

Climate-Smart Villages: Platforms for Fostering Adaptation Action

A Synthesis Brief for Policymakers

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Climate Smart Villages can:



Build resilience



Nurture sustainable food systems



Foster equity



Empower women



Be scaled up and out

Introduction

This brief for policymakers synthesizes lessons from five years of experience in nurturing Climate-Smart Villages as platforms for resilience building, women empowerment, equity, and sustainable food systems in Southeast Asian countries.

From 2018-2022, the International Institute of Rural Reconstruction (IIRR), through the support of the International Development Research Center (IDRC) Canada, worked with farmers, local authorities, civil society actors, and national agencies in supporting villages in Cambodia, Myanmar, and the Philippines that are vulnerable to the impacts of climate change. Research findings and recommendations are documented in 22 knowledge products on which this policy brief is based.

In the Philippines, IIRR has also worked with the Adaptation and Mitigation Initiative in Agriculture (AMIA) Program under the Systems-Wide Climate Change Office (SWCO) of the Department of Agriculture (DA) in their climate change adaptation efforts with a particular focus in the partnership areas of Guinayangan, Quezon and Ivisan, Capiz.

Applying methods for nurturing climate-smart villages (CSVs) can help contribute to the global need for ecosystem restoration, rehabilitation of degraded landscapes, and regenerative agriculture.

How CSVs build resilience

Climate-smart villages (CSV) embody a participatory approach that helps communities address climate change in agriculture, considering the best climate-smart agriculture (CSA) options that are ecologically- and culturally sound and gender-responsive.

CSVs are designed to develop a portfolio of practices and technologies that address food security, adaptation, mitigation, and climate information services.

CSVs are formed through a series of stages with corresponding steps: baseline assessment, CSV design, creating evidence, developing learning sites, and scaling.

In documenting experiences of villages that have gone through these steps over five years, IIRR found that resilience can be built through:

- **Complementation of production systems** such as small native chicken production in homesteads (Chhouk CSV, Cambodia), intercropping of legumes and raising native chicken (Htee Pu CSV, Myanmar), **and traditional pig production in agroforestry** (Himbubulo Weste CSV, Philippines);
- Testing, developing, and subsequently scaling up **location-specific strategies** for addressing climate risks; and
- Building on **social support mechanisms**, including community self-help practices and access to local government assistance.

The COVID-19 pandemic tested the resilience of villages that have undergone these steps. An IIRR study in 2021 found that domestic

food production contributed significantly to consumption during the COVID-19 lockdowns. Complementary and diverse food production and access to informal food outlets played critical roles in supplying food commodities to the population during the pandemic.

Steps in forming Climart-Smart Villages

STAGE 1	ESTABLISH CONTEXT Step 1: Engage stakeholders Step 2: Determine needs and strategies
STAGE 2	IDENTIFY OPPORTUNITIES Step 3: Identify scalable CSA practices Step 4: Prioritize best options
STAGE 3	GENERATE EVIDENCE OF BENEFITS Step 5: Test, monitor, assess practices Step 6: Build capacities for adoption
STAGE 4	DEVELOP LEARNING SITES Step 7: Farmer-to-farmer scaling events
STAGE 5	SCALE UP AND OUT Step 8: Evaluate outcomes and impacts Step 9: Scale up/out with partners (IIRR and ICRAF, 2018)

How CSVs nurture sustainable food systems

Among the various food system drivers, climate change has the most perceived impact at the local level - among food producers, retailers, distributors, and consuming households (IIRR, 2021).

Climate-smart villages can transform food systems towards **increased access to local markets for fresh, nutritious food, even during shocks and stresses.**

CSVs in Cambodia's Biodiversity Conservation Corridors, based on the Koh Kong Province's experience, show how native small livestock

production in homesteads can equitably nurture sustainable food systems.

CSVs can serve as platforms for invigorating a circular and solidarity economy, for example, through promoting ways to reduce food loss and waste, ensure the safety and nutritional quality of perishable goods, and maximize economic gain for vulnerable actors in the agri-food system.

Nurturing Sustainability with Native Chickens in Koh Kong Province, Cambodia

Cambodia's Koh Kong Province selected native chicken raising as a CSA option because native breeds are climate-hardy and relatively disease-tolerant.

