystem Management Council (MEMC) and the Green Fund.

The MEMC aims to preserve and maintain the ecological, economic, and cultural services of the forest resources in Guinayangan; protect and rehabilitate watersheds; ensure that activities conducted within forestlands are in accordance with national guidelines, rules, and regulations; and develop new watersheds outside of the MSPL.

Mayor Isaac III shared that the key to the successful implementation of PES in their municipality is ensuring the involvement of the stakeholders throughout the various stages of the process, from planning to monitoring and evaluation. By ensuring that stakeholders are engaged, conflicts are minimized during preparation and implementation of PES because these are immediately resolved at the level of the MEMC, which has representatives of stakeholders as members. Currently, the Green Fund is collected from the clients of the local water district, which is already incorporated in their monthly bill. To ensure transparency and accountability, the fees collected are deposited into a trust fund that is subject to annual audit by the Commission on Audit. Moreover, the Municipal Environment and Natural Resources Office (MENRO) of Guinayangan, as the MEMC Secretariat, is tasked to provide quarterly financial reports shared through social media platforms and the LGU's accountability board.

Mayor Isaac III reported that 50 percent of the collections from the Green Fund are allocated towards the development of the watersheds while the rest will be used for the procurement of additional land adjacent to the watersheds. Mayor Isaac furthered that while the amount collected from the Green Fund may be relatively small, its significance rests in the fact that every time the Green Fund is collected, people are reminded that they depend on natural resources and ecosystems services for their livelihoods.

FIELD VISIT 5

Barangay Sta. Cruz

Agroforestry and Diversification Techniques

After the site visit to the MSPL, participants proceeded to Barangay Sta. Cruz to learn about agroforestry and diversification techniques, as well as to hear how farmers were able to link with an institutional market to ensure a stable buyer of the chili pepper they produce. Mr. Lopez, who facilitated the discussion, said that one of the challenges for farmers is establishing partnerships with a stable market.

In the case of Guinayangan, farmers, through the vegetable farmers association, were able to form a partnership with Jollibee Foods Corp. to buy their chili pepper. To ensure that farmers meet the market standards, they underwent a series of trainings and three rounds of test marketing and established monitoring and quality assurance mechanisms. Farmers started supplying chili pepper to Jollibee Foods Corp. in January 2019 and have delivered 3,428 kilos of chili pepper as of July 2019.

Providing the context of the upland agriculture initiatives of the local government, together with various organizations such as the IIRR, Dr. Gonsalves said there are risks associated with climate in the process of diversification. According to him, trees play a big role in risk reduction but are also vulnerable to the failure of fruiting and pollination services. Thus, there is a need to promote diversification. For instance, cacao farmers in the upland areas are currently focusing on Liberica coffee production due to its climate-resilient features, and this is intercropped with black pepper. Dr. Gonsalves added that diversification through agroforestry also addresses price risks, helps regulate temperature, and facilitates pollination.

Upland farmers applying agroforestry and diversification techniques in Barangay Himbubulo Este and Sta. Cruz shared their stories and lessons learned to the workshop participants. Ms. Emma Alfiler, who raise pigs and plants coconut, madre de cacao, black pepper, and chili pepper, among others, shared that her training in the farmer field school taught her to diversify crops planted in her farm. Meanwhile, Ms. Noime Balido intercropped papaya trees with chili peppers to maximize the use of her farm. After the discussion, participants paid a short visit to the chili farm of Mr. Placido Mijares, who related how the shift from rice production to chili pepper farming has increased his income by more than 10 times.

FIELD VISIT 6

Barangay Danlagan Batis *MAO CSA Demo Farm*

The last site visited by the participants is the MAO CSA Demo Farm and Eco-Park, which was established to serve as a training ground of farmers in organic farming, and has now expanded its function as demo site for CSA. Ms. Belina O. Rosales, Municipal Agriculturist of Guinayangan, discussed about integrating CRA into current agriculture programming of the municipality and the banner programs of the DA, as well as the systems and structures established to support CRA programming.

