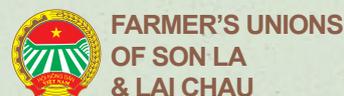




Farmers as the Heart of Climate-Resilient Villages

A CASE STUDY IN THE NORTHWESTERN MOUNTAINS OF VIETNAM

This publication is a product of the project "Strengthening the Voice and Capacity of Vulnerable Ethnic Minority Farmers in Climate Resilience in Northwest Vietnam" (or "Voice of Farmers Project" - VOF), which is jointly implemented by People and Nature Reconciliation (PanNature), Agricultural Development Denmark-Asia (ADDA) Vietnam and the Farmers' Unions in Son La and Lai Chau Provinces. This project is funded by the Civil Society Fund of the Swedish International Development Cooperation Agency (SIDA). The views and opinions expressed throughout this publication are those of the authors and do not necessarily reflect the official policy or position of the funding agency.



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Published in Quarter III/2021

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Due to heavy impacts of climate change, Vietnam in general, and the Northwest region in particular, have witnessed numerous extreme weather phenomena in recent years. Agriculture, one of the most vulnerable-to-climate-change sectors, has become increasingly unstable and risky. For this reason, there have been quite a few discussions not only by the government but also among development organizations on how to help farmers adapt to climate change. Many solutions to improving agricultural production have been tried, applied, and extended. However, the actual effects have not been achieved yet due to the complexity, uncertainty as well as embeddedness of climate-related solutions into local practices. Taking a different approach, the VOF Project's development team poses the question: how can climate-related agricultural initiatives bring farmers real transformation to cope up with climate variability?

This concern derives from a pre-project survey of the VOF in 7 communes of Son La and Lai Chau provinces, Northwestern region, Vietnam in 2017. The survey showed that each commune had been facing different problems to tackle with the impacts of climate change. So how can farmers apply and disseminate climate-smart techniques in practice? There is no doubt that local authorities must incorporate the response to climate change in their agricultural development action planning. However, when asked, only around 6% of farmers said they contributed to those communal plans. This data raises several questions for development practitioners.

The Voice of Farmers (VOF) Project

The Voice of Farmers (VOF) Project aims to strengthen vulnerable ethnic minorities' resilience to climate change in the North-west of Vietnam by promoting climate-resilient agriculture and farmer participation in the decision-making process.

The project's implementation is from 2019 to 2022 with the support of the Climate and Environment Fund through Agricultural Development Denmark Asia (ADDA). PanNature coordinates the project's activities in collaboration with the Farmer's Unions of Son La and Lai Chau provinces.

When it comes to traditional farming, a Vietnamese folklore poem goes like this:

"Other people farm to earn a living

I farm with much anxiety

Looking at the sun, the land, the cloud

*Asking for rain, searching for signs of
strong winds, day and night*

*Wishing that leg be strong and rock
be soft*

*I will be at peace only if the sky is calm
and the ocean is peaceful."*

The poem shows that traditional agricultural activities are carried out based on observations in practice and accumulated experience over a long period of time. The

practical knowledge on micro-climate and weather, thus, play a significant role in local agricultural practice, rather than the 'paperwork' planning. This can be considered one reason why the farmer's participation in the local social-economic development plan is probably unimaginable.

The recent changes in political-social conditions in rural regions even make the participation of local farmers more challenging. The micro weather and climate are just some of these challenges. Farmers nowadays have to care about not only "rain and sun" (climate change), the production materials (seeds, soil, farming techniques, etc.), but also state policies, regulations, and the market. There is inevitably no good harvest without favorable climate conditions, good seeds, fertile soil, and advanced techniques. But in many cases, the problems also lie in the impacts of agricultural policies and the product market forces, which are considered as external influence factors that farmers cannot make their own decision. Mrs. Ha Thi Bong in Na



Northwestern farmers transplanting rice seedlings in their paddy field

Khai village (Sap Vat commune, Yen Chau district, Son La province) is an example. As a farmer, she knows very well that maize monoculture on slopes is not suitable. "For maize cultivation, I need to plow and dig the land every year, so heavy rain could easily wash the soil away. Yen Chau is located in a basin area, where the hot and dry season is quite long while the maize needs much water to grow. So the quality and productivity of the maize are very low." - she shared. However, market demands have forced the expansion of commercial maize production in her village since 2018. Even though she knew it was not good, she obviously could not stay out of the loop of the market demand. As a result, she decided to convert most of her land to maize crops.