The main livelihood of village adopters is growing rice and vegetables. Native chicken raising complements existing livelihoods and supplements household income.

Village adopters use local housing for low ambient temperatures and low-cost feeding regimes devoid of hormones and antibiotics. Not only do these practices save on costs, but they also save the environment from pollutants.

Residual farm produce such as broken rice, corn grits, and left-over vegetables are used as chicken feed, enabling a circular economy.

At the same time, native chickens have less cholesterol and deeper flavor than poultry chickens bred to grow fast in confined spaces.

In the process of enriching local food systems, the agrobiodiversity of small livestock is conserved through sustainable use.

This intervention is also gender-fair. For example, small livestock manageable within homestead systems provides homebound women with greater access to technology and better hold of its benefits.

A financial analysis among 25 households found that as the chicken sales volume increased, the production cost per kilogram of broiler sold decreased, and the average net income increased.

[\(Manilay et.al., 2021\)](#)

How CSVs foster social equity

Geographic and social group targeting is an important part of CSV formation. This helps to ensure that CSA benefits promote equity and inclusion. Without an understanding from stakeholders about their current needs and existing capacities, CSA interventions run the risk of failing to recognize traditionally marginalized groups and exacerbating distributional and procedural inequities.

To foster social equity, institutions that accompany climate-smart villages need to give as much attention to **social and institutional dimensions as to technical considerations**. For example, project implementers can use seedling distribution to teach smallholder, landless farmers, and women about climate-smart practices, such as digging pits for rainwater harvesting.

Social Equity in Fruit Tree-based Agroforestry in Myanmar's dry zone

In 2016, IIRR did a scoping study covering four cultural and ecological locations in Myanmar. The scoping team paid special attention to the context of women and landless people in assessing the study sites' social, technological, and institutional contexts.

The Dry Zone in central Myanmar was selected as a learning site, an arid region that struggles with drought, water scarcity, and infertile soil. Pressing issues of landlessness and other forms of tenure insecurity made social equity a key concern in prioritizing CSA options.

Fruit tree-based agroforestry was included in the CSA portfolio of Htee Phu Village of Mandalay, adopted on land previously used only for annual crops such as sesame, pigeon pea, horse gram, tomato, and groundnuts. Villagers planted over 4,500 seedlings from eight different types of fruit trees between 2018-2020.

Aside from addressing land degradation, the intention is to also work towards distributional equity. Fruit tree harvests

can provide pathways for reducing poverty amongst smallholder and tenant farmers and landless laborers providing agriculture services.

Procedural equity is embedded in the process, as farmers' preferences informed the selection of fruit trees to plant. Over half of the trees planted were mangoes, which farmers preferred for family consumption and high market demand. Custard apple and pomegranate were also selected, both having small body mass and canopies suited for intercropping. All planting materials were from local nurseries.

A valuation study found that the annual economic value of the provisioning ecosystem service of growing mango trees is over USD 71,000 while storing 6,000 tCO₂ valued at over USD 47,000.

[\(Manilay et al, 2021\)](#)

Social equity objectives need to permeate the design of short, medium, and long-term strategies. To enable this, robust evidence is needed from different agroecologies, farm sizes, land tenure, and farming systems.

Products from family farms mostly have short value chains (e.g., vegetables directly sold to consumers along roadsides or in local markets). An IIRR study on the COVID-19 pandemic revealed that societies with robust smallholder production systems fared better in food security than those dependent on traded and processed food (Barbon et al., 2022).

Cost-benefit analysis and valuation studies can help CSVs promote recognition of family farms' contribution to local food security and the domestic economy. With more evidence, CSVs can prove that CSA adoption can enable poor farmers in their villages to escape poverty and withstand repeated climate shocks.

How CSVs empower women

Decisions on what CSA technologies to promote affect women's participation in decision-making processes. **Gender considerations, when integrated into designing CSVs, help address the practical needs of women, especially those exposed to high climatic risks.** CSVs can provide opportunities to meet gender equity goals, wherein women and men can have equal opportunities to engage in climate-adaptive economic activities. In addition, women-focused climate adaptation measures recognize women as active agents in resilience building.

CSVs can help to identify approaches and test methods for removing barriers to undertaking gender-transformative and socially-inclusive climate adaptation actions. Project implementers must be attuned to women's domestic productive roles and mobility limitations, the agricultural and non-agricultural livelihoods relevant to women, and these effects in household decision-making.

