Info Note

Scaling the Climate-Smart Village model in national-level programs:

The recommendations for adoption in the implementation of the Nông Thôn Mới (Vietnam's National Target Program on New Rural Development) 2021-2030 Strategy

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Key messages

- The Climate-Smart Village (CSV) model showcases rewarding outcomes for the agricultural sector of Vietnam, such as better farm productivity, improved climate resilience, and reduced greenhouse gas emissions.

- The New Rural Development Program or *Nông Thôn Mới* (NTM) is a national target program of Vietnam that has enabled 57% of rural communes to achieve the NTM status, which aims to raise the socio-economic standard of living of small communities while facilitating agricultural development.

- Agricultural development is threatened by the impacts of climate change, which carries high risk for an agriculture-dependent country like Vietnam.

- The CSV model[1] can be applied in the NTM to help the communities under this program achieve "advanced" and "demonstration" status based on 19 criteria.

- Clear operational guidelines should be drafted to successfully integrate the CSV model into the NTM, alongside context-specific financial channels and monitoring and evaluation systems.

Introduction

The *Nông Thôn Mới* (NTM) or the National Target Program on New Rural Development is a nationwide program in Vietnam, which aims to lift the material and cultural living standards of people, develop growth-enabling infrastructure, and achieve proper economic restructuring and production modes. In addition to aims for agricultural development and cultural preservation, the program's

2021-2025 strategy emphasizes enhancing the resilience of rural communities to climate change impacts and other shocks.

There are 19 criteria under the NTM program which fall under the major categories of: planning, growth-enabling infrastructure, economic and production organization, culture-society-environment, and political system. Several criteria highlight the importance of agricultural productivity, climate resilience, and environmental conservation in achieving the NTM status. From 2021, communes can achieve the 'advanced NTM' and 'demonstration NTM' designations by satisfying 6 of the 19 criteria.

Initially implemented from 2010–2020, the NTM program strategy has achieved great success, by which 57% out of nearly 9,000 rural communes have met the NTM standards (Central Steering Committee 2020). However, the program has not yet addressed the impacts of climate change in agricultural production in vulnerable rural areas (Bui et al. 2020).

With the development and future implementation of the NTM 2021–2030 strategy, the CSV model, which has been successfully tested in three major agro-ecological regions of Vietnam, offers a model to improve program outcomes by enhancing commune capacities for climate adaptation and resilience.

The Climate-Smart Village model

CCAFS developed and implemented the CSV model to generate evidence on the effectiveness of climate-smart

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[1] Bui LV 2021 https://cgspace.cgiar.org/handle/10568/114257

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agriculture. Being implemented in South and Southeast Asia, East and West Africa, and Latin America, the CSV model aims "to generate evidence at local scales of what CSA options work best, where, why, and how, and use this evidence to draw out lessons for policymakers, agricultural development practitioners, and investors from local to global levels" (Aggarwal *et al.* 2018).

Specifically, the CSV model aims to: evaluate CSA options for productivity, adaptation, and mitigation; develop solutions for future climate change impacts; learn the factors affecting adoption; and identify effective socially-inclusive and integrative financial and policy tools (Aggarwal et al, 2018). Major components of a typical CSV model are climate-smart agriculture technologies and practices (T&Ps), climate information services, insurance, institutions, policies, and finance (Aggarwal et al, 2018).

Introduced by CCAFS Southeast Asia in Vietnam in 2015, CSVs were established in the country to serve as a multisectoral platform for testing the technological and institutional options for climate change adaptation and mitigation in agriculture. CCAFS SEA established three CSVs in the country, such as Ma, My Loi, and Tra Hat. Through the leadership of various CGIAR centers, such as the International Center for Tropical Agriculture (CIAT), World Agroforestry Centre (ICRAF), and International Rice Research Institute (IRRI). The CSVs have served as the convergence points of different interventions that are implemented by CCAFS-funded projects, other CGIAR projects, and other development projects that operate in Vietnam.

In the span of five years, the three CSVs in Vietnam have produced significant outputs and outcomes (Bonilla-Findji and Bui 2017):

Ma CSV. Ma CSV serves as the learning site for CSA in Yen Bai province and nearby communities. CSA T&Ps were introduced in Ma CSV, such as the improved cookstove for generating bioenergy and biochar, techniques for crop residue and animal manure management, System of Rice Intensification, and cassava intercropping on sloping lands. CCAFS SEA, together with its partners, also implemented capacity-building and engagement activities, such as participatory land-use planning, roving workshops; and Photovoice, wherein farmers used photos to convey their needs and wishes for enhanced climate resilience to policy makers. Based on the lessons from implementing Ma CSV, two additional CSVs representing the other agro-ecological regions in Yen Bai province were established under a joint funding mechanism between the Vietnam Ireland Bilateral Education Exchange (VIBE) of the Irish Aid and the NTM Program through the collaboration between Vietnam National University of Agriculture (VNUA) as the lead partner, National University of Ireland Galway (NUI Galway) and CIAT.