In the case of the rice program, climate change was integrated into the Farmer Field School (FFS) curriculum. Their Climate-Resilient Farmer Field School on rice production uses climate-smart technologies such as system of rice intensification (SRI), use of green leaf manure, rice-duck system, and use of saline-tolerant rice varieties. For the corn program, intercropping with legumes as mulch was done to preserve soil health and to provide alternative food and income source. Meanwhile, the use of organic fertilizer (e.g., vermiculture), diversification of crops, and agroforestry was promoted in producing their high value commercial crops. Small livestock raising was also integrated into the programs, with special preference to native stock and the use of intensive feed gardens. In recognition of the critical role of timely and science-based information through the climate information system, the Guinayangan LGU conducts seasonal planning to provide guidance and relevant information as basis for farmer decision. There are also plans to implement 10-day advisory and training of the new Municipal Disaster Risk Reduction and Mitigation Office for data collection.

The Guinayangan LGU has also invested in structures and in building partnerships to sustain its CRA programming. The Demo Farm and Eco-Park in Barangay Danlagan Batis include community support facilities that provide not only technologies but also interventions. Among the community support facilities housed by the MAO Demo Farm and eco-Park are the greenhouse, coconut nursery, sweet potato propagation center, goat breeding center, organic rice production, tilapia breeding center, plant nursery, dragon fruit demo farm, and crop museum.

To support these technologies and CRA practices, the LGU, together with the

Agricultural Training Institute, has also established the Farmer's Information and Technology Services (FITS) center where farmers can conduct online and offline research for their production and marketing needs. In addition, the LGU has provided farmers with farming equipment, such as four-wheel tractors, corn hammer mill, corn sheller, rice flatbed dryer, hand tractor, and irrigation facilities, among others.

According to Ms. Rosales, to fully assist and serve Guinayangan farmers, the local government helps build institutional markets and links farmers in the value chain as part of resilience building. Moreover, since Guinayangan is a coastal municipality, LGU conducts regular mangrove reforestation. Value adding processes are also being done in the processing center, especially for women community members.

Ms. Rosales mentioned that one of the factors which contributed to the success of farmers, is group building, which prepared them in engaging with different institutional markets and value adding processors. In Guinayangan, farmers have organized themselves into farmer groups such as AROMA (Asosasyon ng Responsable at Organikong Magkakape) and CACAO Growers. In addition, the LGU continues to strengthen its coordination with DA to complement resources to facilitate better resiliency building of farmers.

Quick Stops

National Swine and Poultry Research and Development Center (NSPRDC) Quezon Agricultural Research and Experiment Station

En route to Los Baños for Module 4 of the workshop, participants made a quick stop at the National Swine and Poultry Research and Development Center located in Tiaong, Quezon. Ms. Marivic M. de Vera, Supervising Agriculturist from NSPRDC, facilitated a discussion on the Center's efforts to propagate and develop native pig breeds throughout the country. An audio-visual presentation of past and current research and development programs of the NSPRDC for swine and poultry was shown and the participants were given a brief tour of the facilities of the NSPRDC.

Next stop was the Quezon Agricultural Research and Experiment Station, where participants learned about the DA-AMIA Program through a briefer presented by Dr. Elmer T. Perry, Regional Technical Director for Research and Regulations and

AMIA Focal Person of DA-Regional Field Office IV-A. Dr. Perry discussed the AMIA Program Framework and the programs funded under AMIA Program, including the scaling out of CRA in San Francisco and Guinayangan in Quezon Province. He also shared the other mainstreaming initiatives of DA, including the construction of climate-resilient agriculture infrastructure, such as farm-to-market roads, and climate-resilient agriculture extension system.

Ms. Aida P. Luistro, Ms. Elizabeth R. Gregorio, and Ms. Girsy V. Anda of DA-Regional Field Office IV-A shared the experiences and lessons learned from establishing AMIA villages in San Francisco, Quezon. Among the adaptation strategies and interventions implemented in the San Francisco AMIA villages, for instance in rice-based production, are participatory learning trials on the use of stress-tolerant rice varieties, rice-mung bean crop rotation, fertilizer application based on soil analysis, and building links to financial services. These efforts have succeeded in increasing the awareness of rice farmers on CRA technologies and practices and on available financial services. These have also encouraged community participation in action research planning and implementation and enhanced technology transfer through farmer-to-farmer knowledge sharing. The presenters likewise discussed the various adaptation strategies and interventions for corn-based production, yam production systems, and coastal livelihood. They also discussed other initiatives of DA efforts under the AMIA Program in terms of delivering climate information to farmers and scaling out CSA at the local level.

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