Local financing mechanisms such as village development and savings funds (VDFSG) and CSV Adaptation Funds can catalyze households' implementation and adoption of options if coupled with training, capacity-building, and nutrition education. When used strategically and targeted, these local funding mechanisms can incubate ideas, spur action, and deliver the "critical mass" that gives momentum to foster the spontaneous spread of adaptation options. Women farmers can be empowered to make decisions and act on them, even within restrictive social norms.

An IIRR study (2021) found that VDFSG members are more resilient to possible stresses/shocks because of their access to financial and social support. As a result, they are in a better position to cope with their vulnerabilities due to the presence of a VDFSG in their village.

CSVs can transform women into confident members of their communities, able to find ways to overcome their vulnerabilities. The training they receive from the VDFSG, and the members' support for each other contribute to confidence-building.

VDFSGs rely on loan interest payments, their sole revenue source. To scale out, VDFSGs with efficient payment collection systems can offer other services to members wherein they can invest their available funds. For instance, offering health insurance can broaden the usefulness of VDFSGs, especially to women who are the primary caregivers when family members get sick. Offering this service in partnership with government or private actors can improve women's resilience.

Women Empowerment Pathways

Based on a study of how CSVs contribute to women empowerment in Myanmar, Cambodia, and the Philippines, :

- Prioritizing support for homestead gardens and small-scale livestock raising “empowered women farmers to have a seat in the decision-making table and contributed to more shared decisions and problem-solving in the household, compared to before.” Assets, where women have exclusive or strong control, are in the homestead and small animals therein, therefore helped facilitate women empowerment.

- Since household borrowing and saving have traditionally been the normative responsibility of women, supporting village development and savings groups fostered gender inclusiveness in terms of membership and access to credit.

([Verzosa et al, 2021](#))

How CSVs can be scaled

By nature, local farming and homestead systems are diverse. Farmers have long been practicing CSA strategies from indigenous knowledge or supported by local government and civic organizations. The gap is in getting these various forms of local knowledge synergized with the evolving climate science, then recognized, valued, and scaled outwards through horizontal exchanges and upwards through policy and institutional reforms.

Scaling out CSA technologies refers to spreading the practice to more farmers within the village and other villages with similar contexts. The following are some out-scaling approaches used in climate-smart villages:

- Social learning can greatly facilitate the scaling of local adaptation at the sub-national levels. Social learning methods include farmer field days that facilitate farmer-to-farmer extension and roving workshops for experiential learning. More research on social learning dynamics is needed to gather evidence of CSA scaling up and out impacts.

- Partnering with local non-government organizations (NGOs) whose staff are embedded in the climate-smart villages allows for close monitoring, coaching, and handholding of early adopters of the adaptation options.
- Levels of local scaling can be achieved through financing mechanisms such as VDFSGs.

Scaling up involves engaging policymakers, donors, investors, and development institutions that can facilitate the institutionalization or mainstreaming of tested CSA technologies and continued support for CSVs into government projects and programs. Approaches to get buy-in can include:

- Documenting and communicating evidence of socially-inclusive, gender-transformative local actions for building adaptation capacities and climate resilience of smallholder farming households;

- Systematizing the “portfolio approach” to climate change adaptation and capturing impacts on social inclusion of marginalized populations; and
- Strengthening capacities of local adaptation platforms in inclusive and participatory agricultural research on climate action.

Guinayangan CSV Scaling Out and Up in the Philippines

Guinayangan Municipality in the province of Quezon is located along the eastern seaboard of the Philippines, where an annual average of 20 typhoons from the Pacific first make their landfall.

An outcome harvesting study in 2021 traced the immediate, intermediate, and ultimate outcomes of establishing a Climate-Smart Village (CSV) in Guinayangan in 2014.

The CSV served as a laboratory where climate-smart technologies and practices were tested, promoted, and scaled out. Of the 54 villages in the municipality, 22 of them became CSVs.

Through a CSV, Climate-Smart Agriculture was introduced as an integrated approach that aims to achieve short- and long-term agriculture development priorities in the face of climate change.

The pioneering work of establishing a CSV in Guinayangan became an avenue for promoting interventions to address climate change in a local government in the Philippines.