My Loi CSV. My Loi CSV successfully evaluated and developed scalable CSA technologies and practices (T&Ps), such as orange-based agroforestry systems, black pepper home gardens, acacia-based agroforestry systems, and vermiculture. In terms of climate information services, farmers in My Loi CSV were able to: build a simple meteorological station that generates more accurate weather forecasts; and produce forecasts and agro-advisories using participatory scenario planning. These CSA T&Ps were selected for scaling and incorporated in the commune development plan, New Rural Development plan, and district farmer union and Department of Agriculture and Rural Development (DARD) programs. Various capacity building and stakeholder engagement activities were also implemented in the CSV, such as Community Innovation Fund (CIF) — a loan allowing farmer interest groups to implement CSA initiatives in their communities (Le *et al.* 2018), Photovoice, art and technology exhibits, and trade fairs.

Tra Hat CSV. In Tra Hat CSV, Pest-Smart interventions were successfully implemented, such as ecological engineering (EE), extension services through Plant Clinic, and education and awareness raising activities (Sivapragasm *et al.* 2017). Several CSA T&Ps were also introduced to the farmers such as climate risk-resilient rice cultivars, using rice straw for mushroom production, and building home-made gasifier stoves.

The CSV model has been recognized by the Ministry of Agriculture and Rural Development (MARD) of Vietnam in 2016 as a platform for promoting CSA implementation in climate-vulnerable rural communities. The CSV model was evaluated by NTM as an effective tool for climate change adaptation. The bottom-up approach of CSV was deemed effective in understanding the current situation of climate risk, the need for change, the receptiveness of communities to undertake on-site response actions, and adaptation. This model will help the NTM program to allocate finance more effectively by properly assessing the capacity and need for building and enhancing capacity to respond to climate change for each locality.

Mainstreaming the CSV in the NTM criteria

An assessment was done by VNUA (Bui 2021) to assess the results of various local and international research studies on the establishment of CSVs. Using the PRISMA method, a "transparent and complete reporting" research approach, the study described a process of 20 activities in developing a CSV that is appropriate in the Vietnamese context. Based on 13 eligible research studies collected and analyzed, the assessment proposed the application of this process within the NTM Program to help climate-vulnerable communes that have met NTM standards

Table 1. Recommendations of mainstreaming CSV into 6/19 relevant NTM criteria for the 2021-2030 Strategy

Major steps	Situation Analysis – Needs Assessment						SM	Design - Planning				Implemen-tation				Scaling						M&E	
NTM criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14	7	15	16	17	18	19	7	20	13
Communal planning[1] Infrastructural development (NTM criteria 2-9)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Information and Communications							✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Production Organization							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Culture							✓	✓	✓	✓		✓		✓	✓	✓	✓			✓	✓		✓
Environment							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓

[1] Communal planning needs to ensure the mainstreaming of agricultural restructuring with climate adaptation, urbanization of peri-urban areas and meeting rural environmental requirements

continue to achieve the designations of 'advanced NTM' and 'demonstration NTM' towards climate change adaptation.

This CSV model is consisted of six steps: (1) Situation analysis - Needs assessment; (2) Social mobilization; (3) Design - Planning; (4) Implementation; (5) Scaling; and (6) Monitoring and Evaluation) and detailed by twenty activities (Bui LV 2021):

Situation analysis - Needs assessment (SANA)

1. Identifying the objectives and scale of a CSV
2. Determining the geographical boundary of a CSV
3. Identifying climate risks in the area
4. Listing down existing local knowledge and adaptive measures
5. Identifying the potential market for CSA commodities
6. Identifying the resources available for CSV implementation

Social Mobilization

7. Social mobilization activities for CSV implementation
1. Design and planning
8. Consultations with stakeholders
9. Priority setting for implementation of CSA T&Ps
10. Design and planning for CSV implementation
11. Budget calculations for CSV implementation

Implementation

12. Implementation through interest groups and training activities
13. Participation of stakeholders, inclusion of women and poor farmers
14. Sharing of knowledge and results

Scaling

15. Development of demonstration models for scaling
16. Farmer-to-farmer knowledge diffusion
17. Local development/credit programs
18. National programs and policies
19. Involvement of the private sector

Monitoring and Evaluation

20. Monitoring and evaluation of implementation

The study suggested that the CSV model can be mainstreamed into six of the 19 NTM criteria (Table 1), which include: planning, infrastructural development, information and communications, production organization, culture, and environment.