Maize grown in sloping land no longer adapts to the drought in Sap Vat (Yen Chau).

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Meanwhile, the annual socio-economic development planning at the local level is a top-down process. The commune-level plan is dependent on the national, provincial, and district-level targets, a list of quantity, area, and yield criteria. However, the plan rarely includes or considers specific methods of cultivation and husbandry or local conditions in response to the impacts of natural disasters and climate change. Thus, farmers have very few opportunities to join discussions or give comments on this communal plan. The disconnection between top-down interventions and local practices has (i) brought down the effectiveness of state climate-related policies; while at the same time (ii) neglected the opportunities to make climate-friendly techniques work in practice through the proactive participation of local farmers, who are directly affected by climate change and simultaneously take response actions in the field. In addition, the plans often are out of date and come when farmers have already changed their crops, livestock, and production methods. The criteria, therefore, play a passive rather than directional role. The 6% thus proves that there have been very few chances for farmers to speak up and contribute to changing policies or market trends that directly affect their future of production.



Pioneers elected to join the Farmer Resilient Group in Na Khai village (Sap Vat commune, Yen Chau district, Son La province, Vietnam)

Farmers

AS THE HEART IN ESTABLISHING CLIMATE-RESILIENT AGRICULTURE VILLAGES

Inspired by real problems, the VOF project adopts a different approach: a bottom-up approach, which emphasizes the central role of farmers in making and implementing plans related to climate change. One of the key implications of the new approach is establishing and operating six representative Climate-Resilient Agriculture Villages (CRAV). Unlike the climate-smart agricultural villages that have been piloted across rural areas in Vietnam recently, CRAVs do not only focus on the technical aspects of agricultural production. The new approach put the proactive participation of farmers along the process as key. A Farmer Resilient Group (FRG), thus, has been formed and developed at the heart of each CRAV. Through the

election mechanisms, ten pioneering representatives have been selected to join the Group. Along with monitoring the weather and climate as in "the sun, the land, the cloud", these members have received support in both knowledge and techniques to maintain and improve their local cultivation practices. They also actively looked at different angles of agriculture: from seeds, soils, farming techniques to external factors such as policies and markets.

The first step for the farmers to actively change agricultural production to cope with climate change is to be provided a full and comprehensive awareness of this issue. By carrying out knowledge-sharing

and awareness-raising activities for the group members, FRGs can understand and help other villagers understand that climate change and environmental pollution could derive from unsustainable daily agricultural practices. Therefore, they have more motivation to shift from their old-cultivation pattern to more climate-friendly ones.

"In the past, we truly had no idea about climate change or the greenhouse effect and used to think that only cities caused harm while we did not. How could we know that burning the field, fertilizing, or using herbicides affects the climate? Joining the Group, we've gotten to know that even phosphorous or nitrogenous fertilizers make climate changed too. We didn't care about it before, but now we know to do proper fertilization. Before, we did slash-and-burn cultivation, but now we keep the vegetation, knowing how it helps reduce soil erosion and our crops. Reducing swidden cultivation also helps to reduce forest fires. Before FRG, we have occasionally joined the

district's training on climate change once or twice a year. The knowledge from the training is also brief rather than this in-depth." - Khuat Huu Duong, Facilitator in Thin village (Xuan Nha commune, Van Ho district, Son La province).

