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**Minimum guidelines for  
CSV implementation**

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## INTRODUCTION

Climate change adversely affects many aspects of social life. In agricultural production, climate change creates impacts on crop and livestock productivity, farming measures, thereby national food security. Facing the problems that climate change causes, finding out the measures to adapt and mitigate the impacts of climate change is extremely necessary. These measures on the one hand help ensure food security; on the other hand, improve climate change adaptation and resilience. Residential community is the first and foremost affected by climate change impacts that tend to increase apparently over time. For example, the decrease in crop productivity due to impacts of extreme weather events such as storms, floods, droughts, etc. To reduce climate risks, the leveraged synergies in climate-smart villages (CSVs) in implementing and scaling climate-smart agriculture technologies and practices (CSA T&Ps) is crucial to enhance climate change adaptation and resilience.

"Climate-Smart Village" (CSV) is a new concept, understood as a rural community together applying different measures to adapt and mitigate impacts of climate change. The word "VILLAGE" in the CSV term emphasizes the solidarity of all people in the community to implement adaptation and mitigation measures together. In addition, the word "VILLAGE" also shows the bottom-up approach of the model, an effective approach to resolve the root of problems when representing the voice of the people. In Vietnam, 03 CSVs have been established for 03 distinctive ecological regions of Vietnam, including Yen Bai province (the northern mountainous region), Ha Tinh (the central region), and Bac Lieu (the Mekong River Delta), which is within the framework of the CCAFS (Climate Change, Agriculture and Food Security) program in Southeast Asia in the 2015-2018. In accordance with the global CCAFS program, these 03 CSVs aimed to address 03 important issues: (i) climate change adaptation; (ii) climate change mitigation and (iii) increasing productivity and people's incomes.

In Yen Bai province, the 1<sup>st</sup> CSV was introduced and piloted in Ma village, Vinh Kien commune, Yen Binh district (agroecology 1) in the 2015-2018 period with the CCAFS funding. The successful implementation of this model has paved the way for the Vietnam National University of Agriculture (VNUA) research team to replicate the model to the two remaining agroecological sub-regions of the province, namely Cau Vai village, Mau Dong commune, Van Yen district (agroecology 2) and Nong Truong village, Thuong Bang La commune, Van Chan district (agroecology 3). The expansion of the CSV initiative in Yen Bai has been jointly funded by the Irish Aid under the Vietnam Ireland Bilateral Education Exchange (VIBE) of the Embassy of Ireland in Hanoi and Vietnam's Ministry of Agriculture and Rural Development (MARD) through the National Target Program on New Rural Development (NTM). These funds have been implemented through two projects: 'NUI Galway – Vietnam National University of Agriculture (VNUA) Vietnam Ireland Bilateral Education Exchange (VIBE) Programme on Climate Resilient Agriculture & Environmentally Sustainable Landscapes' for 2019-2021 and 'Scaling climate-smart villages in Yen Bai province to promote implementation of climate-smart agriculture and One Commune One Product (OCOP) initiative of the National Target Program on New Rural Development' for 2020, respectively. The 03 successfully established CSVs representing all 03 agroecologies have proven the effectiveness of the CSV approach in

collecting synergies in rural communities for enhancing adaptive capacity and resilience to climate impacts. And this approach has a good potential for adoption in the implementation of the NTM program in the 2021-2030 Strategy towards improved climate adaptation and mitigation.

Given the evidence for applicability of the CSV approach in the NTM program in building capacities for climate adaptation and mitigation, there isn't any guideline document that is officially approved for implementation within the program. Based on the science-based evidence from the joint CSV work in Yen Bai as well as lessons learnt from global experiences, the VNUA team presents detailed guidelines for CSV implementation at the village and community levels. This document consists of 06 implementation steps that are detailed from the systematic review studies of [Bui Le Vinh and Vu Thanh Bien \(2020\)](#) and [Bui Le Vinh \(2021\)](#). These steps are as follows:

**Step 1:** Situation Analysis – Needs Assessment (SANA)

**Step 2:** Social Mobilization

**Step 3:** Design – Planning

**Step 4:** Implementation

**Step 5:** Scaling

**Step 6:** Monitoring – Evaluation

There are two main parts in each step: (i) General concepts and (ii) Implementation procedure.

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## EXPLANATION OF TERMINOLOGIES

1. **Climate-Smart Village (CSV):** is a community that applies different measures for adaptation and mitigation of climate impacts for maintaining livelihoods<sup>1</sup>
2. **Climate-Smart Agriculture Technologies and Practices (CSA T&Ps):** are measures to adapt to and mitigate impacts of climate risks to maintain productivity and incomes of farmers and the overall agricultural development. Agriculture is considered 'smart' only when achieve three CSA pillars of adaptation, mitigation and food security<sup>2</sup>.
3. **Adaptation:** The adjustment of a natural or human system to respond to the actual or future impacts of the climate thereby reducing harm or taking advantage of benefits (IPCC, 2001).
4. **Mitigation:** Technical changes and alternatives to reduce greenhouse gas emissions.
5. **Livelihoods:** are the combination of human resources and abilities combined with the decisions and activities they take to earn a living and to achieve their goals and aspirations.
6. **Theory of change:** a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context based on interventions that are designed for the change.
7. **Indigenous knowledge:** is knowledge that has been developed and maintained for a long time based on interactions between people and natural environment.
8. **Climate Change:** "is the change of climate and related components including oceans, soil, Earth's surface, and glacial atmosphere such as temperature rise, melting ice, and sea level rise. In the past, climate change took place for a long time due to the impact of natural conditions, however recently, climate change is caused by the impact of human activities such as the use of fossil fuels in transportation and industrial production, emitting greenhouse gases (eg. CO<sub>2</sub>)"<sup>3</sup>.
9. **Greenhouse gases:** are gases capable of absorbing long-wave (infrared) radiation reflected from the Earth's surface when illuminated by sunlight, then scattering heat back to the Earth, causing greenhouse effects. The main greenhouse gases include: water vapor, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, O<sub>3</sub>, and CFCs.
10. **Transect walk:** is a tool used to learn about local features, applied in many fields, eg. soil science, social sciences. In the establishment of the CSV model, this tool is used to (1) know the types of land uses; (2) understand the socio-economic-environmental context; and (3) understand local resource distribution.

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<sup>1</sup> Gonsalves, Leocadio Sebastian, Bernadette Joven, Celso Amutan, Ariel Lucerna. 2015. Climate - Smart Villages: Key Concepts. A primer for CCAFS partners in Southeast Asia. International Institute of Rural Reconstruction (IIRR)

<sup>2</sup> CIAT; World Bank. 2017. Climate-Smart Agriculture in Viet Nam. CSA Country Profiles for Asia Series. International Center for Tropical Agriculture (CIAT); The World Bank. Washington, D.C. 28 p.

<sup>3</sup> <https://vietnam.opendevelopmentmekong.net/>

# STEP 1

## SITUATION ANALYSIS – NEEDS ASSESSMENT

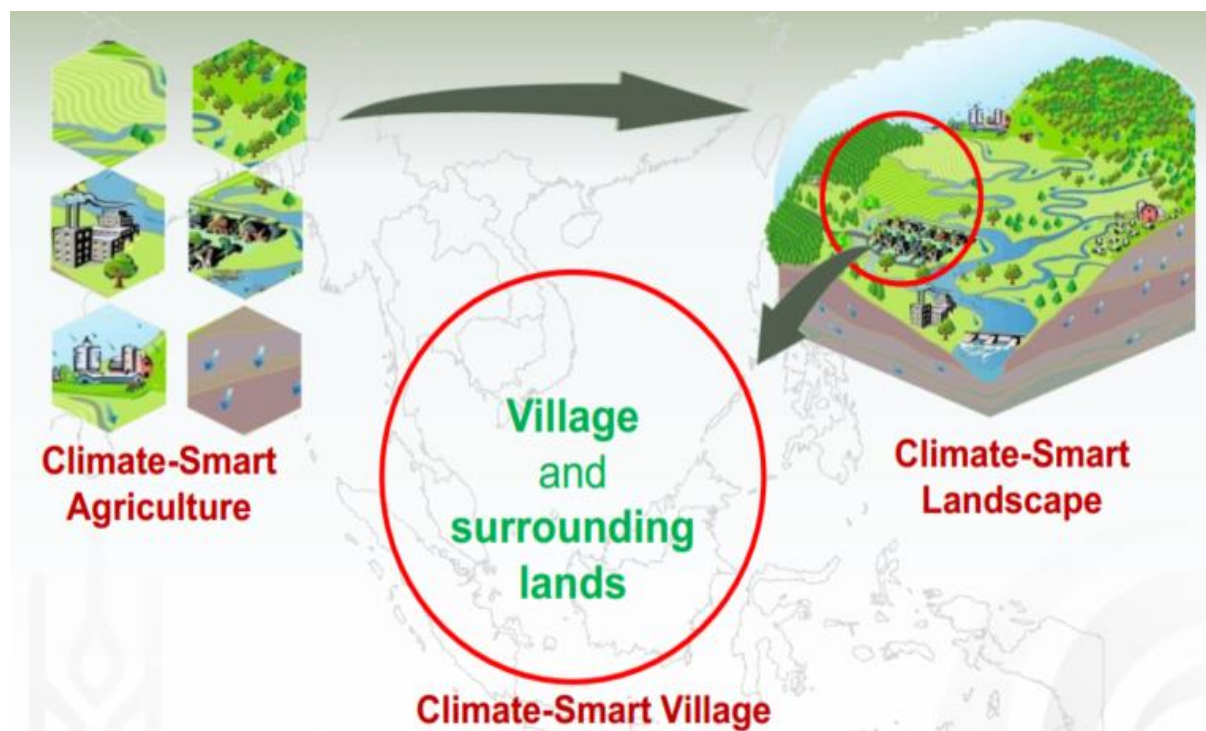


## Part 1

### GENERAL CONCEPTS

#### 1.1. The overall goal of the CSV approach

The overall goal of the CSV approach is to provide the foundation for participatory research and development activities to promote the practice of adaptation, mitigation, and food security measures and, crucially, ensure reference and demonstration for scaling.



**Figure 1.** CSA integration in a CSV (Bui Tan Yen, 2015)

In the context of increasing climate change impacts, choosing a right adaptive model for sustainable agricultural development is an issue that is of concern to many parties including policy makers, scientists and farmers. According to [Khatri-Chhetri et al., 2017](#), many technological solutions in agricultural production have been introduced to help increase crop yields, improve income, increase the efficiency of input resources (eg., fertilizers, labor effectiveness), and reduce greenhouse gas emissions. These are CSA T&Ps. Under the CCAFS program CSA T&Ps need to achieve three goals: (i) Enhancing adaptive capacity (Adaptation); and (ii) Mitigation or elimination of greenhouse gas emissions (Mitigation); and (iii) Sustainable growth in output and income (Productivity) ([FAO, 2013](#)). Around the world, there are many CSA T&Ps suitable for each geographic region and climate context.

Through empirical studies, CSA implementation and scaling is quite site-specific, but can be commonly achieved by using the CSV approach. In Southeast Asia, the CCAFS program has worked in four countries including Laos, Cambodia, Philippines and Vietnam. In Vietnam, 03 CCAFS-funded CSVs have been established for northern Vietnam (Ma CSV in Yen Bai



province), central Vietnam (My Loi CSV in Ha Tinh province) and the Mekong River Delta (Tra Hat CSV in Bac Lieu province). Two more CSVs in Yen Bai province have been established under the joint funding mechanism between the Irish Aid and the government of Vietnam. The set of 03 CSVs in Yen Bai are expected to result in good recommendations for adoption of the CSV approach in improving the implementation of the NTM program in the 2021-2030 Strategy.

**Potential of the CSV approach in helping Vietnam’s rural areas achieve the 02 new titles of ‘advanced’ and ‘demonstration’ NTM communes that are socio-economically and environmentally sustainable.**

In Vietnam, the National Target Program on New Rural Development (NTM) program, launched in 2010, has been implemented to improve agricultural production and rural livelihoods in all 9,000 rural communes since 2011. In the 2011-2020 Strategy, the NTM program applied 19 criteria for communes to achieve the NTM title with foci on building infrastructures for various categories, such as education, health care, production, environment, culture, etc. By 2020, 57% of the total communes have achieved the NTM title in accordance with the 19 NTM criteria. However, many climate-vulnerable areas have failed to mitigate and adapt to climate impacts for not having been capacitated for coping with climate impacts. To improve the overall performance, the Program has intended to improve adaptive capacity and resilience to climate change in the 2021-2030 Strategy, which is a good opportunity for CSA and CSV to be adopted into the largest national program for agriculture in Vietnam. As a result, The NTM project “Development of the model of PBT model to adapt to climate change associated with the development of one product for each commune and contribute to building a new countryside in the period of 2021-2025” under the management of VNUA has been funded. Inputs from the project are expected to improve the 19 NTM criteria in achieving the 02 new titles of ‘advanced’ and ‘demonstration’ NTM towards climate adaptation and mitigation in the 2021-2030 Strategy ([Bui Le Vinh, 2020](#)).

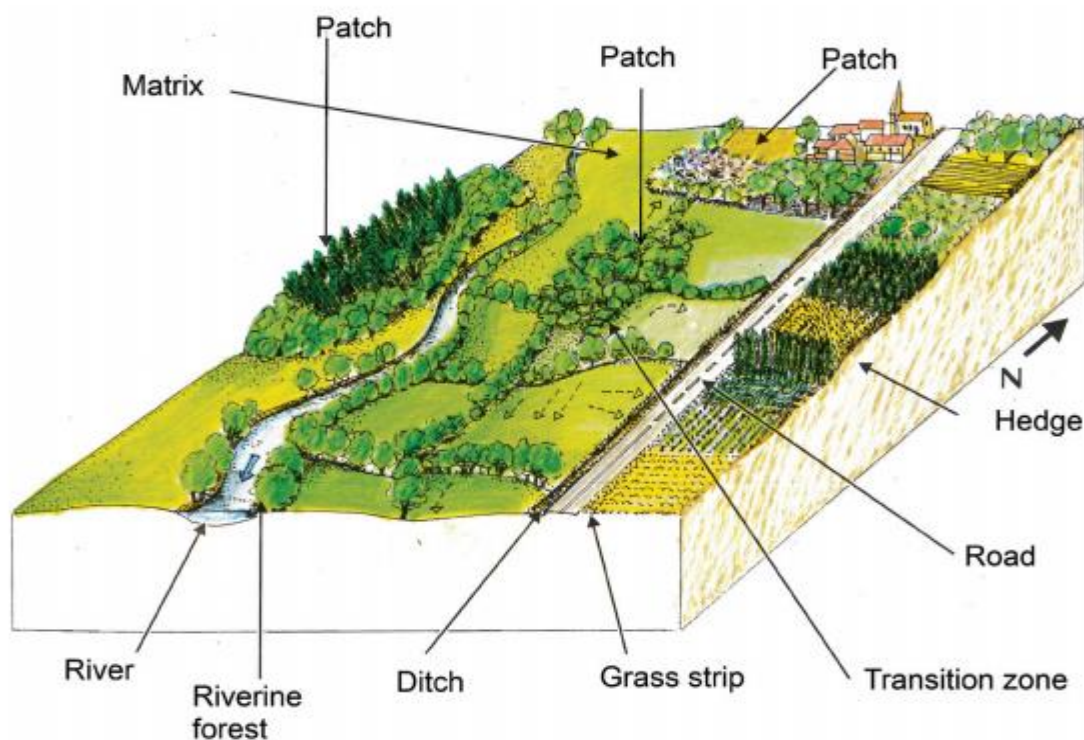
**The landscape approach-based CSV model aims to resolve climate issues in areas of heterogeneous characteristics**

“Approach landscape” refers to the simultaneous application of many models, tools, methods and approaches in an area (landscape) to achieve three main goals: sustainable economic and social development<sup>4</sup>. In this approach, there is not a "success" formula that applies to all regions, but is rather context-specific. The way of thinking about "landscape approach" is often about 'heterogeneity' of an area, for example, diversity of land use types, economic sectors, ethnic groups, occupations, etc. [Figure 2](#) shows the spatial distribution of a rural area where there are different types of land use (residential land, forest land, agricultural land, rivers, streams and specialized water surfaces).