The CSV became a learning platform for farmers – experiences and knowledge were gained and spread not only within their learning groups but also to other farmers, community organizations, and local executives in the municipality.

The achievements and contributions of CSV in Guinayangan have reached a larger scale – it influenced the national implementation of the Adaptation and Mitigation Initiative for Agriculture (AMIA) Program, a flagship program by the Department of Agriculture (DA). AMIA villages were established across all regions of the Philippines, many of which were inspired by the opportunities to visit CSVs in Guinayangan.

Conclusion

Climate-Smart Villages that serve as platforms for resilience building, women empowerment, equity, and sustainable food systems can offer game-changing, systemic solutions to 'wicked' problems faced by family farmers and village-level smallholders.

CSVs can build resilience by undergoing a series of steps that embrace participatory approaches as the climate crisis unfolds. Building on social support mechanisms, location-specific strategies, and complementary production systems contributes to actionability and sustainability.

CSVs can nurture sustainable food systems by increasing access to local markets to nutritious food even during shocks and stress, like during the COVID-19 pandemic.

CSVs can foster equity by giving due attention to geographic and social group targeting during its formation stage. This early investment helps remove barriers to undertaking gender-transformative and socially-inclusive climate adaptation actions.

Gender considerations, when integrated into designing CSVs, attune project implementers to the practical needs of women and roll out measures that enable women to become active agents in resilience building.

CSVs have impact potential at scale when they out-scale through social learning, including experiential learning (learning by doing), and upscale through documenting and communicating evidence of impacts on marginalized populations.

References

1. Local Food Systems in Cambodia, Myanmar, and the Philippines: Perspective from the Local Communities (<https://hdl.handle.net/10568/113826>)
2. COVID-19 impact on local agri-food system in Cambodia, Myanmar, and the Philippines: Findings from a rapid assessment (<https://hdl.handle.net/10568/113843>)
3. Cost-Benefit Analysis of Native Pigs as a Climate-Smart Agriculture Option in the Philippines (<https://hdl.handle.net/10568/114389>)
4. Financial and environmental benefits from fruit trees in Myanmar's central dry zone: Case Study from Htee Pu Climate-Smart Village (<https://hdl.handle.net/10568/114390>)
5. A Financial Analysis of Homestead Native Chicken Raising: A Climate-Smart Agriculture Option Adopted in the Province of Koh Kong, Cambodia (<https://hdl.handle.net/10568/114901>)
6. Coconut-based Systems in the Philippines: Intensification and Diversification with Climate-Smart Agriculture (<https://hdl.handle.net/10568/115290>)
7. Microcredit and savings associations for building rural household resilience: A case study of selected village development fund and savings groups in Koh Kong and Mondul Kiri, Cambodia (<https://hdl.handle.net/10568/115997>)
8. Pathways to Women's Empowerment in the Promotion of Climate-Smart Agriculture in the Philippines, Myanmar, and Cambodia (<https://hdl.handle.net/10568/118153>)
9. [IIRR-IDRC Research briefs](#)
10. [ClimBeR Thematic Briefs](#)
11. United Nations Food Systems Summit 2021 Synthesis of Game-Changing Propositions for Action Tracks 1 to 5

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About CGIAR & ClimBeR

CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis. Building Systemic Resilience Against Climate Variability and Extremes, or ClimBeR, is one of the Research Initiatives in its new research portfolio that will deliver science and innovation to transform food, land, and water systems in a climate crisis. ClimBeR aims to transform the climate adaptation capacity of food, land, and water systems in the Philippines and five other countries, ultimately increasing the resilience of smallholder production systems to withstand severe climate change effects like drought, flooding, and high temperatures. For more information, please visit <https://www.cgiar.org/>

About DA-AMIA

AMIA is a flagship program of the Department of Agriculture for climate adaptation and mitigation. Coordinated and managed by the Systems-Wide Climate Change Office (DA-SWCCO). For more information, please visit <https://amia.da.gov.ph/index.php/about-the-program/>

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The International Institute of Rural Reconstruction (IIRR) is an international not-for-profit organization with a mission to enable communities and those who work with them to develop innovative, yet practical, solutions to poverty through a community-led development approach, and to widely share these lessons to encourage replication. For more information, please visit https://www.iirr.org_