The capacity-building activities for FRGs revolve around sustainable farming techniques and include essential skills for the Groups' operation such as planning, presentation, communication, analytical, financial, or market accessing abilities. All these skills help prepare the group members for active participation in all processes related to building sustainable local agriculture.

Besides, by using the "farmers teaching farmers" method, the FRGs will become proactive and enduring kernels to motivate the surrounding communities to learn and apply sustainable agricultural practices. They can also act as community enterprises to organize the production and delivery of villages' agricultural products.

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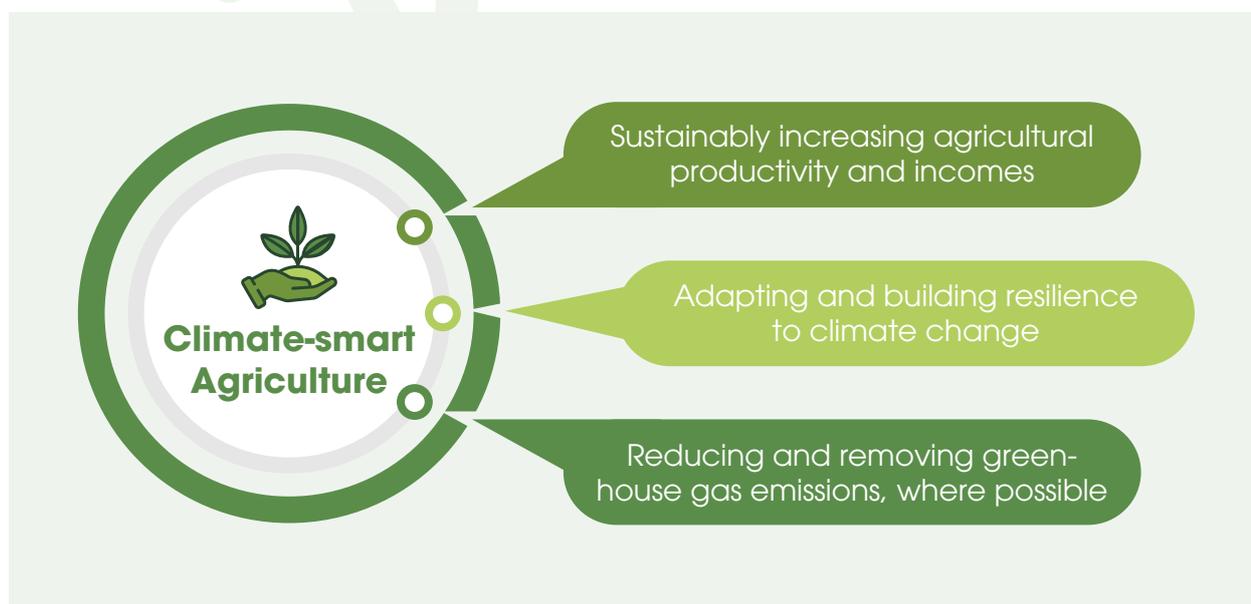


Training on climate change for farmers in the Northwestern region of Vietnam

Transforming

INTO CLIMATE-SMART AGRICULTURE

The selection of agricultural models and products at CRAVs follows three main pillars of the climate-smart agriculture approach*:



Accordingly, the selected techniques must not reduce the total output or income from agricultural products. At the same time, they need to be adaptable to the changes in local climate and weather (such as drought, frost, etc.) and reduce greenhouse gas emissions or pollution sources in the cultivation process (such as limiting mineral fertilizers, using pesticides properly, and making use of agricultural waste).

Knowing local soil, climate, and production conditions better than anyone, each FRG

works together and discusses with other villagers to decide production goals and agricultural models that fit each locality's specific natural conditions or market status. Based on the selection of each FRG, respective training courses on sustainable production techniques are provided. The top priority is to combine separate agricultural practices and turn them into a complete and circular model, which can solve multiple environmental problems and reduce greenhouse gas emissions at the same time.