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<sup>4</sup> [http://www.asb.cgiar.org/climate-smart-landscapes/digital-edition/resources/Climate-Smart\\_Landscapes.pdf](http://www.asb.cgiar.org/climate-smart-landscapes/digital-edition/resources/Climate-Smart_Landscapes.pdf)

The main goal of a CSV also goes around the three sustainable pillars like the “landscape” approach. Specifically, CSVs are built/replicated in localities with the goals of (i) Ensuring sustainable growth in output and income (Productivity); (ii) Enhancing adaptive capacity to climate change (Adaptation); and (iii) Minimize or eliminate greenhouse gas emissions (Mitigation).



**Figure 2.** Spatial arrangement of an agricultural land (Fishesser @ Dupuis Tate, 1996)<sup>5</sup>

## 1.2. Geographical boundary of a CSV

CSV needs to be situated in a geographical boundary that carries all representations for a small agroecological area with specific climate risks and typical socio-economic characteristics for the purposes of demonstration and scaling (Bui Le Vinh, 2021).

Although the term "Village" is used in the phrase "Climate-Smart Village", the scale of a CSV is not just "encapsulated" within a village<sup>6</sup> boundary. According to Aggarwal et al. (2018), a CSV can include more than one village that fall within the boundary of 10 km<sup>2</sup>. Having a specific size for a CSV can help best control components deployed in a CSV, especially the CSA T&Ps. Selection and prioritization of CSA T&Ps all follow the cyclic principle to help save and rationally use natural resources, in particular, the wastes of a CSA T&P are inputs for

<sup>5</sup> Torquebiau Emmanuel. 2015. Whither landscapes? Compiling requirements of the landscape approach. In: Climate-smart landscapes: multifunctionality in practice. Peter A. Minang, Meine van Noordwijk, Olivia E. Freeman, Cheikh Mbow, Jan de Leeuw, Delia Catacutan (eds.). Nairobi: World Agroforestry Centre, 21-36. ISBN 978-92-9059-375-1

<sup>6</sup> In Vietnam, village is not considered as an official administrative unit, but a residential area and an important organizational structure of Vietnam’s rural areas.

another/other T&P/s. Figure 3 shows an example of the reciprocal relationship between CSA T&Ps that was developed for the Ma CSV in Yen Bai. Apparently, the three CSA T&P groups of "Conservation agriculture", "Sustainable land/natural resources use", and "Climate-smart rice production" form up a cyclic relationship.

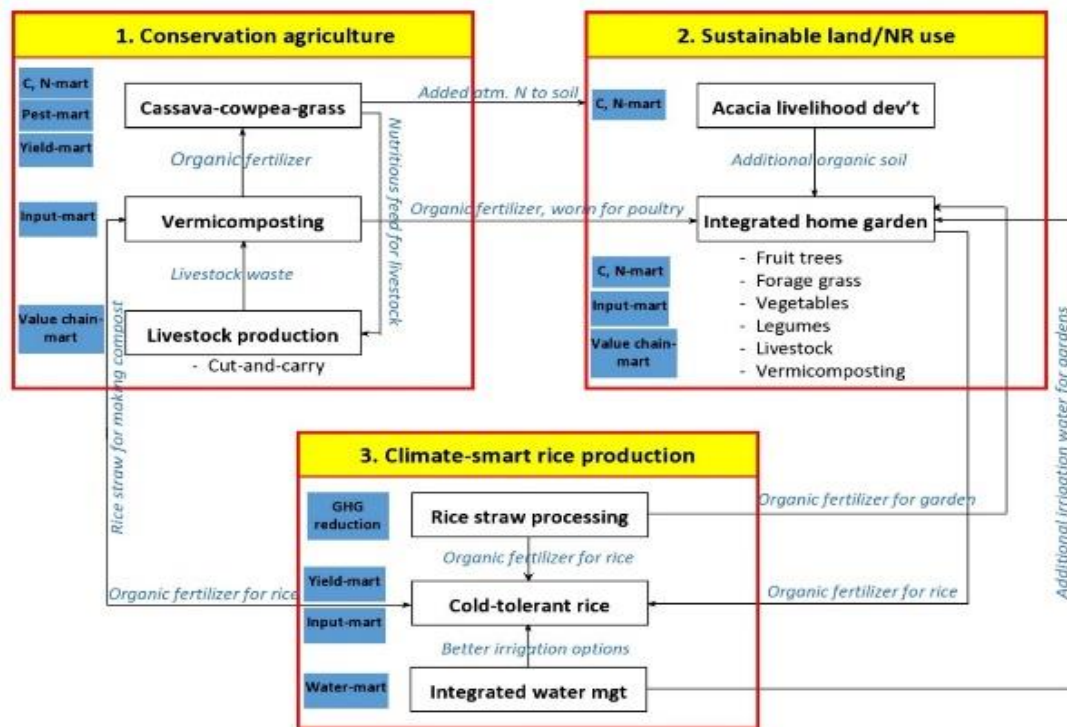


Figure 3. A reciprocal relationship between CSA T&Ps in Ma CSV (Bui et al., 2016)

### 1.3. Identification of climate risks

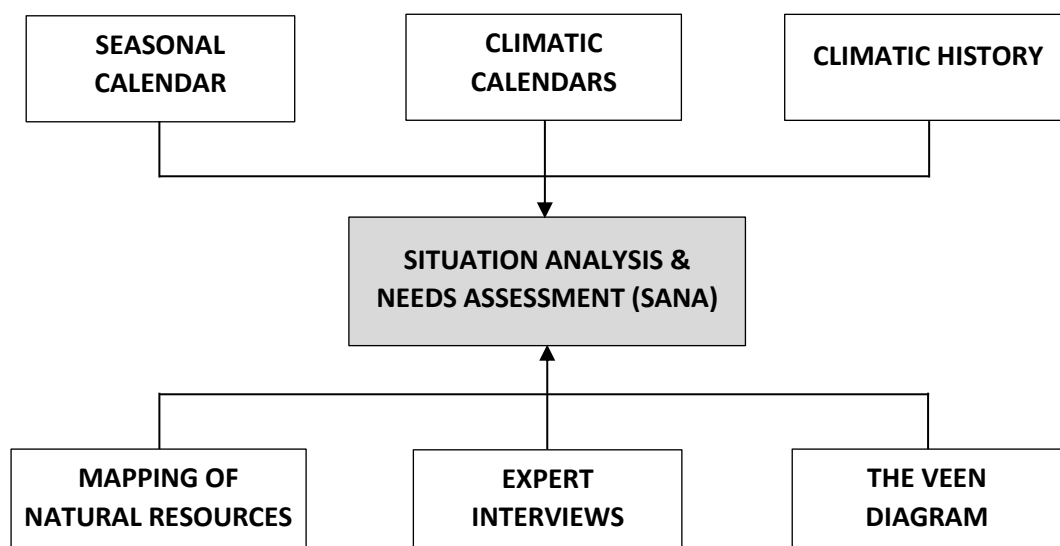
#### A. GENERAL CONCEPTS

Climate risks are the primary issue to be identified prior to the development of a CSV. Accurate identification of climate risks and their impacts on livelihoods will make the selection and prioritization of CSA T&Ps in the next step more correctly and suitably done. An effective tool for identifying climate risks is the CSA-RA as described in Mwongera et al., 2015. The CSA-RA tool can help implement effectively SANA in a project area for CSV development and scaling. Main CSA-RA tools are presented in Figure 4.

#### Seasonal calendar<sup>7</sup>

The seasonal calendar is used to identify main crops and livestock and their temporal production processes within the CSV boundary. Information is collected for each crop/animal regarding the farming calendar, practices, activities, investment (time, labour, finance), constraints for implementations, and the role of men and women farmers in every activity.

<sup>7</sup> See Annex 2 (section 2.1)



**Figure 4.** Tools for conduction situation analysis and needs assessment (SANA)

***Climatic calendars<sup>8</sup>***

Climate calendars are used to define typical weather types for the geographical boundary of the CSV. Information consists of number of seasons in a year, annual and monthly average temperatures, and months in which people face difficulties in agricultural production due to weather anomalies. The purpose of this tool is to help assess people's perceptions of climate change and local adaptive capacities and needs for improvement.

***Climatic history<sup>9</sup>***

This means determination what extreme climatic patterns have been or are happening over a long period of time (about 30 years or longer) and their impacts to local people who live in the CSV boundary. The purpose of this tool is to give surveyors an overview of natural disasters in the area, how they have changed over time, and their impacts on different aspects of local production and livelihoods.

***The Veen diagram<sup>10</sup>***

The Veen diagram is used to identify influence of different actors or stakeholders (agencies, organizations and individuals) on local agricultural production and livelihoods. The purpose of this tool is to determine the level of importance of each actor/stakeholder, so that those with positive impacts continue to maintain and progress; whereas, those that have negative impacts need to take measures for improvement.

***Mapping of natural resources<sup>11</sup>***

The purpose is to investigate the distribution of natural resources, including soils, crops, water resources, forest, grasslands, etc., within CSV boundary, impacts (climate,

<sup>8</sup> See Annex 2 (section 2.2)

<sup>9</sup> See Annex 2 (section 2.3)

<sup>10</sup> See Annex 2 (section 2.5)

<sup>11</sup> See Annex 2 (section 2.4)


production) on their sustainable use, in-place adaptability to climate change, and needs for measures that can improve the situation. The transect walk (*Terminology 10*) tool needs to be used with participation of local knowledgeable farmers to check the accuracy of the map that is also contributed by scientific data and information (eg. geology, pedology, hydrology, forestry, etc.).

### **Expert interviews<sup>12</sup>**

Conduct interviews with village leaders; commune; District; the province about the local economic, social and environmental context. At the village level, it is necessary to learn more about the history of the village, then related to the effects caused by climate change over time. Local departments / offices of agriculture and extension should also participate in the interview to find out the impact of climate change on local agricultural production and available measures (indigenous knowledge) to minimize effects of climate change.

### **1.4 Local knowledge and adaptive measures**

Indigenous knowledge is of paramount importance in the process CSV development. The application of indigenous knowledge will strengthen and contribute to increase the sustainability of the CSV. Locally proven adaptive measures should be included in CSV development as a valuable source of local knowledge. A good lesson learnt is presented in the dialog box below:



The implementation of CSA T&Ps in Cau Vai CSV, Mau Dong commune, Van Yen district has retained the contoured cassava-grass strips for erosion prevention. This measure has been implemented in the village since 2003, initiated by the government of Van Yen. For its effectiveness in soil restoration and improved cassava productivity, it has been kept as a local adaptive measure together with other newly introduced CSA T&Ps.

### **1.5 Analysis and evaluation of potential markets for CSA commodities**

In the 2021-2030 NTM Strategy, the "One Commune, One Product" or OCOP initiative has been created and implemented since 2018 in an effort of leveraging markets for NTM commodities through investing more on local specialties that have high market values (in both domestic and international consumption). According to the [Decision 490/QD-TTg](#), one of the main objectives of the OCOP program is to "improve people's incomes and livelihoods". Every local commodity needs to undergo a strict and high-standard set of evaluation criteria before being given with an OCOP brand. OCOP aims to help local farmers increase their incomes from their local specialties of high market potentials and demands.

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<sup>12</sup> Annex 2 (section 2.6)

Within the framework of the NTM project, the research team investigated the OCOP potential for orange in Van Chan district with inclusion of (i) market information for orange, (ii) market price and production costs, and (iii) distance to potential markets.

### **1.6 Assessment of resources available for CSV implementation**

The resources to be assessed are (i) Human resource, (ii) Land resource, (iii) Infrastructure, and (iv) Financial resource. Resource assessment is also an important basis for identifying suitable CSA T&Ps and essential investments for developing a CSV such as facilities for social mobilization, knowledge sharing and capacity building (loudspeakers, community libraries, information boards, agricultural extension bookcases, etc.), and providing technical support (eg. technical trainings, seeds, animals, equipment) that make the overall investment more most efficient and avoid waste of resources.

## **Part 2**

### **DETAILED STEPS FOR SITUATION ANALYSIS – NEEDS ASSESSMENT**

#### **1. ACTIVITIES 1.1 AND 1.2**

To identify goals (activity 1.1) and size (activity 1.2) of a CSV, a series of farmer workshops need to be organized. Detailed workshop activities are presented as follows:

**Workshop activity 1:** To present and discuss definitions: climate-smart village (CSV), climate-smart agriculture technologies and practices (CSA T&Ps), and sustainable livelihood development.

- Workshop participants: representatives from the provincial, district and commune governments and villagers (village head, leaders of farmer organizations, and farmers).
- Implementation: 3-5 presenters from different research and development organizations, such as the International Center for Tropical Agriculture (CIAT), Vietnam National University of Agriculture (VNUA), and knowledge farmers to discuss the following issues:
  - The CSV model in NTM implementation towards enhanced climate adaptation and mitigation;
  - Capacity building in climate adaptation and mitigation for vulnerable and disadvantaged groups and women farmers;
  - Livelihoods and sustainable livelihood development strategies in the context of climate change;
  - Other social issues: gender and gender equity.

At the end of each workshop, there is a question and answer between experts and participants. Note that during this discussion session, there should be a complete set of recordings (audio and/or video) and note taking for later analysis.

**Workshop activity 2:** Introduction of successfully established CSVs in Vietnam.

A few good examples of successfully established CSVs in Vietnam, for instance the 03 CSVs in Yen Bai or 03 CCAFS CSVs in Vietnam, are selected for making a PPT presentation to share. The presenter needs to be knowledgeable and experienced in the work so information and messages can be effectively delivered. The successful story about the Ma CSV is presented in Annex 1. Q&A session follows after the PPT presentation.

**Workshop activity 3:** Knowledge sharing of hands-on CSV activities

This should be done by some champion farmer who has done the CSV work in one of the successfully established CSVs in Vietnam. This is to show real proof of someone who has done the work on the ground and to show the feasibility of replicating the work to other locations.

## **2. ACTIVITIES 1.3 AND 1.4**

The identification of climate risks in within the CSV boundary (activity 1.3) is done mainly through focus group discussions (FGD). Each FGD consists of 8-10 members for men and women farmers separately. These members must be able to represent the residential community or in other words be diverse in terms of production types, ages, ethnic groups, economic conditions and good knowledge and experience in their village. The project team decides the criteria for group selection and village leaders and local officers recommend farmers for FGDs based on the group selection criteria.

Except for expert interviews, the remaining 5 tools (Figure 4) are carried out in the in the CSV. Each tool has 02 FGDs (men and women). In order to initiate the discussion, the project team needs at least 3 people with 3 different roles, including (i) a facilitator for the discussion process; (ii) a note taker and (iii) a photographer for taking photos of and recording the discussions. Depending on the level of understanding and cooperation of the participants, each tool for a group lasts from 1.5 -2 hours. To ensure the most complete and accurate information is gathered, each tool should be deployed within 0.5 day.