All 20 activities need to be applied in communal planning (activities 1-20) to ensure the participation of all stakeholders, especially the disadvantaged and vulnerable groups. For the infrastructural development criteria, all the activities (1-20) can be integrated. The study proposes that the focus should be on construction and upgrading infrastructures for better climate resilience and adaption of production activities. The activities under this criteria range from: irrigation and drainage; dyke systems for flood prevention; controlling the source of wastewater discharged into irrigation systems; proactive actions for natural disaster prevention under the 4-spot motto; mangrove planting; up to building houses to avoid floods, among others, to match local adaptation requirements for specific climate risks.

Information and communication (activities 7, 9, 10, 12-20) tools need to be effectively utilized in promoting benefits of the CSV model, mobilizing community-based contributions and cooperation, and capacity building for local authorities and farmers in CSV development. Information technology and smart phone applications can help convey information and knowledge to all stakeholders, which helps them easily contribute their ideas to improving the implementation plan, sharing knowledge and experiences for scaling, and monitoring and evaluating results achieved throughout the implementation process.

Next, the production organization (activities 7-20) should be carefully and specifically planned based on the SANA results, promoted and replicated through social mobilization activities. Farmers proactively cooperate with relevant stakeholders in monitoring, evaluating, and reporting the results of the production process to various project management levels.

Communication and social mobilization activities in the CSV model (activities 7-10, 12-16, 20) should be harmoniously mainstreamed into the cultural values and activities of the climate-resilient NTM development. These can be done by integrating CSV activities into the village rituals and gatherings; and tapping existing and effective indigenous means of communication such as loudspeakers, local newspapers, agricultural extension materials, and community libraries (Bui *et al.* 2015, 2016, 2017, 2019). The environment criterion (activities 7-20) needs to be aligned with CSV development activities to thoroughly resolve current environmental issues in climate-vulnerable rural areas in NTM implementation towards climate adaptation and resilience.

Multi-level coordination and cooperation framework in implementation of 'advanced NTM' and 'demonstration NTM'

Bui *et al.* (2020) analyzed the opportunity of mainstreaming climate change adaptation in achieving the status of advanced NTM and demonstration NTM. The implementation of CSA T&Ps within a CSV environment (Bui and Vu 2020) would be essential for climate-vulnerable rural communities to enhance adaptive capacities and resilience as core conditions for achieving the two status above, applicable to 57% of the communes that have achieved the NTM status. A multi-level scheme has been proposed to leverage interactive coordination and cooperation of different administrative government levels in implementation of the advanced NTM and demonstration NTM status across the country (Figure 1).