* FAO. (2013). *Climate-Smart Agriculture Sourcebook. Sourcebook on Climate-Smart Agriculture, Forestry and Fisheries* (p. 6). Retrieved from <http://www.fao.org/docrep/018/i3325e/i3325e00.htm>



After joining training classes, farmers apply new techniques to turn agricultural wastes into manure for crops.

Cattle Rearing and Agroforestry in Phe A Village

Located far from the district center with little access to transport, more than 50% of households in Phe A village (Tong Co commune, Thuan Chau district, Son La province, Vietnam) are rated as poor and near-poor (Tong Co CPC, 2019). Raising cows brings farmers nearly half of their income. Farmers in Phe A still keep their traditional husbandry practices, such as keeping cattle under the floor or right next to the house. Instead of collecting and composting the cow waste thoroughly, the villagers just gather it on the ground and let it be dry on its own. This practice polluted the living space and a source of greenhouse gas emissions, which is known as exacerbating climate change.

Quang Van Thao is the leader of the Phe A Farmer Resilient Group. With an aspiration to change, Thao and other group members received financial support (accounting for 50%) from the VOF project to relocate their cowshed. He has also taken part in training for the circular cultivation-husbandry model. Instead of leaving the dung untreated, he now knows how to make cow manure to fertilize the plants. He has gained new knowledge in agroforestry and started to grow Elephant Grass (*Pennisetum purpureum*) inter-cropped with major plants on sloping land. This cultivation method reduces soil erosion substantially when natural disasters like storms or floods occur. People can also harvest the grass to feed their livestock.

ENHANCING EFFECTIVENESS THROUGH

Learning-by-Doing

Instead of equipping the farmers of CRAVs with theoretical training classes, "learning by doing" is one of the key approaches in the VOF Project. The learning process aims to support farmers to gain knowledge and skills through experiencing real production on their own land. With the hands-on guidance of agricultural experts, farmers learn and practice climate-smart cultivation and husbandry techniques right in their fields. Each lesson is designed following each stage of crop and animal growth in real-time. Therefore, people not only learn, do but also, at the same time, witness the actual results during their production process.

In addition, FRG members have chances to visit smart agricultural models demonstrated in other Northern Mountains. This helps them have greater practical awareness of applying environment-friendly techniques and organizing agricultural production in response to climate change.

It is a self-awareness and self-experience process for farmers to shift from traditional methods that have been maintained for generations to new ones. Seeing the results with their own eyes is the decisive part in convincing them to change. For example, the System of Rice Intensification (SRI), a

solution of climate-smart agriculture for rice production, faced many doubts at the beginning of implementation but has finally earned farmers' wholehearted approval.

"Many people in our village haven't recognized potentials of the new cultivating method compared to the traditional one. They use older seedlings and often transplant 5-6 seedlings per cluster, as it has become their habit. After 2-3 days, fields would already look green and dense. Meanwhile, the paddies of 10 households applying the new SRI method looked full of water after transplanting. That's why they were pretty worried and nervous at first. However, I told them to wait patiently and not to evaluate until harvest time.

On top of that, the amount of seeds has been reduced by 30-40%. Although the new method of soil preparation is more complicated, it has been easier and more proper to fertilize and spray. Rice has absorbed light better as well. Once taking part in the training, we are responsible for being the pioneers for other villagers to follow. No one should be out of practice. With teachers' instructions, we will succeed anyway." - shared by Mr. Ha Van Phiu, the FRG vice leader in Na Si Village (Hat Lot commune, Mai Son district, Son La province).



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An SRI paddy field in Na Si village after transplantation



Farmers in Na Ca village (Binh Lu commune, Tam Duong district, Lai Chau province, Vietnam) are discussing their agricultural production.

THE VOICE OF FARMERS:

Participatory

AGRICULTURAL PRODUCTION PLANNING

In parallel with learning and capacity building, farmers can gradually participate in the production planning process and the local socio-economic development plans.