Tools for group discussions include a whiteboard, markers of different colours; A<sub>0</sub> papers, colored papers, duck tapes, a tape recorder, a camera. In addition, coffee, tea, cookies are necessary for breaks.

### ***Main discussion questions:***

1. What are main crops/livestock and impacts of climate on them?
2. What are major climate anomalies and their impacts on agricultural production?
3. How climate has been changed over time?
4. What organizations influence farmers' agricultural production?
5. What are main resources in the CSV and how climate change affects them?
6. What are capacities for climate adaptation and mitigation available?

### **3. ACTIVITY 1.5**

Activity 1.5 is implemented through primary and secondary data collection as follows:

1. Secondary data: Information on secondary data is collected from local socio-economic reports, general information on the local livelihoods within the CSV boundary and of the commune, annual reports on agricultural production, and farmer household economy. Then conduct desk studies to investigate biophysical, socio-economic characteristics as well as advantages and disadvantages for local commodities.

2. Primary data: is gathered through farmer interviews on (i) agricultural production and consumption; (ii) economic efficiencies regarding expanded planting area, productivity, yield, profit, marketing to assess the potential for OCOP products.

3. Develop value chains for OCOP products.

### **4. ACTIVITY 1.6**

Information is mainly secondary data collected from local administrative levels (commune, district, and province), including:

1. Annual socio-economic reports

2. Annual natural disaster reports

3. Annual land management reports

4. Annual thematic reports on: agricultural production and development, environment, etc.

After these reports are collected, desk studies are conducted to process and prioritize data and information for implementation.



## STEP 2

# SOCIAL MOBILIZATION



## Part 1

### GENERAL CONCEPTS

According to [Bui Le Vinh \(2021\)](#), “social mobilization (SM) activities should be carried out throughout the implementation process, from raising awareness about climate change, participating in CSA practice and building CSV, to champion farmers becoming messengers in promotion and replication of the CSV model”.

Main SM activities are as follows:

1. Organize competitions with contents related to climate change and environmental protection. Examples are: Farmers’ voice, cooking competition using indigenous varieties, environmental protection measures, climate change and local adaptive measures, design of climate change adaptation and mitigation, etc.
2. Encourage a reading culture through building community libraries, extension bookcases and information boards;
3. Provide up-to-date weather forecasts for daily sharing with farmers and villagers through the village loud speaker system;
4. Sharing of project staff on climate change related issues.

## Part 2

### DETAILED STEPS FOR SOCIAL MOBILIZATION

#### 1. Some examples for SM competitions

##### 1.1 PHOTOVOICE

###### Objectives

- To help farmers understand better impacts of climate change to their livelihoods;
- To collect concerns of farmers regarding constraints in agricultural production due to extreme climate events;
- To introduce conservation agriculture measures.

**Participants:** CSV farmers

###### Implementation

- People will use their phones to take photographs related to the following issues: (i) impacts of climate change on their livelihoods; (ii) constraints in agricultural production, forestry, and daily life.
- For each photo, participants will write a short story to see the effects of climate change, production constraints, and propose adaptation and mitigation measures.



**Figure 5.** Photovoice activity organized in Nong Truong CSV (agroecology 3), Thuong Bang La commune, Van Chan district, Yen Bai province

##### 1.2 DESIGNING SLOGANS FOR CLIMATE ADAPTATION AND RESILIENCE

###### Objectives

- To help farmers understand impacts of climate change to their livelihoods;

- To leverage farmers' awareness of climate change impacts.

**Participants:** CSV farmers

### Implementation

- Farmers work on their own on different slogan ideas for climate change adaptation and environmental protection;
- Requirements of a slogan: contains maximum 20 words, clear meaning, conveyed message, simple and easy to remember.



**BẢO VỆ NGUỒN TÀI NGUYÊN ĐẤT LÀ TRÁCH NHIỆM CỦA MỌI NGƯỜI!**

*- Cô Nguyễn Thị Nhung – thôn Nông Trường*

**Protection of natural resources is everyone's responsibility**

Ms. Nguyen Thi Nhung – Nong Truong CSV



**BẢO VỆ MÔI TRƯỜNG HIỆN TẠI – GIÚP ÍCH TƯƠNG LAI.**

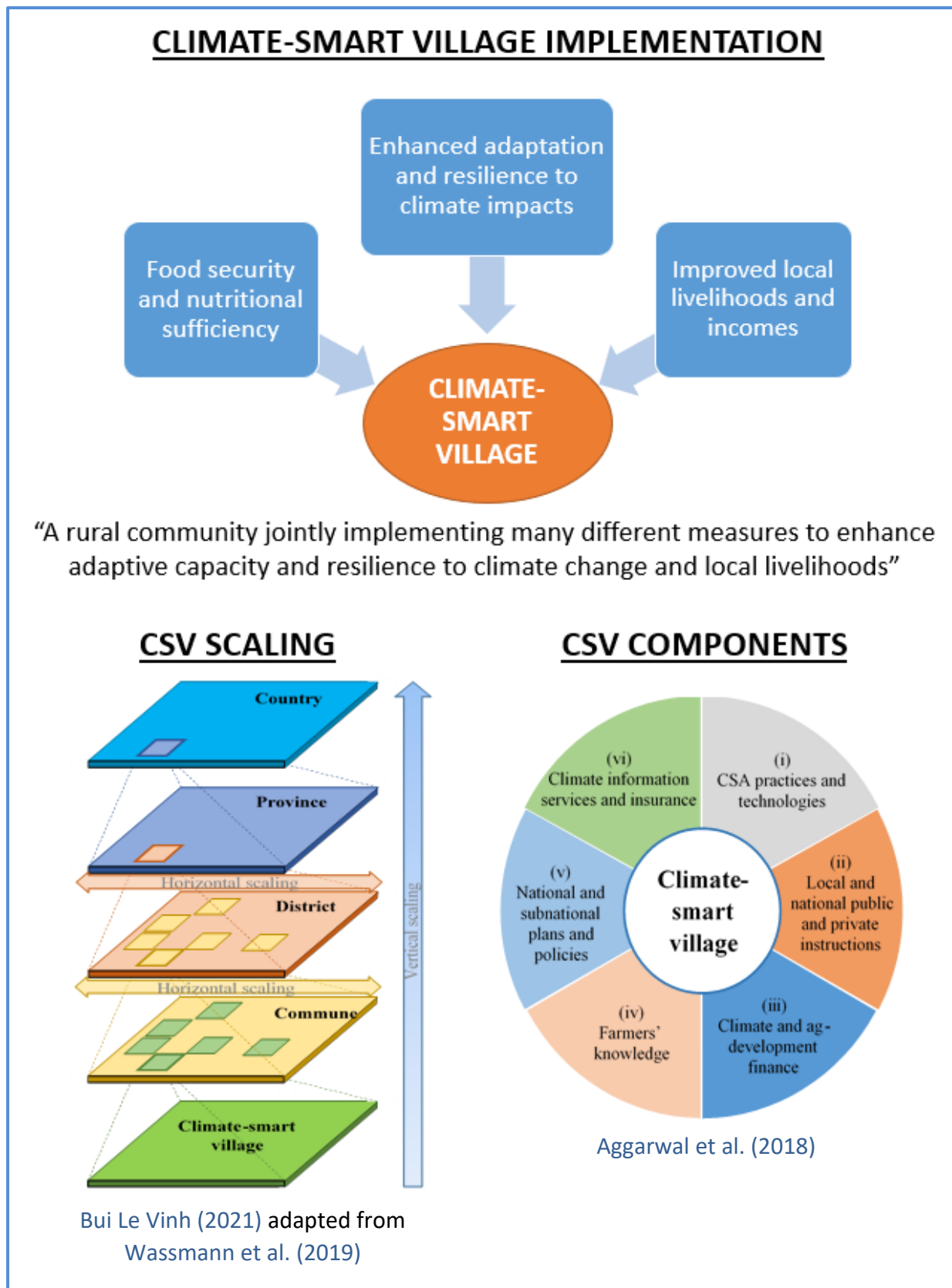
*- Chú Nguyễn Văn Thương – thôn Nông Trường*

**Protecting current environment for future sustainability**

Mr. Nguyen Van Thuong – Nong Truong CSV

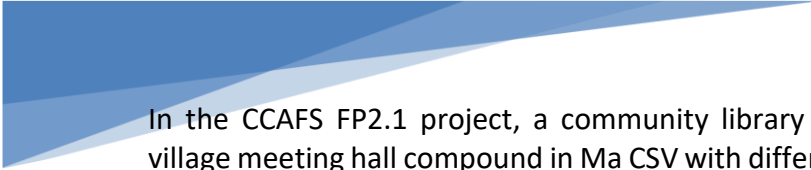
**Figure 6.** Some photos of slogan design for climate adaptation and environmental protection

## 2. Poster for enhancing awareness of climate change impacts



## 2. Community library

In areas vulnerable to climate change, the proportion of people who are aware of climate change issues and its effects is not high. This is due to their educational attainment and little or no access to knowledge and information. An effective way to raise awareness of people about climate change impacts and to improve access to knowledge and information is through improved reading which can be achieved by creating and equipping a village-based community library with different book and reading items, book shelf, tables and chairs, a computer system connected to internet, and regulations for operating the library. The dialog box below presents a specific case of a community library in Ma village and its benefits.



In the CCAFS FP2.1 project, a community library was established within the village meeting hall compound in Ma CSV with different book and reading items, book shelf, tables and chairs, a computer system connected to internet, and regulations for operating the library. The CCAFS SEA and Yen Bai extension center provided with different reading materials that are useful for CSA implementation. This has drawn more people to come, do reading so they can learn different technical guidance from the materials available, and share knowledge and experience in CSA implementation with each other.

Detailed steps for operating the community library:

- **Step 1:** Selecting the best location for putting a village-based community library, ideally within the community meeting compound of the village.
  - **Step 2:** Equip the library with a book shelf, a computer with a good internet connection, white/black board for training and discussions, a set of tables and chairs for knowledge sharing meetings and trainings, and a list of regulations for operation of the library which is discussed and agreed by all villagers.
- 2.1. Book items can come from project reports, research and development projects/ programs, extension materials from Yen Bai extension center, donation from domestic and international organizations, etc.
  - 2.2. Donation from local government and villagers are welcome to complete the library, eg. furniture, books, computer, etc.
  - 2.3. Library regulations are fairly and jointly developed and agreed by all villagers.
  - 2.4. The information board is used to update information on daily weather forecasts, season calendar, and other useful information.

## 3. The village loud speaker system

In many villages, especially in remote areas, loudspeakers are the main means for people to access current news. However, not all villagers can receive information from the loudspeakers if they live too far. Therefore, it's important that the loud speaker system is sufficiently installed so every villager can receive daily updates from it.

Contents that broadcast on loudspeaker can include: (i) CSA implementation measures and benefits of CSA T&Ps; (ii) daily weather forecasts; (iii) seasonal calendar; (iv) new production techniques and provided from different sources, eg. the local government, research and development projects.



**Figure 7.** Mr. Nguyen Van Linh, head of Nong Truong village, Thuong Bang La commune, Van Chan district, Yen Bai province delivers important information to villagers via the loud speaker system in the village (left); and the loud speaker system installed in Ma CSV by the CCAFS FP2.1 project (right)

# STEP 3

## DESIGN - PLANNING





## Part 1

### GENERAL CONCEPTS

#### 3.1 Consultations from stakeholders

According to [Bui Le Vinh \(2021\)](#), consultation with partners in the design and planning step for CSV development is extremely important. The construction of a CSV includes many components so it requires knowledge in many different fields of expertise, such as social science, soil science, agriculture, biotechnology marketing and value chain, etc. The consultation with partners will help the design and planning for CSV development to be highly effective, avoiding risks in the implementation process. At the same time, stakeholder consultation will also help the accounting for items, such as CSA T&Ps, in CSV implementation more accurately, avoiding waste and loss. According to [Aggarwal et al \(2018\)](#), the partners include international organizations operating in the research field, national research networks, non-governmental organizations, private sector, and farmers. In addition, [Bui Le Vinh et al. \(2015, 2016, 2017, 2018, 2019\)](#) argues that consultation with policy makers, agricultural extension organizations and staff and local authorities at all levels plays an important role.

#### 3.2 Priority Setting for implementation of CSA T&Ps

As discussed above, implementation of CSA T&Ps is an important component and plays a key role in the development of CSV. Questions are: Do these measures have a direct impacts on (i) food security?, (ii) reduction of greenhouse gases? and (iii) improved local capacity on climate adaptation? "SEARCH" is understood as finding out CSA T&Ps that are appropriate to the local context. "EVALUATION" means that from the searched CSA T&Ps will be evaluated through a CBA (cost and benefit analysis) tool for further selection. "PRIORITIZATION" means that after an evaluation is conducted, a list of the most suitable CSA T&Ps will be retained for implementation.

#### 3.3 Design and Planning for CSV implementation

From the work of 3.2, a detailed design and plan for CSV implementation is developed before technical activities are implemented in the field. Besides being good guidance to CSV technical implementation, the design and plan important assist the monitoring and evaluation of the implementation process in the later stage.

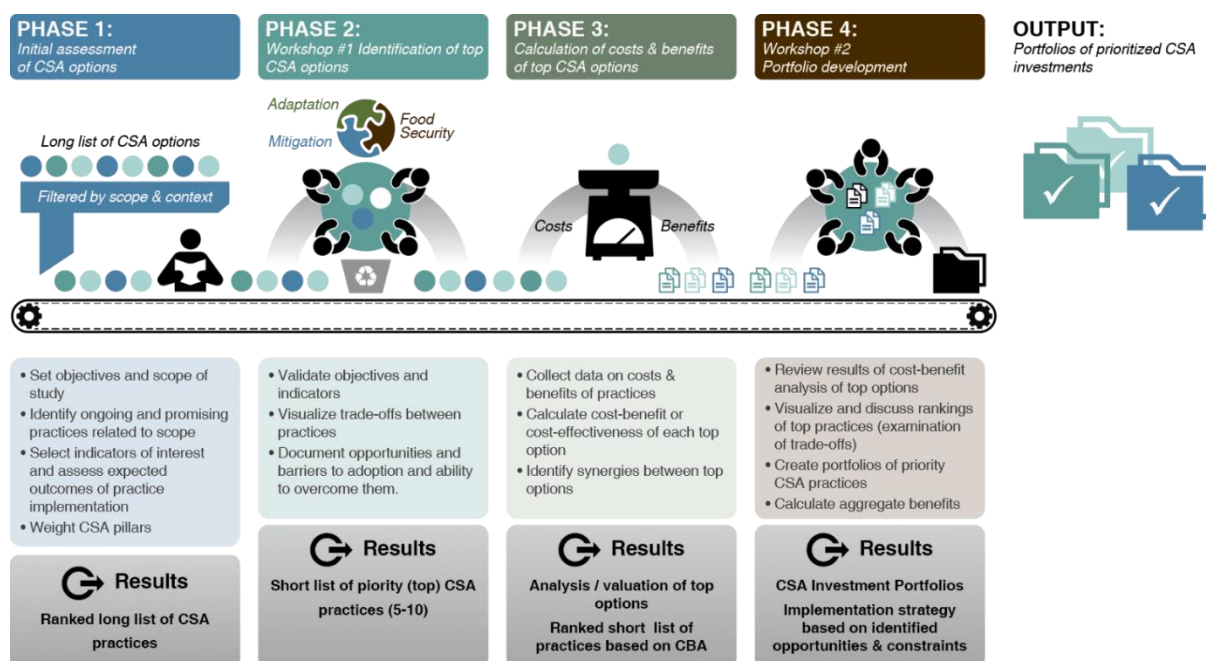
#### 3.4 Budget calculations for CSV implementation

According to [Bui Le Vinh \(2021\)](#), an important job to help achieve the highest financial efficiency is the calculation of the cost for CSV implementation is not mentioned by many studies. Even the CSV models deployed in 3 regions of Vietnam (northern, central and southern) have not implemented this activity, only calculating the cost and benefit of CSA T&Ps. In addition to financial estimation for the items/components in CSV development, this also involves identifying sources of finance for CSV preparation, mainly from the government, people, and development programs domestically and internationally.