In this scheme, the bottom-up and top-down approaches need to be harmoniously and complimentarily implemented. At the grassroots level, the evaluation of
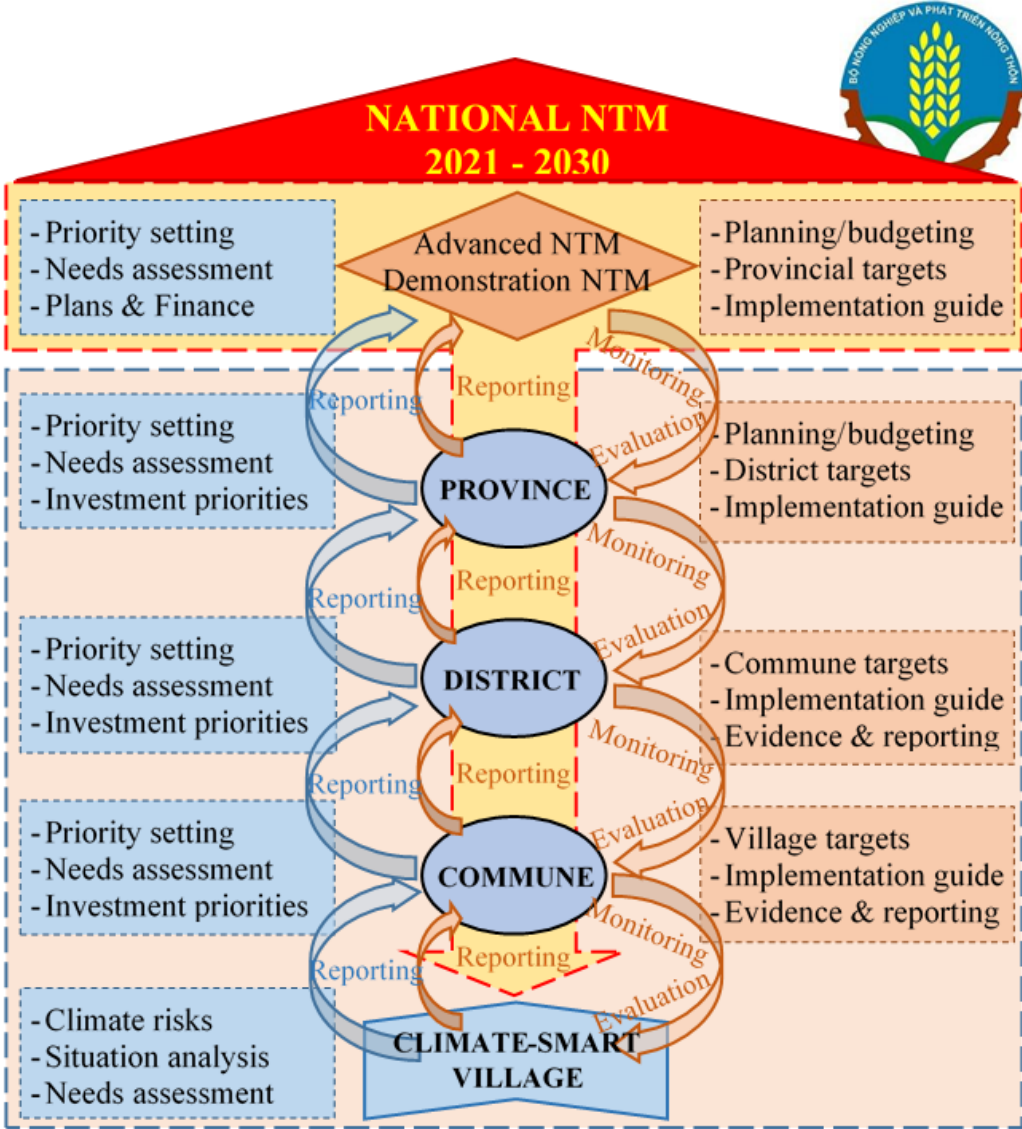

Figure 1. Multi-level coordination and cooperation framework in CSV-based NTM implementation

available resources, needs for change and investment priorities is aggregated from all villages and reported to commune, communes to district, and districts to province (blue arrows). Provinces, prioritized for enhancing climate adaptation and resilience, develop and submit synthesis reports to MARD for national evaluation and budget prioritization for implementation of the advanced NTM and demonstration NTM status.

In the opposite direction, the national NTM program needs to review and approve climate change adaptation indicators for achieving the two NTM status for NTM accomplished communes in areas of high climate risks. The six-step CSV implementation process and its components should be approved and developed into detailed implementation guidelines that can be flexibly applied in different locations with climate vulnerabilities. Based on the national plan for 2021-2030, the NTM program assigns specific targets to provinces with distinct climate risks. The provinces assign targets and tasks to districts, districts to communes, and communes to villages.

To achieve the targets and expected outcomes and impacts, the national NTM program needs to develop a set of multi-level guidelines for monitoring and evaluating performances of all implementation levels from central to grassroots levels. These guidelines should allow a flexible application at context-specific locations provided that the bottom-up reporting to higher management levels can still meet minimal requirements for synthesis reports (larger orange arrows). After submitting the ME reports, communes and districts proceed a review procedure for achieving the 'advanced' NTM and 'demonstration' NTM status for communes that have proven of their enhanced climate adaptive capacities and resilience (smaller orange arrows).

Policy recommendations

In order to successfully mainstream the CSV model into enhancing adaptive capacity and resilience to climate impacts within the national NTM 2021-2030 Strategy the following actions are recommended:

1. Adopt the six-step CSV process to improve the adaptive capacity and resilience for climate-vulnerable rural communities nationwide and help them achieve 'advanced NTM' and 'demonstration NTM' designations.

2. Draft and implement an operational guideline to facilitate better and more efficient coordination and cooperation of relevant stakeholders from MARD, provincial DARD, national and local hydro-meteorological and extension bodies, civil organizations, and the private sector, among others. Information and data sharing should also be efficient and monitored across all levels to document progress and achieve the target outcomes.

3. Financial facilities should be accessible at the ground level. Monitoring and evaluation of results should be implemented considering a combination of top-down and bottom-up approaches and leveraging synergies with existing investment programs. This setup will facilitate the implementation of and investment to CSV in the provinces, which will be conducted by them with little to no external interventions.

4. Develop technical guidelines to implement the CSV model based on its implementation in Vietnam since 2015 and integrated into the 2021-2030 NTM strategy.

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