In the past, many of them admitted they just provided information on their family production to contribute to the process. The majority were not aware of their role or



“ Sometimes, it's not a matter of whether you can plant this tree or raise this animal. It depends on whether you are allowed to plant or raise it.

interests in contributing to the production plans. Quite a few farmers also assumed that was the work of communal authorities or village leaders rather than theirs. However, the development orientation of the villages and communes is not sustainable enough without the farmers' decisions in the planning of agricultural production. Along with that, the production effectiveness of the farmers is not high without direction on the crops and livestock structure from local authorities.

"Sometimes, it's not a matter of whether you can plant this tree or raise this animal. It depends on whether you are allowed to plant or raise it. Therefore, the establishment of the FRG is the first step in creating a 'voice raising' mechanism for farmers. On the one hand, we motivate farmers

through capacity-building activities. On the other hand, we also persuade the local authorities to recognize this 'right to speak up.'" - Nguyen Duc To Luu, VOF Project Coordinator.

In 2020, the VOF Project promoted the People's Committees in all six target communes to sign an agreement with the FRGs, committing to providing the best conditions to contribute to the local agricultural production plans. Based on that mechanism, the FRGs discussed with their villagers and identified production problems that needed to be changed. They also organized meetings, invited the communal authorities to participate, proposed necessary measures, and eventually got the authorities' consent after that.



Transformation of Crop Structure in Thin Village

Thin is a remote village in Xuan Nha commune, Van Ho district (Son La province). Although Van Ho experiences cool weather all year round, Thin village is characterized by a warm and dry climate. It is separated from the rest of the area by high mountains and is heavily influenced by the dry wind from Laos. Therefore, cassava cultivation, which accounts for more than 26% of the village's total agricultural land, has many challenges. Grown mainly on upland fields and dependent on rainwater, cassava is highly sensitive to dry weather. Hot weather can reduce cassava yield in the village by 30-40%. In addition, landslides have buried 10-20% of the cultivated area (mainly on sloping land) in the last five years, causing considerable damage to farmers.

To cope with the situation, the FRG held a meeting with Van Ho communal authorities' participation and proposed converting cassava areas to an agroforestry plantation of fruits. They also invited the authorities to visit inefficient cultivated areas in the village and several successfully converted models in other places. This effort played an essential role in helping them get the authorities' consent to restructure the crops there.

Nearly five hectares of sloping land in Thin village is expected to be converted to land for lychees intercropped with grass and red peanuts in July 2021.



TOWARDS A SUSTAINABLE AND HIGH-VALUE

Agricultural Market

The motivation for farmers to shift to clean, environment-friendly, and climate-smart practices comes primarily from the consumption market. Safe agricultural products, following market standards and consumers' benefits and health, can be sold at high prices sustainably in the face of fluctuations in supply and demand.

The CRAVs, therefore, not only facilitate farmers to apply smart agriculture but also use this transformation to create high-quality agricultural products targeting safe and

high value-added markets. In each village, the FRG will be the focal point to promote and organize farmers to produce and sell agricultural products together.

The FRGs conduct market search for safe agricultural products and, at the same time, connect villagers with enterprises in the supply chain. Through self-analysis of the supply chain, the FRGs find key businesses in each locality and negotiate with them on environment-friendly standards for underwriting contracts.

Clean Agriculture: The Way to Europe of Na Ca Tea

Na Ca is one of the poorest villages of Binh Lu commune (Tam Duong district, Lai Chau province), with over 50% of households ranked as poor and near-poor. Maize and wet rice cultivation account for nearly 80% of the local crop structure. These crop cultivation, however, face many challenges in the context of climate change. For instance, their growth is heavily dependent on natural rainwater, which is increasingly scarce in the area. Therefore, maize yield can reduce by 30% and rice by 40-50% during the hot season. Meanwhile, tea plants show better adaptability in the context of climate change and bring higher economic efficiency to local people.