## Part 2

### DETAILED STEPS FOR DESIGN AND PLANNING

Priority setting for CSA T&Ps is conducted through the following steps:



**Figure 8.** Main steps in selection and prioritization of CSA T&Ps Các giai đoạn chính trong hoạt động tìm kiếm và lựa chọn giải pháp nông nghiệp thông minh với khí hậu (<https://ccafs.cgiar.org/climate-smart-agriculture-prioritization-framework#.VmtzZo9OLDd>)

#### Step 1. Initial assessment of CSA T&Ps

Based on the results of the SANA survey, CSA T&Ps are selected by experts (scientists, local professionals) and farmers (based on experience and local knowledge). In addition, one of the most suitable documents as a basis for selecting and prioritizing CSA T&Ps is the book "CSA: CLIMATE SMART AGRICULTURE PRACTICE IN VIETNAM"<sup>13</sup>. The CSV approach can be applied flexibly based on specific conditions and characteristics of an area.

After having the initial list of CSA T&Ps, the implementation team move on to assess the three CSA dimensions of food security, adaptation, and mitigation, thereby offering potential for scaling. These indicators are as follows (Table 1).

<sup>13</sup> Pham Thi Sen, Do Trong Hieu, Luu Ngoc Quyen, Le Viet Dung, Nguyen Thi Thanh Hai, Nguyen Van Chinh, Le Khai Hoan, Ha Quang Thuong, Cao Anh Duong, Le Thi Hoa Sen, Ho Huu Cuong, Mai Van Trinh, Tran The Tuong, Che Thi Da, Bui Tan Yen, Ngo Duc Minh. 2017. CSA: Thực hành nông nghiệp thông minh với khí hậu ở Việt Nam. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Wageningen, The Netherlands.

**Table 1.** Indicators for evaluating CSA T&Ps

Category	Indicator	High efficiency	Low efficiency
Economy	Productivity	High/stable	Low/unstable
	Income	High economic value commodities	Low economic value commodities
	Labour requirement	Low, ensured gender equity	High, unbalanced gender equity
	Food security	Secure	Insecure
Adaption	Sensitivity to climate risk impacts	Not sensitive, maintained production, controlled pests/diseases	Not sensitive, unstable production, uncontrolled pests/diseases
Mitigation	Carbon sequestration	High biomass both above and underground	Low biomass both above and underground
	GHG emissions	Long cycles	Short cycles

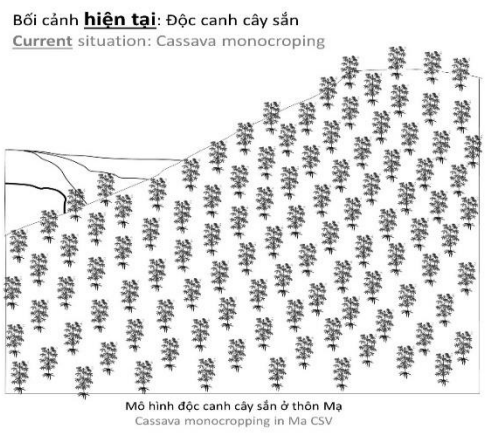
(Duong Minh Tuan et al., 2017)

**Step 2.** Workshop #1 Identification of top CSA options. This workshop is organized to with participation of relevant stakeholders (local farmers, commune leaders and extension workers) to prioritize selected CSA T&Ps. To facilitate the CSA prioritization workshop, each selected CSA T&P is presented in an easy-to-understand A<sub>0</sub> poster as the example in [Figure 9](#). A shorter list of CSA T&P is finalized for the CBA work.

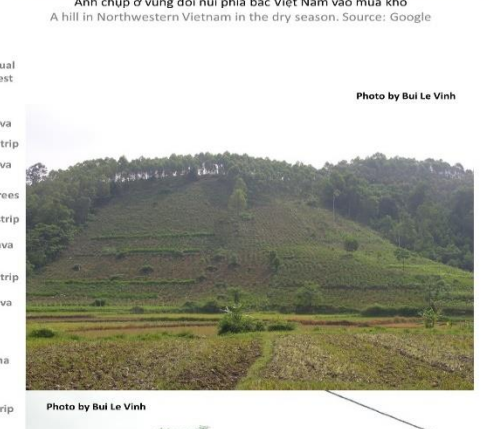
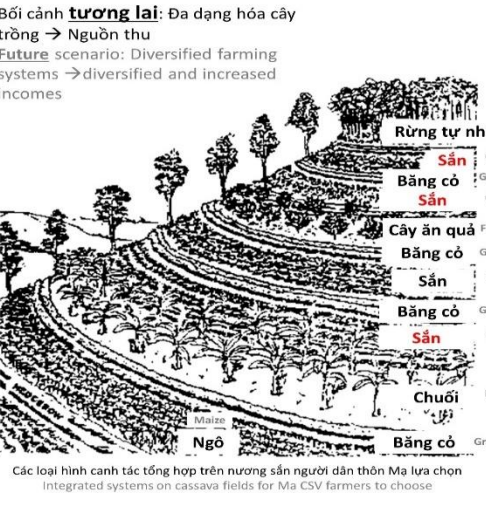
**Step 3.** Calculation of costs and benefits of top CSA T&Ps.

Economic analysis is an essential component to evaluate an agricultural measure, before it is done (ex-ante) or after it has been completed (ex-post). Ex-ante analysis includes measuring the historical return of current practices to predict future payoff outcomes; whereas, ex-post is designed to investigate future impacts of new measures implemented. The main purpose of this step is to identify the most viable CSA T&Ps for CSV site. The cost-benefit comparison of existing operations and CSA T&P is provided to support the prioritization process. Household characteristics are determined to estimate the probability of success of CSA T&Ps and the percentage of farmers likely to adopt.

**1** **Phát triển phương thức canh tác tổng hợp trên đất trồng sắn**  
(Integrated farming systems on cassava fields)



- Vấn đề - Problems:**
- Đất xói mòn, bạc màu, độ ẩm đất giảm (soil erosion, degraded, reduced soil moisture)
  - Đất khô, cứng (dry and hard topsoil)
  - Năng suất cây trồng giảm → thu nhập giảm (decreased crop yields → decreased income)
  - Đầu tư cho phân bón tăng lên do đất ngày càng bạc màu (Increased fertilizers due to degraded soils)



- Lợi ích - Benefits:**
- Giảm xói mòn, độ ẩm đất tăng, độ phì tăng (soil erosion mitigation, increased soil moisture, improve fertility)
  - Đất mặt tơi xốp (high SOM → better aerated and structured topsoil)
  - Năng suất cải thiện, đa dạng hóa sản phẩm → đa dạng hóa và nâng cao thu nhập (Improved yields and diversified crops → increased incomes)
  - Lượng phân bón giảm đáng kể do đất giàu chất hữu cơ (In Van Yen: increased fertilizers due to high SOM content)
  - Có dùng để phát triển chăn nuôi gia súc, cá (Grass is used as feed for livestock and fish)



Hội thảo về Lựa chọn các biện pháp sản xuất nông nghiệp thông minh trong đối phó với biến đổi khí hậu ở thôn Mạ, xã Vĩnh Kiên, huyện Yên Bình, tỉnh Yên Bái  
Participatory workshop on CSA Targeting and Priority Setting in Ma CSV, Vinh Kien, commune, Yen Binh district, Yen Bai province  
Poster prepared by Bui Le Vinh, PhD Soil Scientist, Postdoc on Agricultural Systems and Resilient Landscapes, project CCAFS FP1.1 coordinator, CIAT Asia. Contact: v.bui@cgiar.org

**Figure 9.** Poster example for a CSA T&P (integrated farming systems on cassava fields) in Bui et al. (2015)

To conduct CBA, use a semi-structured questionnaire to collect data on farmer yields, production input variables (farm size, labor use, fertilizer, seed cost, chemical substances, transportation costs, harvest costs, amortization and rental). Additional information collected consists of data on the socio-economic characteristics of farmers (age, education level, farming experience, household size, resettlement, sex and marital status). The willingness of farmers to change their land use status for one of the short-term practices is also taken into account. In addition, additional information on SWOT analysis for CSA T&Ps should be

obtained through in-depth interviews with key informants (village chief, leaders of women union, farmer union, and youth union).

After data collection, data are qualitatively and quantitatively analyzed using different statistical techniques.

$$GM = TR - TVC \text{ (1)}$$

$$TC = TFC + TVC \text{ (2)}$$

$$NP = TR - TC \text{ (3)}$$

In which:

TC = Total cost, TFC = Total fixed cost, TVC= Total variable cost.

GM = Gross Margin, TR = Total Revenue, NP = Net Profit.

The Net Present Value (NPV) is calculated using the formula below:

$$NPV = \sum_{t=0}^{t=n} \frac{R_t - C_t}{(1+i)^t}$$

In which:  $R_t$  - Net cash inflow-outflows during a single year  $t$ ,  $C_t$  – Cost during a single year  $t$ ,  $t$  – Year and  $i$  – Discount rate or return that could be earned in alternative investments.

When the NPV estimate is positive, the investment in land use is considered beneficial. When it is estimated that the net present value is less than or equal to zero, the investment is not profitable, and the landowner should therefore convert his or her investment to another land use.

Several ex-ante estimates have been detected for CSA T&P which were not performed at the time of the study. Estimated differences in productivity, revenue, input costs, and net profit estimates for products were calculated from field trials, expert opinion, document reviews and secondary data.

#### **Step 4. Workshop #2 Portfolio development.**

The workshop aims to discuss the results of the prioritized T&P CSAs with a wide range of stakeholders from province, district, commune and village, and local and research institutions.

The roles of the partners in the project are identified to strengthen their ownership to the project. This is considered as one of the results of the project if it is implemented well.

## STEP 4

# IMPLEMENTATION



## Part 1

### GENERAL CONCEPTS

#### 4.1 Implementation through interest groups and training activities

Activities within the CSV boundary are carried out through interest groups (IGs), in which each IG takes on a specific task (Vernooy and Bouroncle, 2019; Ogada et al, 2020). These IGs include CSA T&P groups, a social mobilization group, a communication group, and a training group (including key members of the above groups) for scaling (Bui Le Vinh et al., 2015, 2016, 2017, 2018, 2019). These groups all have group leaders and participate in the coordination network for implementation and scaling of the CSV model at the village-commune-district levels (Bui Le Vinh et al., 2019).

#### 4.2 Participation of stakeholders, inclusion of women and poor farmers

The implementation of CSV activities also involves the participation of stakeholders, including local scientists, governance leaders and professionals, collaborative groups and the private sector in product consumption and decision making (Bui Le Vinh et al., 2019). This participation is done through training activities, implementation planning workshops (Bui Le Vinh et al., 2015; Vernooy and Bouroncle, 2019; Sebastian et al, 2019), policy dialogue (Bui Le Vinh et al, 2016), field schools and feedback workshops (Bayala et al, 2016; Taylor and Bhasme, 2020; Ogada et al., 2020).

#### 4.3 Sharing of knowledge and results

These are also activities of gathering and sharing knowledge and experience (KS). KS activities are conducted right in the implementation phase. Bui Le Vinh et al (2016, 2017, 2019) gathered people with good experiences in CSV implementation in Ma CSV to participate in technical trainings and knowledge sharing in 03 districts of Cao Bang province and 02 CSVs in Van Yen and Van Chan districts. To achieve best results, social mobilization activities still need to be continued throughout the implementation process in order to maintain motivation for people to directly participate and create confidence for those who have not yet participated. However, there are not many studies emphasizing the necessity of maintaining social mobilization in the implementation process (Bui Le Vinh et al., 2015, 2016, 2017, 2019). The success lessons in Van Yen district (Bui et al., 2020) have shown that social mobilization is a very useful tool and has an important role in determining the success of a local development program, and it is necessary to practice sufficiently and skillfully.

## Part 2

### DETAILED STEPS FOR IMPLEMENTATION

#### 1. Formation and operation of farmer interest groups (IGs)

The establishment of interest groups is an important component in the process CSV development (Bui Le Vinh, 2015, 2016). The lessons learned from the construction of Ma CSV how that: IG activities increase the efficiency of implementing CSA T&Ps (Bui Le Vinh, 2019). IGs will work on 03 main aspects: (i) Culture: propaganda, social mobilization for building a community with good adaptive capacity; encourage the use of community libraries and agricultural extension bookcases to leverage reading culture and technical skills for production; ensure the regular provision of information on climate risks and develop timely community response measures; (ii) Social: improvement of coordination in the community in joint activities to support building a community of better adaptive capacity; and (iii) Technical: actively organize knowledge sharing sessions and help villagers in practicing CSA T&Ps to adapt to the impacts of climate change and ensure environmental protection and sustainable agricultural ecosystems.



**Figure 10.** An interest group meeting



### **1.1 The Socio-Cultural group**

- The group is established on the basis of voluntary participation of farmers who are from within the CSV boundary. There is no limit of participants in this group.
- The purposes of this group are to (i) encourage people to use community libraries and agricultural extension bookcases in order to improve their knowledge; ensure the regular provision of climate risk information and the development of timely community response measure; (ii) improve solidarity and group coordination among the community in social activities to support building a community with a spirit of solidarity and high resilience.
- In the Socio-Cultural group there needs to be a team leader and a deputy. The team leader and the deputy are responsible for organizing regular group meetings (once a month) and ad-hoc group meetings (when there is an emergency such as a disaster). In addition, if the leader or the deputy is not a village official, it is necessary to collaborate with village officials to capture information and policies related to agriculture to pass on to members of the group.
- The agricultural extension bookcase should consist of various types of books, eg. extension, handouts, technical handbooks, field guides, etc.
- The Socio-Cultural Group will hold competitions to raise awareness of the impacts of climate change on livelihoods, promote the benefits of CSA T&Ps, thereby bring more participants. Therefore, if members join technical groups, those members should join the Socio-Cultural groups to create spillovers.

### **1.2. The technical groups for CSA T&Ps**

Interest groups are formed based on voluntary members. Team leaders need to be enthusiastic, dynamic, creative and highly responsible. They work without remuneration and are trusted by the group members.

Examples for setting regulations in such groups are as follows:

- Not having discriminatory attitude, respecting each other's opinions.
- Enthusiastic in group activities.
- Harmony, solidarity, mutual help in progress, not causing factions to lose solidarity in the group.
- Prohibit any acts of circulating or propagating reactionary publications, materials, unhealthy movies and other prohibited documents in accordance with the law.
- No profanity, cursing
- Maintain general hygiene and order
- Must be responsible for preserving and preserving common property of the group.

- All comments to the group's activities must be done seriously in constructive and development ways, not using words that provoke, criticize or offend the status and honor of the any individual or group.

### **1.3 Technical operations of the interest groups**

On the monthly basis, each group organizes a meeting to exchange, share knowledge, and experience, and discuss to find out effective production measures, thereby, tightening the solidarity among villagers and farmers.