After the Na Ca FRG was established, the members discussed and agreed to build a safe tea model to transform Na Ca tea buds into a "high-quality good." With the support of the VOF Project to connect with Tam Duong Tea Development & Investment JSC, the Na Ca FRG represented tea farmers in the village to sign a cooperation agreement with the enterprise. They committed to following the technical instructions from the company, such as weeding by hands, not spraying herbicides, using required pesticides and dosage, etc. In return, the company committed to buying 100% of tea products in the village at a premium price.

Tea growing in Na Ca village had been once mainly based on traditional experience. People had applied excessive pesticides and overused herbicides for them. Lacking adequate harvesting and processing techniques, most farmers could only retail raw buds to dealers at low and unstable prices due to price squeezing. However, thanks to the company's cooperation and commitment to buying tea with a higher and more stable price than the traders', farmers are assured to follow the technical guidance on safe tea cultivation and provide inputs to export to the European market. The value chain approach, thereby, will bring benefits to both stakeholders.

THE *Climate-Resilient Villages*

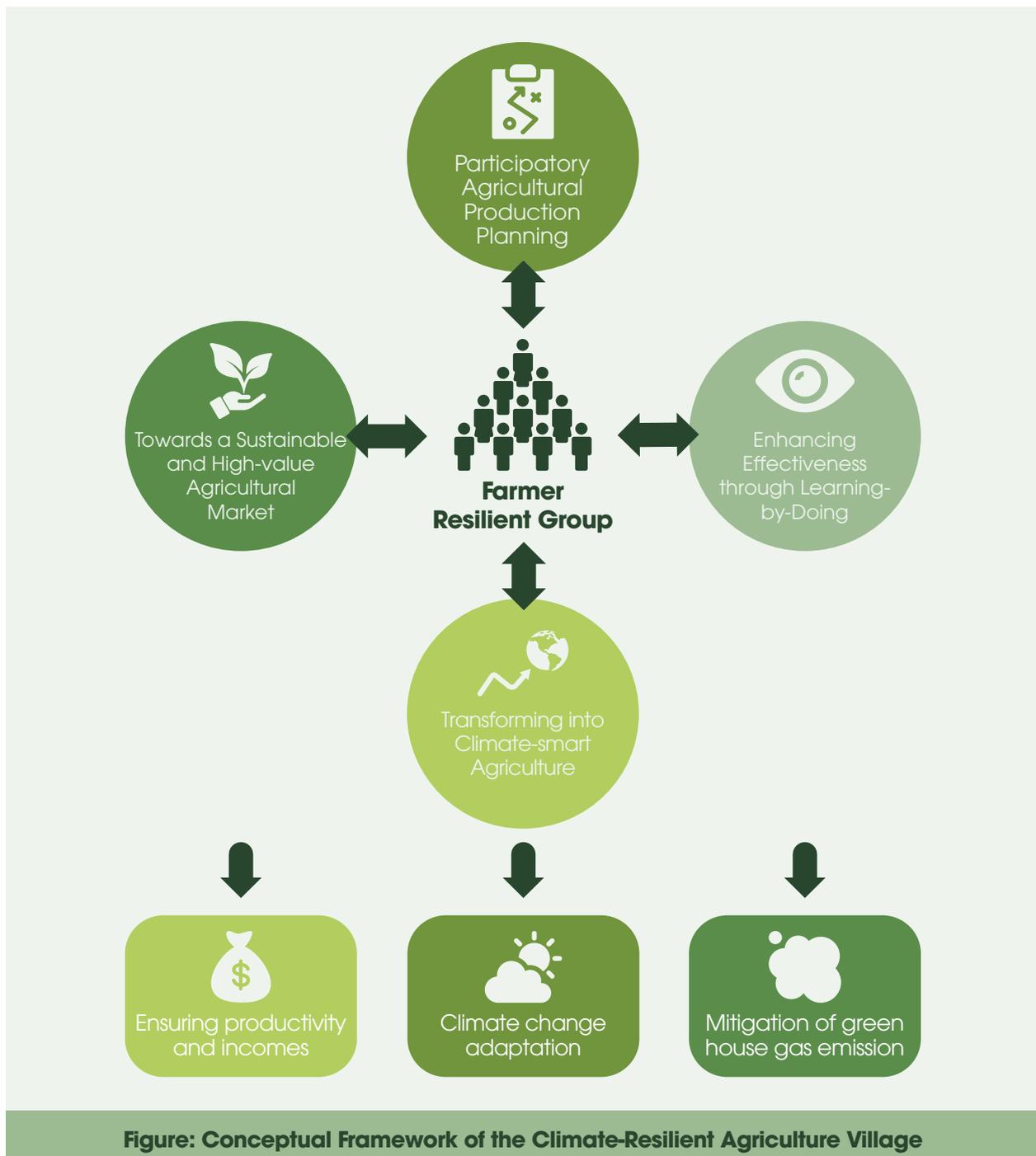


Figure: Conceptual Framework of the Climate-Resilient Agriculture Village



The mangos intercropped with pineapples model in Thin village (Xuan Nha commune, Van Ho district, Son La province) helps increase farmers' income and, at the same time, tackle landslide and erosion.

In general, production techniques are only part of what builds a Climate-Resilient Agriculture Village. The CRAV model does not require farmers to raise specific plants or animals. Instead, it starts from the economic, social, environmental, and political contexts of each area and considers the will of the local farmers to select appropriate crops and livestock. This is governance in the agricultural sector. What needs to be done is to have a good model with high productivity and handle the relationship between related stakeholders well. All these components will complement each other to achieve three main objectives: ensuring productivity and income for farmers, helping agricultural production adapt to the impacts of climate change, and minimizing greenhouse gas emissions. At the same time, it is expected that the results of the CRAVs will be naturally maintained by the communities and local authorities even after the VOF Project