During the implementation process, project staff always monitor, evaluate, inspect and supervise implementers to ensure progress and quality of activities. At the same time, regular meetings are organized to resolve problems, provide technical assistance and solutions to implement effectively. Through interest groups, people will have necessary skills to strongly develop economic models, create a favorable production and business environment, and increase the value of goods supplied to the market, therefore, contributing to sustainable poverty reduction.

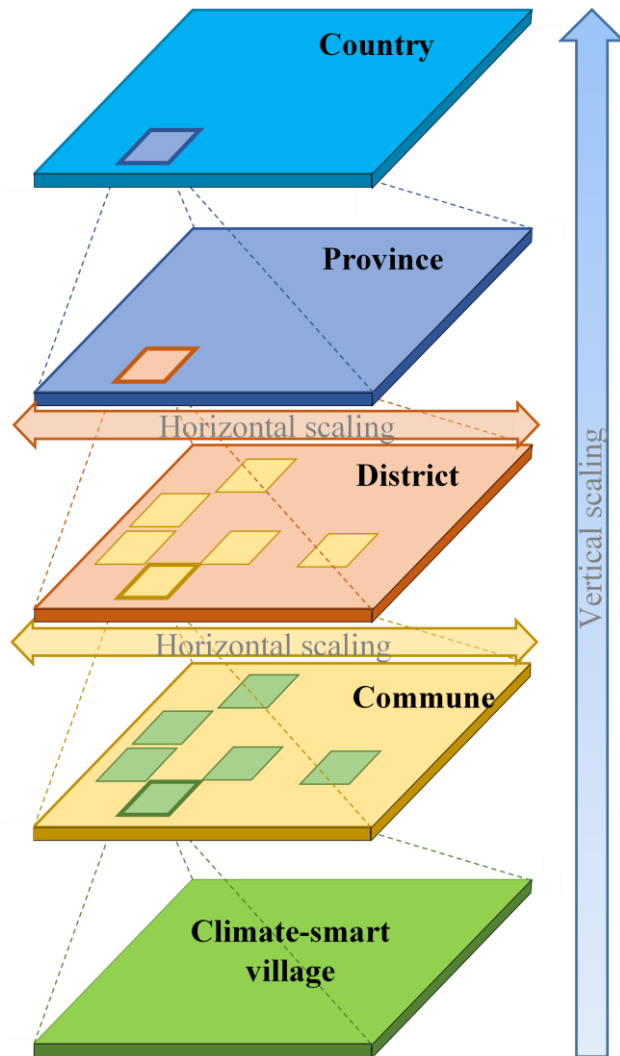
## **2. Participatory operations**

Nhóm nghiên cứu của VNUA, CIAT chia sẻ kinh nghiệm

# STEP 5 SCALING



Aggarwal et al. (2018) concluded that scaling of the CSV approach needs to go horizontally and vertically. Scaling pathways across a variety of administrative levels were visualized by Wassmann et al. (2019) and further detailed in Bui et al. (2019) in Figure 2. In the horizontal direction, a CSV acts as a demonstration site (**DE**) for out-scaling (or horizontal scaling) which consists of 06 components (Figure 3a) and implemented through 06 steps (Figure 3b) (Bayala et al., 2016; Taylor and Bhasme, 2020; Ogada et al., 2020). Farmers in the CSV receive learning opportunities by interacting and engaging with champion farmers who have participated and gained knowledge and experiences from testing activities through the so-called farmer-to-farmer knowledge diffusion scheme (**FF**) (Vernooy and Bouroncle, 2019; Bui et al., 2015, 2016, 2017). At the commune and district levels, horizontal scaling can be done more effectively and efficiently through local annual development plans and credit programs (**LO**), which can increase the number of CSVs established and end beneficiaries (Sebastian et al., 2019). In Vietnam, the fact that local development programs are under large national programs, for example the NTM, allows an autonomy for horizontal scaling at the local levels based on results of the SANA work (Bui et al., 2019), i.e. through prioritizing NTM communities for CSV adoption.



**Figure 2.** Multiple-level scaling (adapted from Wassmann và cs (2019))

In the vertical direction, the proven CSV model can be replicated nationwide through national development programs and policies (**NA**). Scientific proven CSV empirical research achievements under the CCAFS program in the 2011-2020 need to be compiled for policy recommendations of national adoption in many countries (Aggarwal et al., 2018; Vernooy and Bouroncle, 2019; Sebastian et al., 2019; Westermann et al., 2015). The joint long-term research collaboration between VNUA and CIAT (Bui et al., 2015, 2016, 2017, 2018, 2019) has been collecting and compiling evidence of successful CSV out/up-scaling at the provincial level

(Yen Bai province) for mainstreaming into the nationwide implementation of the NTM's 2021-2030 strategy.

Out/up-scaling pathways need engagement of the private sector (**PR**) at various scales (eg. small traders, collective groups, cooperatives, companies, factories, and enterprises) in CSA value chain development. [Aggarwal et al. \(2018\)](#), [Vernooy and Bouroncle \(2019\)](#) and [Westermann et al. \(2015\)](#) pointed out the importance of the PR investment in ensuring sustainable CSA value chains. This is well reflected Van Yen success story ([Bui et al., 2020](#)) where Van Yen cassava factory subsidized the production by providing agricultural inputs (eg. fertilizers and pesticides) and paid commissions to the district government which was then reinvested in the program. At this stage, **SM** activities are to promote and increase adoption rates of the CSV approach and CSA T&Ps horizontally ([Bui et al., 2019](#)).

# STEP 6

## MONITORING – EVALUATION



## Part 1

### GENERAL CONCEPTS

Monitoring and evaluation is an essential component in all projects. In Vietnam, in 2016, the government of Vietnam issued the [Decree No. 131/2006/ND-CP](#) on the issuance of regulations on management and use of Official Development Assistance (ODA). From here on, the concept of "Monitoring-Evaluation" (M&E) began to be used officially. Accordingly, 'monitoring' is defined as follows "Monitoring programs and projects is a regular activity and periodically updating all information related to the implementation of programs and projects; classifying and analyzing information; promptly propose options for decision-making of management levels to ensure programs and projects are implemented on target, on schedule, with quality assurance and within the available resources determined". [Decree 131/2006/ND-CP](#) also stipulates the assessment, which is "periodic activity, comprehensive, systematic and objective review of suitability, efficiency, performance, impact and the sustainability of programs or projects to make necessary adjustments and draw lessons learned to apply in the next implementation phase and apply to other programs and projects". M&E indicators were developed through three main steps, following the guidance of the 2006 Ministry of Planning and Investment's M&E manual, including:

1. Development and adjustment of the logical framework for M&E indicators
2. Identification of activities and indicators
3. Development of the logical framework and plan for monitoring

## LOGICAL FRAMEWORK

	Summary	Measurement indicators	Validation methods	Main assumptions
<b>Purpose</b>	Successful development/scaling of the CSV model that helps adapt to climate change in OCOP development within the NTM program	Successful development/scaling of the CSV model	M&E results	Adopted into NTM implementation plans
<b>Goals</b>	<ul style="list-style-type: none"> <li>- Assess production, climate impacts and adaptive capacities;</li> <li>- Propose CSV model for improved climate adaptation;</li> <li>- Develop an integrated economic development model using the CSV approach for OCOP development in distinctive agroecologies;</li> <li>- Propose integrated CSV-based measures for climate adaptation and OCOP development within the NTM 2021-2025.</li> </ul>	<ul style="list-style-type: none"> <li>- Current production status;</li> <li>- Climate impacts on production;</li> <li>- Impacts of the integrated model to improved sustainability and climate adaptability</li> <li>- Recommendations for implementation</li> </ul>	<ul style="list-style-type: none"> <li>-Baseline surveys of production, climate impacts on livelihoods</li> <li>-M&amp;E reports on CSV implementation</li> <li>-Project final report</li> </ul>	<ul style="list-style-type: none"> <li>-Integrated into NTM for OCOP development</li> <li>-Scaled to other localities</li> </ul>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>- Enhanced CSV-based climate adaptive capacities;</li> <li>- Improved sustainability (socio-economic and environmental) of localities;</li> <li>- Scaled CSVs to other localities in Yen Bai</li> </ul>	<ul style="list-style-type: none"> <li>- Awareness level of climate impacts to local livelihoods</li> <li>- Incomes of CSV implementers</li> <li>- Soil quality (fertility, water retention), environmental quality, plant/animal growth</li> <li>- Farmers visiting to learn.</li> </ul>	<ul style="list-style-type: none"> <li>-Surveyed household livelihoods (after CSA implementation)</li> <li>-Surveyed local awareness of climate impacts</li> <li>-Surveyed local understanding of soil quality</li> </ul>	<ul style="list-style-type: none"> <li>-Implementers continue to practice</li> <li>-New CSA adopters</li> </ul>
<b>Outputs</b>	<ul style="list-style-type: none"> <li>- Social mobilization for improved climate adaptation and resilience</li> </ul>	<ul style="list-style-type: none"> <li>- Communication products (videos, leaflets), technical guidance</li> </ul>		<ul style="list-style-type: none"> <li>-Farmer participation and</li> </ul>



	<b>Summary</b>	<b>Measurement indicators</b>	<b>Validation methods</b>	<b>Main assumptions</b>
	- Development of technical packages	- Suitability of technical packages with climate risks		technical application
<b>Activities</b>	- Establishment of climate information board, seasonal calendar, extension book shelf, and community library - Workshop to introduce CSV model - Demonstration of CSA T&Ps	- Number of information board - Impacts of trialed CSA T&Ps	-Project reports -M&E reports	Support from the local government
<b>Inputs</b>	- Project support (agr inputs, technical trainings) - In-kind support from farmers (time, labour) - Local government's support (communications, policy)	- Financial disbursement of project - Farmers' contribution	Project's data and reports	- Timely project support - Timely in-kind support

## EVALUATION QUESTIONS AND INDICATORS

Category	Evaluation question	Evaluation indicator	Unit
<b>1. Results</b>	<b>1.1</b> What are the project outputs?	<b>1.1.1</b> Local farmers with increased awareness of climate impacts on their livelihoods	%
		<b>1.1.2</b> Their incomes after CSA implementation	VNĐ
		<b>1.1.3</b> Income differences between adopters before and after adoption and with non-adopters	increased/same/reduced
		<b>1.1.4</b> Soil quality (fertility), environmental quality	increased/same/reduced
		<b>1.1.5</b> How has crop and animal growth change after CSA implementation?	%
		<b>1.1.6</b> How many people visited for learning and knowledge sharing?	people
<b>2. Outputs</b>	<b>2.1</b> How many communication products and technical manuals been produced?	<b>2.1.1</b> Number of videos	Video
		<b>2.1.2</b> Number of leaflets	Leaflet
		<b>2.1.3</b> Number of technical documents	Document
<b>2.2</b> How suitable are the introduced CSA T&Ps to local production systems and environment?	<b>2.2.1</b> Suitability of CSA T&Ps to local farming systems	suitable/normal/unsuitable	
	<b>2.2.2</b> Suitability of CSA T&Ps to local biophysical conditions	suitable/normal/unsuitable	
	<b>2.2.3</b> Suitability of CSA T&Ps to agr land planning	suitable/normal/unsuitable	
<b>3. Activities</b>	<b>3.1</b> What communication activities have been conducted?	<b>3.1.1</b> Number of climate information board, seasonal calendar, extension book shelf, community library	Thing (accordingly)

Category	Evaluation question	Evaluation indicator	Unit
	<b>3.2</b> Results of each CSA T&P	<b>3.2.1</b> Economic efficiency/increased farming area/productivity/yield/continue to implement/adopters	
<b>4. Inputs</b>	<b>4.1</b> What equipment has the project purchased?	<b>4.1.1</b> Project financial disbursement	%
	<b>4.2.</b> How much in-kind support was from local farmers?	<b>4.1.2</b> Local in-kind support	VNĐ or labour
<b>5. Lessons learnt</b>	How can CSV model help OCOP development within the NTM program?		

## MONITORING LOGICAL FRAMEWORK AND IMPLEMENTATION PLAN

Category	Monitoring indicator	What to measure	How to measure	Who to measure	How often	How reporting is done
<b>Objectives</b>	- To improve productivity in the context of climate change	Impacts of climate change on agricultural production	Household and key informant interviews	Project team	Annually	Reports submitted to VNUA, MARD, local government
	- To adjust inputs (labour, fertilizers, agrochemicals)					
	- To adjust cropping seasons, restructure cropping and livestock systems					
	- Impacts (socio-economic, environmental) after CSA adoption	Impacts of the integrated production system	Household interviews	Project team	Two times per year	
	- To recommend solutions for CSV scaling	Solutions for CSV scaling	Final project report	Project team	Once	
<b>Purposes</b>	To test and scale successfully the CSV model	Successful CSA scaling	Evaluated by evaluation committee	External evaluators	Once	Reports submitted to VNUA, MARD, local government
<b>Results</b>	- Awareness of climate change impacts on local livelihoods	Local awareness of climate change	Farmer interviews	Project team	Once	Reports submitted to VNUA, MARD, local government
	- Household incomes after CSA adoption	Change of incomes after CSA adoption	Interview CSA implementers	Project team	Seasonally or CSA cycles	

Category	Monitoring indicator	What to measure	How to measure	Who to measure	How often	How reporting is done
	- Income differences between adopters before and after adoption and with non-adopters					
	- Soil quality (fertility), environmental quality	Environmental changes after CSA implementation				
	- How has crop and animal growth change after CSA implementation?	Impacts of CSA T&Ps				
	- How many people visited for learning and knowledge sharing?	Ability to scale CSV	List of visitors	Field assistants	Weekly	
<b>Outputs</b>	- Number of videos, leaflets, technical training materials developed	Knowledge diffusion (CSA T&Ps, CSV concept, climate change awareness)	Based on designed outputs of the NTM project	Project team	Once	Reports submitted to VNUA, MARD, local government
	- Suitability of CSA T&Ps to local farming systems	Suitability of the CSA integrated system	Household and key informant interviews	Project team		
	- Suitability of CSA T&Ps to local biophysical conditions					
	- Suitability of CSA T&Ps to agr land planning					

Category	Monitoring indicator	What to measure	How to measure	Who to measure	How often	How reporting is done
<b>Activities</b>	- Number of climate information board, seasonal calendar, extension book shelf, community library	Impacts of communications	Field checks	Evaluated by evaluation committee		Reports submitted to VNUA, MARD, local government
	- Economic efficiency/increased farming area/productivity/yield/continue to implement/adopters	Impact of CSA T&Ps	Interview CSA implementers	Field assistants	Seasonally or CSA cycles	
<b>Inputs</b>	Project financial disbursement	Project support	Financial report	Project accountant		Reports submitted to VNUA, MARD, local government
	Farmers' in-kind support	Farmers' in-kind support	Financial report	Project accountant		Reports submitted to VNUA, MARD, local government

## REFERENCES

- Aggarwal, P. K., A. Jarvis, B. M. Campbell, R. B. Zougmore, A. Khatri-Chhetri, S. J. Vermeulen, A. Loboguerrero, L. S. Sebastian, J. Kinyangi, O. Bonilla-Findji, M. Radeny, J. Recha, D. Martinez-Baron, J. Ramirez-Villegas, S. Huyer, P. Thornton, E. Wollenberg, J. Hansen, P. Alvarez-Toro, A. Aguilar-Ariza, D. Arango-Londoño, V. Patiño-Bravo, O. Rivera, M. Ouedraogo and B. Tan Yen. 2018. The climate-smart village approach: framework of an integrative strategy for scaling up adaptation options in agriculture. *Ecology and Society*23(1):14. <https://doi.org/10.5751/ES-09844-230114>
- Bayala J, Zougmore R, Ky-Dembele C, Bationo BA, Buah S, Sanogo D, Somda J, Tougiani A, Traoré K, Kalinganire A. 2016. Towards developing scalable climate-smart village models: approach and lessons learnt from pilot research in West Africa. ICRAF Occasional Paper No. 25. Nairobi: World Agroforestry Centre.
- Bui Tan Yen 2015. Introduction to Climate-Smart Villages in Southeast Asia. PPT presentation.
- Bui LV, Campilan D, Pham TH, Parker L, Nguyen KH, Nguyen DN. 2015. Annual CCAFS FP2.1 project report. Hanoi, Vietnam: CIAT Asia.
- Bui LV, Campilan D, Pham TH, Parker, Nguyen KH, Nguyen TC, Nguyen DN. 2016. Annual CCAFS FP2.1 project report. Hanoi, Vietnam: CIAT Asia.
- Bui LV, Campilan D, Nguyen KH, Nguyen TC. 2017. Annual CCAFS FP2.1 project report. Hanoi, Vietnam: CIAT Asia.
- Bui LV, Campilan D, Nguyen KH, Nguyen TC. 2018. Annual CCAFS FP2.1 project report. Hanoi, Vietnam: CIAT Asia.
- Bui Le Vinh, Nguyen Hai Nui, Nguyen Thu Ha, Vu Thanh Bien. 2019. Scaling climate-smart villages in Yen Bai province to promote implementation of climate-smart agriculture and One Commune One Product (OCOP) initiative of the National Target Program on New Rural Development in the 2021-2025 period. Full science and technology proposal for NTM implementation for the 2016-2020 period. Proposal contract code 30/HĐ-KHCN-NTM. 104 pp.
- Bui Le Vinh, Vu Thanh Bien. 2020. A systematic review of Climate-Smart Agriculture (CSA) practices and recommendations for adoption in the implementation of Nong thon moi in the 2021-2030 Strategy. *Science and Technology Journal of Agriculture and Rural Development*. Special Issue of November 2020 "Climate Change and Sustainable Agricultural Development". 154-166.
- Bui Le Vinh. 2021. A systematic review of Climate-Smart Village (CSV) and recommendations for adoption in the implementation of Nong thon moi towards climate resilience in the 2021-2030 Strategy. *Science and Technology Journal of Agriculture and Rural Development*. Accepted for publication in March 2021.
- Government 2018. Decision No. 490/QĐ-TTg on One Commune One Product for the 2018-2020 period.

- Government 2006. Decision No. 24 /2006/QĐ-BXD on Management and Use of Official Development Assistance
- FAO 2013. Knowledge on Climate Smart Agriculture. Accessed from: <http://www.fao.org/3/a-i4226e.pdf>
- Mwongera C; Shikuku KM; Winowiecki L; Twyman J; Läderach P; Ampaire E; van Asten P; Twomlow S. 2015. Climate-smart agriculture rapid appraisal (CSA-RA): A prioritization tool for outscaling CSA. Step-by-step guidelines. International Center for Tropical Agriculture (CIAT). Cali, Colombia. 44 p.
- Ogada, M. J., Rao, E. J. O., Radeny, M., Recha, J. W., & Solomon, D. 2020. Climate-smart agriculture, household income and asset accumulation among smallholder farmers in the Nyando basin of Kenya. *World Development Perspectives*, 100203. doi:10.1016/j.wdp.2020.100203.
- Pham Thi Sen, Do Trong Hieu, Luu Ngoc Quyen, Le Viet Dung, Nguyen Thi Thanh Hai, Nguyen Van Chinh, Le Khai Hoan, Ha Quang Thuong, Cao Anh Duong, Le Thi Hoa Sen, Ho Huu Cuong, Mai Van Trinh, Tran The Tuong, Che Thi Da, Bui Tan Yen, Ngo Duc Minh. 2017. CSA: Thực hành nông nghiệp thông minh với khí hậu ở Việt Nam. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Wageningen, The Netherlands.
- Sebastian L, Gonsalves J, Bernardo EB. 2019. 8 Guide steps for setting up a Climate-Smart Village (CSV). Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Taylor, M., & Bhasme, S. 2020. Between deficit rains and surplus populations: The political ecology of a climate-resilient village in South India. *Geoforum*. doi:10.1016/j.geoforum.2020.01.007.
- Torquebiau, E. (2015). Whither landscapes? Compiling requirements of the landscape approach. *Climate-Smart Landscapes: Multifunctionality in Practice*; Minang, PA, van Noordwijk, M., Freeman, OE, Mbow, C., de Leeuw, J., Catacutan, D., Eds, 21-35.
- Vernooy, R. and Bouroncle, C. 2019. Climate-smart agriculture: in need of a theory of scaling. CCAFS Working Paper no. 256. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Wageningen, the Netherlands. Available online at: [www.ccafs.cgiar.org](http://www.ccafs.cgiar.org).
- Westermann O, Thornton P, Förch W. 2015. Reaching more farmers – innovative approaches to scaling up climate smart agriculture. CCAFS Working Paper no. 135. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Available online at: [www.ccafs.cgiar.org](http://www.ccafs.cgiar.org).
- Wassmann, R., Villanueva, J., Khounthavong, M., Okumu, B. O., Vo, T. B. T., & Sander, B. O. 2019. Adaptation, mitigation and food security: Multi-criteria ranking system for climate-smart agriculture technologies illustrated for rainfed rice in Laos. *Global Food Security*, 23, 33–40. doi:10.1016/j.gfs.2019.02.003.



# ANNEX

## Annex 1. Project kick-off workshop material



NUI Galway  
OÉ Gaillimh



Irish Aid  
Government of Ireland  
Rialtas na hÉireann

### HỘI THẢO PHÁT ĐỘNG ĐỀ TÀI

Phát triển mô hình làng nông thuận thiên thích ứng với biến đổi khí hậu gắn với phát triển mỗi xã một sản phẩm và góp phần xây dựng nông thôn mới giai đoạn 2021-2025



Chủ nhiệm Đề tài: TS. Bùi Lê Vinh



Ryan  
Institute



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



CCAFS

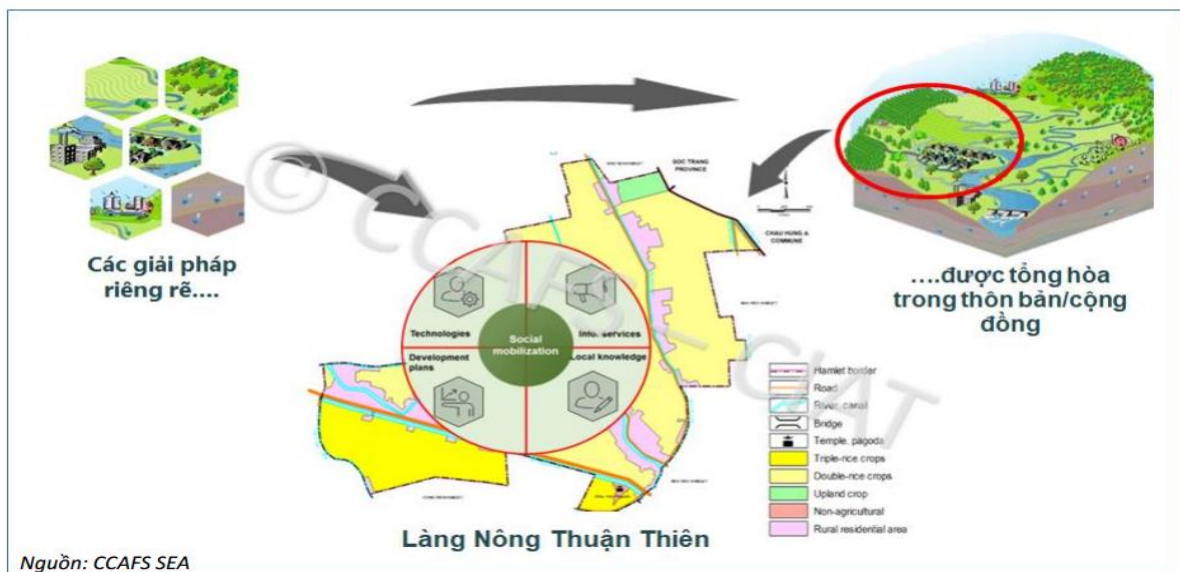


CIAT

International Center for Tropical Agriculture  
Since 1967 Science to cultivate change

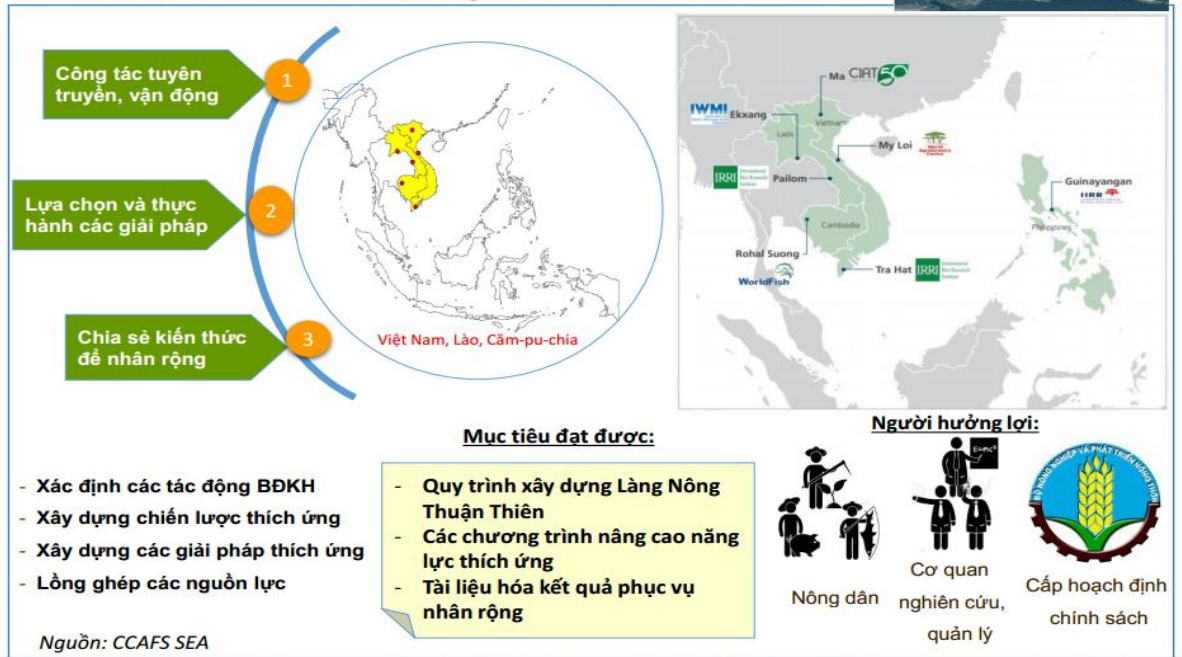
Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

## 1. Làng thông minh thích ứng với BĐKH (Làng Nông Thuận Thiên)



Tập huấn xây dựng Làng Nông Thuận Thiên tại thôn Nông Trường, xã Thượng Bằng La, huyện Văn Chấn, tỉnh Yên Bái

## Quy trình xây dựng Làng Nông Thuận Thiên tại thôn Mạ, xã Vĩnh Kiên, huyện Yên Bình, Yên Bái



Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

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## Quy trình xây dựng Làng Nông Thuận Thiên tại thôn Mạ, xã Vĩnh Kiên, huyện Yên Bình, Yên Bái

**Công tác tuyên truyền vận động** 1



Việt Nam, Lào, Căm-pu-chia

Thi nấu ăn dùng giống bản địa



Thi bảo vệ môi trường từ rác thải hữu cơ



Thi bảo vệ môi trường từ rác thải hữu cơ



Thăm quan mô hình chăn nuôi



Thăm quan mô hình sản xuất

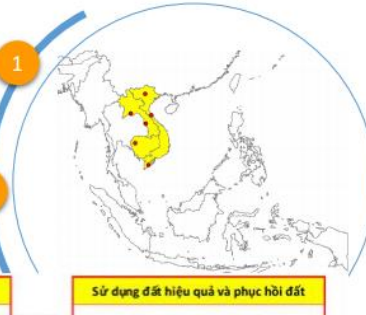


Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

## Quy trình xây dựng Làng Nông Thuận Thiên tại thôn Mạ, xã Vĩnh Kiên, huyện Yên Bình, Yên Bái

**Công tác tuyên truyền vận động** 1

**Lựa chọn và thực hành các giải pháp** 2



**Nông nghiệp bền vững**

- Cải tạo đất
- Giàn cầu bằng
- Tăng năng suất
- Đầu tư hiệu quả
- Phát triển chuỗi giá trị

**Canh tác sản bền vững**

Giàn cầu bằng và nâng cao độ phì đất

Phân bón hữu cơ

Ủ phân, nuôi giun quế

Phân chuồng

Chăn nuôi cải tiến

Nuôi nhốt, trồng cỏ dinh dưỡng cao

**Sử dụng đất hiệu quả và phục hồi đất**

- Cải tạo đất
- Phát triển trồng KEO
- Đổ sung đạm ni tơ tự nhiên cho đất
- Cải tạo vườn tạp
- Cây ăn quả
- Cỏ chăn nuôi
- Rau
- Cây họ đậu
- Chăn nuôi cải tiến
- Ủ phân, nuôi giun quế

**Canh tác lúa bền vững**

- Tăng năng suất
- Đầu tư hiệu quả
- Sử dụng nước tiết kiệm
- Giống thích ứng BĐKH
- Tưới tiết kiệm, hiệu quả
- Quản lý nước tổng hợp

*Ủ phân, sử dụng phân chuồng, phân hữu cơ*

*Phân hữu cơ cho lúa*

*Phân hữu cơ cho lúa*

*Cây phân hữu cơ cho vườn tạp*



Băng cỏ trong canh tác bền vững trên đất dốc



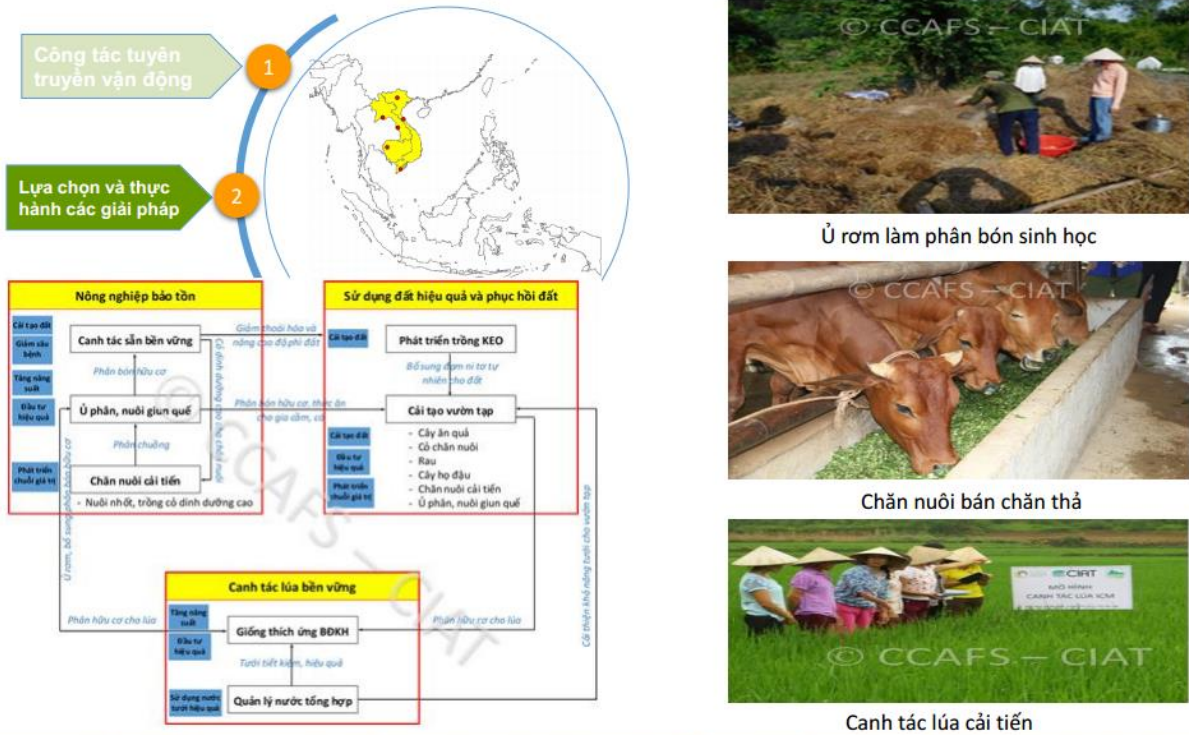
Tập huấn Ủ phân-Nuôi giun quế



Đệm lót sinh học

Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

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Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