ends, which would not be achieved only by applying agricultural techniques.

However, just like "tailoring" from the grassroots level to create each CRAV suitable for each locality, the initial phase is inevitably long and challenging. To select crops, livestock, and farming techniques for each area, the development team simultaneously considered the farmers' will, the available local advantages while ensuring long-term plans, sustainability, environmental-friendliness, climate adaptation, emission mitigation, and that the products will have high value and are well received by the market. The FRG must also enlist the support of local officials as they should regularly exchange, discuss and cooperate with farmers in the decision-making process in agriculture, especially with the incorporation of specific climate response measures.

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We need to consider and integrate local political, economic, social and environmental conditions into account to support local communities to adapt with emerging environmental changes. Despite being difficult, it is also worth it. Because when a solution is found, it will fit harmoniously in the overall picture of the locality.

Nguyen Duc To Luu,
VOF Project Coordinator

It's time to interpret the old poem in a completely new context of today's agriculture. When farmers have to work for themselves on their land rather than "to earn a living," they have to consider multiple things at the same time. They not only look at "the sun, the land, the cloud" by taking physical conditions and means of production into account but also look at "days and nights" by making plans and thinking about seasonality. "Strong leg" and "soft rock" refer to the farmers' internal strength, when "calm sky" and "peaceful ocean" symbolizes the favorability of policies and markets. By looking at the whole picture this way, every farmer can prepare a proactive and firm attitude to tackle climate change. Working together in community organizations like the CRAVs helps farmers be stronger and more proactive than ever to overcome environmental and social changes in agricultural production.





People and Nature Reconciliation (PanNature)

a Vietnamese not-for-profit organization dedicated to protecting and conserving the diversity of life and improving human well-being in Vietnam by seeking, promoting and implementing feasible, nature-friendly solutions to important environmental problems and sustainable development issues.

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