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## Từ Làng Nông Thuận Thiên (Làng Mạ) đến Nông Thôn Mới 2021-2030



<u>CÁC HỖ TRỢ</u>	<u>PHẠM VI QUỐC GIA</u>	<u>CÁC HỖ TRỢ</u>
BẢO HIỂM NÔNG NGHIỆP	<p><b>VÙNG SINH THÁI</b></p> <p>Tìm hiểu những nhân tố và nhu cầu đối với mỗi vùng sinh thái – VD: tài nguyên nước, sản xuất nông nghiệp, bảo tồn đa dạng sinh học, quản lý rừng, rủi ro về thời tiết khí hậu và yêu cầu để xây dựng năng lực ứng phó tại chỗ – để đạt được mục tiêu phát triển bền vững, năng lực phòng chống thiên tai tại chỗ và thích ứng với biến đổi khí hậu cho vùng nông thôn Việt Nam</p>	<p><b>ĐỔI MỚI CHÍNH SÁCH</b></p>
CÁC DỊCH VỤ THỜI TIẾT-KHÍ HẬU	<p><b>CHUỖI GIÁ TRỊ</b></p> <p>Tăng cường hợp tác đa đối tác – VD: nông dân, doanh nghiệp, nhà cung ứng dịch vụ, nhà hoạch định chính sách, khuyến nông, nhà khoa học... – trong mọi khía cạnh của chuỗi giá trị và môi trường chính sách nhằm phát triển hiệu quả chuỗi giá trị cho việc thực hiện các chương trình quốc gia (NTM) một cách bền vững</p>	<p><b>THỂ CHẾ LINH HOẠT</b></p>
CƠ SỞ HA TẦNG	<p><b>LÀNG NÔNG THUẬN THIÊN</b></p> <p><b>Các giải pháp nông nghiệp thích ứng:</b> Nuôi cải tiến, Quản lý nước hiệu quả, Nông nghiệp bảo tồn, Trồng trọt, Chăm sóc, Nông lâm kết hợp, Giám phát, Nuôi trồng thủy sản</p>	<p><b>CÔNG BẰNG XÃ HỘI VÀ GIỚI</b></p>

Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

## 2. Phát triển mô hình làng nông thuận thiên thích ứng với biến đổi khí hậu gắn với phát triển mỗi xã một sản phẩm và góp phần xây dựng nông thôn mới giai đoạn 2021-2025

**NỘI DUNG 1:** Nghiên cứu cơ sở khoa học về xây dựng mô hình phát triển kinh tế áp dụng cách tiếp cận LNTT gắn với yếu tố OCOP.

**NỘI DUNG 3:** Xây dựng mô hình phát triển kinh tế tổng hợp áp dụng cách tiếp cận LNTT gắn với yếu tố OCOP trong xây dựng NTM thích ứng với ĐCKH

**NỘI DUNG 2:** Điều tra hiện trạng và lựa chọn các gói giải pháp tổng hợp (kinh tế, văn hóa, xã hội) cho địa phương nghiên cứu

**NỘI DUNG 4:** Đánh giá hiệu quả thực hiện và khả năng nhân rộng của mô hình nghiên cứu

Chia sẻ về mô hình Làng Nông Thuận Thiên thôn Mạ và ý tưởng thực hiện Đề tài KHCN xây dựng NTM 2018-2020

## Annex 2. Interview questionnaire

### 2.1 Calendar season planning

1. Loại cây trồng/ vật nuôi nào quan trọng nhất ở địa phương? (xếp hạng theo thứ tự từ quan trọng nhất)

2. Ông bà cho biết thông tin rõ hơn về từng loại cây trồng bao gồm: biện pháp canh tác; những công việc chính đối với cây trồng (vd: gieo cấy, làm đất, làm cỏ, bón phân, phun thuốc)

thu hoạch theo thời điểm trong năm; ai là người phụ trách các công việc đó (nam giới/ nữ giới/ cả gia đình); mỗi công việc đó mất bao lâu?

3. Ông cho cho biết thông tin rõ hơn về từng loại vật nuôi bao gồm: các công việc chính theo từng giai đoạn chăm sóc vật nuôi? Ai là người thực hiện các công việc đó? Thời gian cho từng công việc.

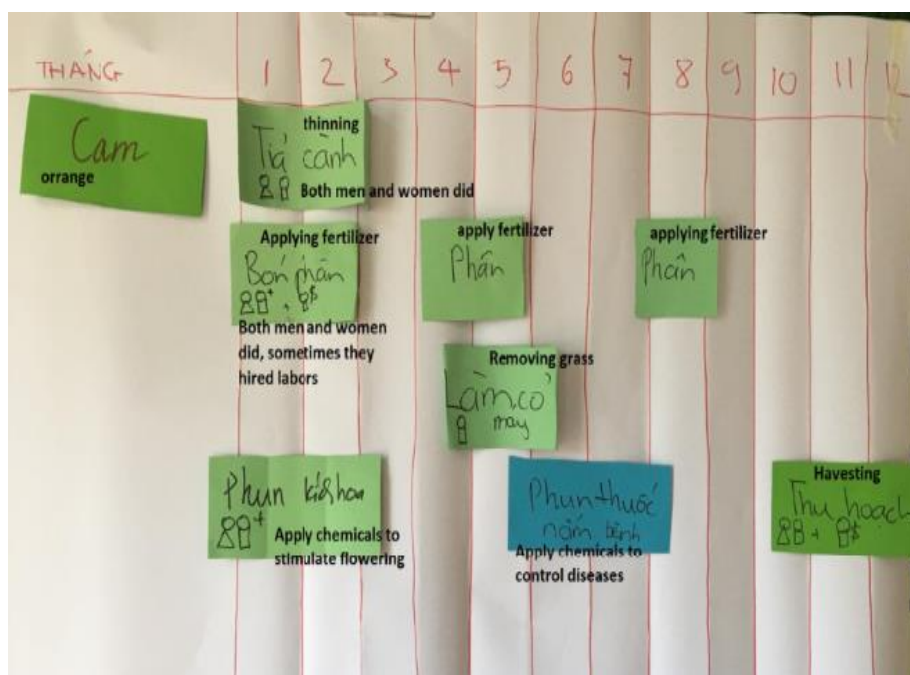
4. Những tháng nào/ mùa nào trong năm việc canh tác cây trồng/ chăm sóc vật nuôi là khó khăn nhất? tại sao?

5. Giá bán của từng loại cây trồng/ vật nuôi?

6. Việc tiêu thụ cây trồng/ vật nuôi như thế nào? (Ông bà giữ lại bao nhiêu % để tiêu thụ trong gia đình)

7. Trong quá trình canh tác/nuôi dưỡng cây trồng/vật nuôi ông bà có nhận được được sự hướng dẫn kỹ thuật của ai không?

8. Ông bà đã có sự thay đổi lớn trong cây trồng/ vật nuôi mà những thay đổi đó do ảnh hưởng của BĐKH hay không?



## 2.2 Climatic calendar

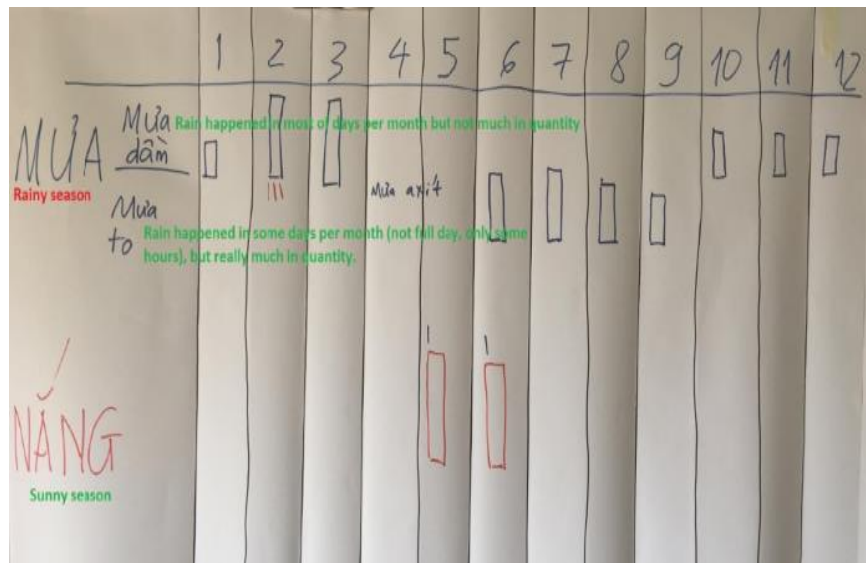
1. Xác định năm mưa nhiều và năm hạn hán. Sau đó thu thập thông tin của từng năm đó.

2. Loại cây trồng và vật nuôi bị ảnh hưởng nhiều nhất trong năm mưa? Chúng bị ảnh hưởng như thế nào và nông dân có cách nào giải quyết vấn đề đó?

3. Những loại hình thời tiết đó có ảnh hưởng đến mùa vụ tiếp theo không?

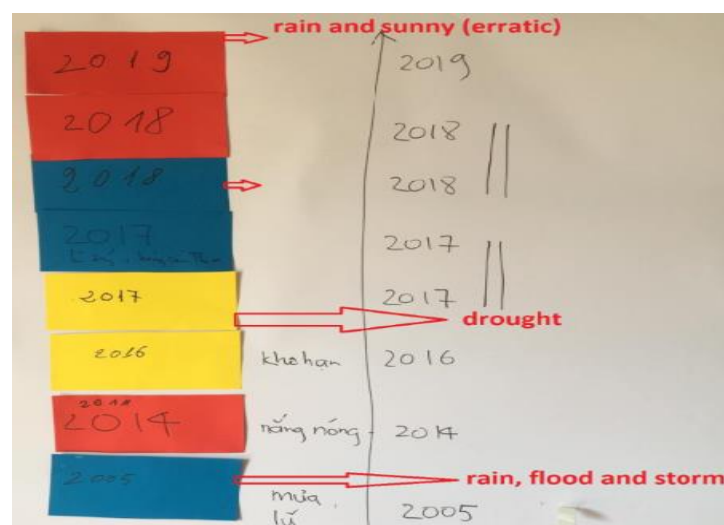
4. Các thực hành nông nghiệp thay đổi như thế nào do ảnh hưởng của BĐKH trong 10 năm trở lại đây

5. Ngoài các yếu tố về khí hậu, còn có yếu tố nào khác ảnh hưởng đến cây trồng/ vật nuôi ở địa phương không? Nếu có ảnh hưởng như thế nào?



## 2.3 Climatic history

10 năm trước, 5 năm trước, 2 năm trước, năm ngoái có cán hiện tượng khí hậu cực đoan gì đặc biệt? Nó ảnh hưởng như thế nào đến nguồn tài nguyên thiên nhiên, và việc sản xuất nông nghiệp









## 2.7 Household interview questionnaire

### PHẦN 1: NHẬN THỨC CỦA NÔNG DÂN VỀ BIẾN ĐỔI KHÍ HẬU

Điều tra viên: \_\_\_\_\_ Ngày \_\_/\_\_/\_\_

#### I. Thông tin chung về hộ

1. Họ và tên chủ hộ:..... Mã hộ:

2. Địa chỉ: Thôn/bản.....Xã..... Số điện thoại.....

3. Mức xếp hạng kinh tế hộ: 1. Nghèo; 2. Cận nghèo; 3. Trung bình; 4. Khá; 5. Giàu có

4. Tổng số thành viên trong hộ:

Thông tin về các thành viên trong hộ:

STT	1: Tên	2: Quan hệ với chủ hộ	3: Giới tính	4: Năm sinh	5: Dân tộc	6: Trình độ học vấn	7: Nghề nghiệp chính	8: Thu nhập		
								8.1 năm 2018 (1000đ)	8.2 Mức độ tăng	8.3 Mức độ ổn định
1										
2										
3										
4										
5										
6										
7										

Cột 2: 1=Chủ hộ; 2=Vợ/chồng 3=Con; 4=Cha/mẹ; 5=Ông/bà nội; 6=Ông/bà ngoại; 7=Chị dâu/Anh rể; 8= Anh/chị; 9=Khác.

Cột 3: 1=Nam; 0=Nữ

Cột 5: 1=Kinh; 2=Tày; 3=Thái; 4=Hoa; 5= Khác.

Cột 6: 0= không biết chữ; 1=chưa hết cấp 1; 2=chưa hết cấp 2; 3=Chưa hết cấp 3; 4=Hết cấp 3; 5=Trung cấp; 6=Cao đẳng/Đại học; 7 = Khác.

Cột 8.2: so với 2013 1: giảm đi nhiều; 2: giảm chút ít; 3: không đổi; 4: tăng chút ít; 5: tăng nhiều

Cột 8.3: 1: Rất không ổn định; 2: Không ổn định; 3: không đổi; 4: Có ổn định; 5: Rất ổn định

5. Ông/bà xin vui lòng đánh giá mức độ đồng ý của mình với các nhận định sau (ông bà hiểu như thế nào về BĐKH?)

Code: 1: Rất không đồng ý; 2: Không đồng ý; 3: không biết; 4: Có đồng ý; 5: Rất đồng ý

Nhận định	Đánh giá
a. BĐKH là hiện tượng tự nhiên, biểu hiện ở các hiện tượng như nhiệt độ trái đất đang nóng lên, băng tan ở cực trái đất và nước biển dâng	

b. Khí hậu thay đổi thể hiện ở việc thay đổi về nhiệt độ cao nhất, thấp nhất, thời điểm bắt đầu – kết thúc mùa mưa, lượng mưa, tần suất và cường độ của thiên tai trong vài năm gần đây so với khoảng 10 năm trở về trước	
c. BĐKH có ảnh hưởng lớn đến hoạt động sản xuất nông nghiệp của người nông dân	
d. Các hoạt động của con người tạo ra khí nhà kính làm cho trái đất nóng lên nhanh hơn, BĐKH trở nên nghiêm trọng hơn	
e. Các hoạt động sản xuất nông nghiệp cũng tạo ra khí nhà kính như bón phân hóa học cho lúa, chăn nuôi trâu bò, đốt rơm rạ.	
f. Ứng phó với BĐKH là việc của chính quyền, người nông dân không thể làm gì để thích ứng hay giảm thiểu BĐKH	

6. Tác động của BĐKH

Loại hình BĐKH	Tần suất	Cường độ	Tác động đến sinh kế	Ghi chú
Mưa nhiều cường độ lớn				
Nắng nóng kéo dài,				
Mưa axit				
Hạn hán				
Rét đậm, rét hại				

Code: Tần suất: Số lần/năm

Cường độ: 1. rất mạnh 2. Mạnh 3. Bình thường 4. Không đáng kể

Tác động: 1. rất mạnh 2. Mạnh 3. Bình thường 4. Không đáng kể 5.

Không

7. Ông (bà) có biết tới các chính sách của nhà nước và các cơ quan hỗ trợ về thích ứng với BĐKH:

Nhận định	Đánh giá
Biết về các kế hoạch thích ứng BĐKH, phòng chống thiên tai của tỉnh	
Biết về các kế hoạch thích ứng BĐKH, phòng chống thiên tai của huyện	
Biết về các chủ trương tăng cường tính thích ứng với BĐKH giảm nhẹ rủi ro thiên tai cho người nông dân	
Biết về một số dự án hỗ trợ nông dân thích ứng với BĐKH, giảm nhẹ rủi ro thiên tai	

Code: 1: Hoàn toàn không biết; 2: biết 1 chút; 3: Biết rất rõ

8. Ông (bà) có tiếp nhận các thông tin về thời tiết

Nhận định	Đánh giá
Tiếp nhận các dự báo cảnh báo về các hiện tượng thời tiết cực đoan, dự báo thiên tai	
Có tiếp cận các bản tin dự báo thời tiết hàng ngày	
Có tiếp cận các bản tin dự báo mùa vụ (trước khi bắt đầu một vụ)	
Có tiếp cận các dự báo, cảnh báo thiên tai	
Các bản tin đó có thông tin về khuyến nghị nông nghiệp không	

Code: 1: Hoàn toàn không; 2. Hiếm khi; 3. Thỉnh thoảng; 4. Thường xuyên 5.

Liên tục

9. Chức vụ của ông bà trong thôn/bản/xã.....

10. Tình hình tham gia các hội, đoàn thể trong thôn/xã?

Hội/đoàn thể	Đánh giá mức độ tham gia				
	Chồng	Vợ	Con trai	Con gái	Người khác
Hội Nông dân					
Hội Phụ nữ					
Đoàn thanh niên					
Hội Cựu chiến binh					
Hội Người cao tuổi					
Khác					

Mã: 1: Hoàn toàn không; 2. Hiếm khi; 3. Thỉnh thoảng; 4. Thường xuyên 5.

Liên tục

11. Ai là người có vai trò quyết định trong sản xuất của hộ

1. Chồng; 2. Vợ; 3. Cả vợ và chồng; 4. Con 5. Người khác

12. Khó khăn của hộ:

1= Thiếu vốn cho sản xuất

7= Không biết kinh doanh, không có tay

nghề

2= Thiếu đất canh tác

8= Bệnh nặng

3= Thiếu phương tiện sản xuất

9= Có tệ nạn xã hội

4= Thiếu lao động

10= Nhân công lười biếng

5= Nhiều người phụ thuộc

11= Các nguyên nhân khác

6= Người lao động không có việc làm

13. Những mong muốn chính từ hộ:

1= Hỗ trợ vay vốn ưu đãi

5= Giới thiệu việc làm

2= Hỗ trợ đất sản xuất

6= Hướng dẫn cách kinh doanh

3= Hỗ trợ phương tiện sản xuất

7= Hỗ trợ xuất khẩu lao động

4= Giúp đào tạo nghề

8= Trợ cấp xã hội

14. Chi tiết về vấn đề trồng trọt của hộ năm ....

		Thửa 1		Thửa 2		Thửa 3		Thửa 4	
		SL	T.tiền	SL	T.tiền	SL	T.tiền	SL	T.tiền
Làm đất	Thuê (Ng.đ)								
	Tự làm (công)								
Chi phí giống (Ng.đ)	Sắn								
	Đậu								
	Cỏ								
	Lúa								
	Ngô								
	Khác.....								
	Tr. Đó: đc hỗ trợ								
	Tr. Đó: mua ngoài								
Chi phí phân bón (Ng.đ)	Lân								
	Đạm								
	Kali								
	NPK								
	Khác								
	Tổng								
	Tr. Đó: đc hỗ trợ								
	Tr. Đó: mua ngoài								
	Thuốc BVTV								
Chăm sóc	Thuê								
	Tự làm								
Thu hoạch	Thuê								
	Tự làm								
Sản lượng thu hoạch	Sắn								
	Đậu								
	Cỏ								
	Lúa								
	Ngô								
	Khác.....								
	(8) Tổng	X		X		X		X	

15. Tổng thu nhập và chi phí cho hoạt động tổ chức sản xuất và kinh doanh trong 12 tháng qua (bao gồm cả sản phẩm để bán và sản phẩm phục vụ tiêu dùng trong gia đình). Đơn vị: VND 1,000 đồng

Hoạt động	Tổng thu	Tổng chi
1. Trồng trọt		
2. Chăn nuôi		
3. Các hoạt động dịch vụ nông nghiệp		
4. Rừng và dịch vụ lâm nghiệp		
5. Ngư nghiệp và dịch vụ thủy sản		
6. Các hoạt động kinh doanh dịch vụ phi nông nghiệp		
7. Tiền lương, tiền công		
8. Các khoản khác (quà/tiền được cho, tặng, các khoản hỗ trợ, tiền lãi...)		

16. Xin cho biết lượng tiền tiết kiệm và vay mượn của hộ. (ghi số lược cụ thể nếu hỏi được)

1. Hộ đã tiết kiệm được bao nhiêu ở ngân hàng, hiệp hội tín dụng hay các câu lạc bộ tiền tiết kiệm?	1. Có 0. Không
2. Hộ tiết kiệm được bao nhiêu dưới dạng tài sản phi sản xuất như vàng và đồ trang sức?	1. Có 0. Không
3. Hộ gia đình nắm giữ bao nhiêu tiền mặt?	1. Có 0. Không
4. Hiện tại gia đình đang nợ bao nhiêu tiền?	1. Có 0. Không

17. Gia đình có phải đối mặt với việc thiếu hụt thu nhập chính hoặc có khoản chi lớn bất ngờ trong vòng 12 tháng qua?

Biến cố	1. Mức nghiêm trọng
1. Mất mùa nghiêm trọng	
2. Có người bệnh nặng trong gia đình (nhóm người tham gia lao động không thể làm việc trên một tháng trong 12 tháng qua, do bệnh tật, phải chăm sóc người bệnh, hoặc chi phí y tế cao)	
3. Lao động chính trong gia đình bị mất (chết)	
4. Mất đất (bị thu hồi, vv...)	
5. Mất gia súc lớn (trộm cắp, hạn hán, vv...)	
6. Mất mát tài sản lớn khác (hỏa hoạn, trộm cắp, ngập lụt, vv...)	
7. Mất tiền lương, tiền công	
8. Khác, ghi rõ:	

Mã 1: 0=không có khủng hoảng; 1=có, cuộc khủng hoảng vừa phải; 2=có, cuộc khủng hoảng nghiêm trọng.

28b) Chiến lược ứng phó với các biến cố đã được áp

dụng.....

## PHẦN 2. TÍNH TOÁN CHI PHÍ LỢI ÍCH

(Áp dụng cho mô hình cam xen lạc)

1. Tên mô hình: .....
2. Năm bắt đầu:.....
3. Diện tích mô hình:.....
4. Nguồn gốc mô hình:.....
5. Mô hình này có thể kết hợp với hoạt động sản xuất nào?.....
6. Đối tượng có thể áp dụng (là ai, nhóm hộ như thế nào, dân tộc nào?).....  
.....
7. Điều kiện tiên quyết để áp dụng mô hình này?.....  
.....
8. Tại sao lại áp dụng mô hình này? Nếu không áp dụng mô hình này thì có thể áp dụng mô hình nào khác không? Nếu có thì là mô hình gì?  
.....  
.....

9. Hạch toán hiệu quả mô hình

Chỉ tiêu	Diện tích (m <sup>2</sup> )	Sản lượng (kg)	Giá bán (1000đ)	Chi phí (1000đ)	Công lao động (thời gian)	Ghi chú
Cam						
Lạc						

10. Điều kiện để nhân rộng mô hình?

*Code: 1=hiệu quả kinh tế; 2=thị trường tiêu thụ; 3=đầu tư kỹ thuật; 4=tài chính; 5=quy mô áp dụng; 6=hỗ trợ của địa phương; 7=kinh nghiệm; 8=khác*

11. Ông/bà có làm chủ nguồn lực để áp dụng mô hình này không?

1.Có 2.Không

Nếu không, ghi cụ thể vay, mượn từ đâu?

12. Mô hình này có mang tính đặc thù của địa phương không? Tại sao lại là đặc thù?

.....

13. Mô hình này có mang tính đặc thù của dân tộc không? Tại sao lại là đặc thù?

.....

**14. Những thuận lợi và khó khăn của mô hình là gì?**

14.1.Những thuận lợi của mô hình là gì?	14.2.Những khó khăn của mô hình là gì?
-	-
-	-
-	-
-	-

**15. Áp dụng mô hình có giúp chất lượng đất tốt hơn không?**

1=Tăng rất nhiều 2=Tăng nhiều 3=Không đổi 4=Giảm ít 5=Giảm nhiều

**16. Theo Ông/bà thấy mô hình có giúp giảm thiệt hại khi mưa lớn, bão lũ,...không?**

1=Hoàn toàn không 2=Một chút 3=Một nửa 4=Khá nhiều 5=Hoàn toàn giảm

**17. Mô hình có giúp Ông/Bà tăng năng suất hơn không?**

1=Hoàn toàn không 2=Một chút 3=Một nửa 4=Khá nhiều 5=Hoàn toàn tăng 6=Chưa thể hiện rõ

**18. Mô hình có giúp cải thiện bộ rễ, phát triển cây con thời kỳ đầu không?**

1.Có 2.Không 3.Không biết

**19. Chi tiết về hoạt động sản xuất của mô hình**

Nội dung	Vườn 1		Vườn 2		Vườn 3		Trồng thuần	
	SL	1000đ	SL	1000đ	SL	1000đ	SL	1000đ
	Tên cây trồng							
	Diện tích (m <sup>2</sup> )							
<b>Giai đoạn kiến thiết cơ bản</b>	Năm trồng							
	Giống	Gia đình						
		Mua ngoài						
	Phân bón (kg)	Phân chuồng(kg)						
		Lân(kg)						
		Kali(kg)						
		Đạm(kg)						
		Vôi bột(kg)						
		Phân VS Komix(kg)						
		Khác:						
	Thuốc BVTV	Thuốc trị nhện đỏ						
		Thuốc nấm						
		Thuốc bọ trĩ						
		Sâu vẽ bùa						



Nội dung			Vườn 1		Vườn 2		Vườn 3		Trồng thuần	
			SL	1000đ	SL	1000đ	SL	1000đ	SL	1000đ
		Khác:								
LĐGD (công)										
Thuê (công)		Máy đào hố								
		Khác:...								
	Chi phí mua ngoài khác									
	Năm bắt đầu thu hoạch									
<b>Chi phí và thu nhập năm vừa qua (giai đoạn kinh doanh)</b>										
Làm đất	LĐGD (công)									
	Thuê(công)									
Phân bón	Đạm (kg)									
	Lân (kg)									
	Kali (kg)									
	NPK (kg)									
	Phân hữu cơ(kg)									
	Phân vi sinh Komix(kg)									
	Vôi bột(kg)									
	Khác (kg)									
	LĐGD (công)									
	Thuê (công)									
	Tổng									
Thuốc BVTV	Thuốc cỏ									
	Thuốc sâu sinh học									
	Thuốc nấm									
	...									
	LĐGD (công)									
Thuê(công)										
Chăm sóc	LĐGD (công)	Tỉa cành								
		Khác:...								
	Thuê(công)									
Thu hoạch	LĐGD (công)									
	Thuê(công)									
	Tiêu dùng gia đình (kg)									

Nội dung		Vườn 1		Vườn 2		Vườn 3		Trồng thuần	
		SL	1000đ	SL	1000đ	SL	1000đ	SL	1000đ
	Bán (kg)								
Sản lượng lạc	Tổng sản lượng(kg)								
	Tiêu dùng GD(kg)								
	Bán(kg)								
Hình thức bán	Theo hợp đồng (kg)								
	Ko hợp đồng (kg)								
Địa điểm bán	Bán buôn tại ruộng (kg)								
	Bán tại chợ gần nhà (kg)								
	Bán cho điểm thu gom (kg)								
	Bán cho thương lái (kg)								
	Khác (kg)								

20. Theo ông/bà biến đổi khí hậu đã làm thiệt hại cho gia đình không?

- không     không đáng kể  
 có

Nếu có, mức độ như thế nào?

Nội dung Năm	Cây cam(cây/ha)		Cam(kg/ha)		Lí do gây thiệt hại	Đánh giá cụ thể sự khác giữa trồng xen và trồng thuần
	Số lượng	Thành tiền (1000d)	Số lượng	Thành tiền (1000d)		

21. Ông/bà sử dụng gì để tưới nước cho vườn cây cam và chi phí đầu tư hết bao nhiêu? (đvt: 1000d/năm)

	Chi cho thiết bị	Tiền Xăng	Tổng
Thiết bị ống tưới thông thường			
Thiết bị tưới tiêu			
Thiết bị tưới nhỏ giọt			

22. Ông bà hãy đánh giá mô hình sinh kế theo thang điểm sau:

1: rất kém    2: kém    3: bình thường    4: tốt    5: rất tốt

Chỉ tiêu		ĐIỂM	Ghi chú
<b>Kinh tế</b>	Thu nhập		
	Năng suất lao động		
	Giảm chi phí đầu tư		
	Ứng dụng tiến bộ KHKT		
	Thích ứng với thị trường		
<b>Xã hội</b>	Nhận thức, năng lực, hành vi		
	Sự tham gia của các nhóm yếu thế		
	Mối quan hệ xã hội, gắn kết xã hội (gắn kết, phối hợp các bên liên quan...)		
	Sự kế thừa kiến thức bản địa		
	Vai trò của nữ giới		
<b>Môi trường</b>	Sự thích ứng với BĐKH		
	Giảm phát thải khí nhà kính		
	Giảm xả thải ra môi trường		
	Sự tái chế, tái sử dụng		
	Bảo tồn tài nguyên thiên nhiên, đa dạng sinh học		
<b>Thể chế, chính sách</b>	Phù hợp với chính sách, quy định, định hướng của địa phương		
	Được hưởng lợi từ chính sách, quy định, định hướng của địa phương		
	Khả năng lồng ghép với các chương trình, dự án khác		
	Huy động được sự tham gia của tư nhân hoặc các tác nhân bên ngoài		
	Người dân được tham gia vào việc xây dựng kế hoạch, chính sách của địa phương		
<b>Khả năng nhân rộng</b>	Mức độ huy động các nguồn lực để thực hiện, nhân rộng		
	Có nguồn tài chính vi mô trong cộng đồng		
	Đơn giản hóa khi triển khai, nhân rộng		
	Nguồn tài chính phù hợp		
	Có phương án quản lý rủi ro		