



**PROJECT «NETWORK FOR AGRICULTURE AND RURAL DEVELOPMENT
THINK-TANKS FOR COUNTRIES IN MEKONG-SUB REGION (NARDT)»**



Regional research

Agricultural innovations review in Sub-Mekong region countries

**Landscape coffee development model in the Central Highlands –
Viet Nam**

1. General information

Coffee is one of the key commodities of Vietnam's agriculture, making an important contribution to the total export turnover of agricultural products. Vietnam has formed many major commodity coffees producing areas, creating jobs and main income for nearly 700,000 farming households, contributing to socio-economic development, hunger eradication and poverty alleviation in the Central Highlands and Southeast Regions and some other coffee growing regions.

Besides these great achievements, Vietnam's coffee industry is facing many limitations, in which the link between production and processing is still limited; coffee quality is not high and uneven; livelihoods, environment and production are not sustainable, especially in the context of climate change. It has not kept up with the needs of the domestic and international markets with many fluctuations, making the competitiveness of Vietnam's coffee industry become a concern.

In recent years, the Sustainable Trade Initiative (IDH) has partnered with a number of coffees purchasing companies and local governments to pilot the “Very large-scale area” (VSA) program towards sustainable landscape approach in 3 concentrated coffee production regions of over 15,000 ha in two provinces of Dak Lak and Lam Dong.

The common vision of the parties to the VSA initiative is to achieve the goal of achieving 100% sustainable coffee and intercropping by 2025, rational resource management, no longer deforestation, and raising the income of farmers and other goals on water and agrochemicals use.

Since 2013, IDH has started implementing a sustainable landscape program in Vietnam. Coffee gardens are now supported to build a model of "landscape" in the direction of ecology, sustainability, combined with tourism. "Landscape coffee" integrated with multi-values, with three harmonious ecological floors, always open to welcome visitors, including: i) high tree floors including fruit trees, pepper trees, windbreak trees, shade trees. sunshine, catch dew, help regulate garden temperature; ii) middle floor for coffee trees; and iii) the lowest layer is for growing vegetation.

2. Model development

This model has gone through the process of formation and development in many different stages such as:

- Model building (2016 – 2018): including private sector and IDH, deployed in 65 communes, 15 districts with the model of individual households and 11,000 farmers received training.

- Landscape transformation (2018 - 2020): including Public, Private, Farmers and IDH, deployed in 09 communes in 05 districts in two provinces of Lam Dong and Dak Lak (Krong Nang, Di Linh, Lac Duong, Krong) Anna, Bao Lam), regional management with 20,000 farmers receiving direct training and 80,000 farmers receiving indirect training.

- In early 2019, three VSA pilot models, also known as Production, Protection & Inclusion Compact (PPI Compact) were implemented in two provinces. Dak Lak and Lam Dong: In Krong Nang district, Dak Lak province collaborated with IDH to launch a pilot model to become a confirmed large-scale coffee material area on an area of 5,200 hectares with 4,000 farming households in three areas. Ea Tan, Ea Toh and Dlie Ya communes; In Di Linh district, Lam Dong, IDH also implemented a pilot on an area of 2,700 hectares with 1,200 farmer households in Tan Nghia commune. In addition, in Lac Duong district, Lam Dong province, PPI Compact is being built and will be implemented in 7 years, from 2019 to 2025, it is expected to pilot in 2 communes (Dung Kno commune, Da Chais commune).

In addition to continuing to expand the area of VSA model in the Central Highlands (by 2025, the area of coffee agricultural products will be expanded to 150,000 hectares in three districts of Di Linh, Lac Duong and Krong Nang), IDH expects VSA will continue to expand VSA to two new areas in the Mekong Delta region to have 5 certified sustainable landscape areas completed by 2025.

The biggest advantage of this program is that it has mobilized the collective action of many actors in the coffee value chain in the Central Highlands, including:

- Central and local governments include the Plant Protection Department, the Crop Production Department under the Ministry of Agriculture and Rural Development, and the Provincial and District People's Committees. These organizations have the following roles: (1) Create a favorable legal environment for the implementation of the Program; (2) Invest in budget capital to deploy and expand the raw material area. This public agency is responsible for establishing the Steering Committee for the Production Program Combined with Resource Conservation and Social Security at the district level (District PPI Compact); mobilize departments and mass organizations in the state management system to support and participate in the implementation of the Program's

activities so that the Program achieve the goals; organize communication and information campaigns for local people in the area to ensure that they understand the Program activities before participating and actively cooperate to achieve the identified objectives; arrange, prioritize, mobilize and integrate resources from different programs such as: National target programs and private sector programs for program implementation; create favorable conditions for donors and partners to implement the program's objectives; and propose and direct relevant public sector units in the locality to actively and effectively participate/support in the implementation process.

- International and domestic production and purchasing companies such as JDE Group, ACOM Company, Simexco Company, LDC Group, Inter-Job Enterprise, Hanh Think Enterprise, Hoang Thang Company... with the role as the links of the export product supply chain, from agents, coffee purchasing companies, and roasters around the world, have signed strong commitments in responsible production and purchasing duty. This private sector is responsible for contributing the reciprocal funding and human resources to implement the objectives of the PPI Compact Program; focus on completing survey activities, selecting and building new coffee landscape clusters, expanding existing landscape clusters, supporting capacity building for cooperatives, establishing new cooperatives, establishing teams agricultural services, establishing/supporting farmers to access credit sources for agricultural production; commitment to off-sell products for farmers participating in ISLA Programs/Landscape Clusters/Cooperatives, SDM Program and households participating in PPI Compact with district People's Committees; and coordinate with the district People's Committee in implementing PPI Compact Program activities and participating in the district PPI Compact Program Steering Committee member.

- National and international organizations such as the Sustainable Trade Initiative (IDH), the Netherlands Development Organization (SNV), the World Coffee Forum (GCP), the German International Cooperation Organization (GIZ) and many other NGOs, socio-political organizations with the role of supporting the design of innovative intervention solutions, suitable to the characteristics of each unit; successfully connect locally with major international buyers and the VSA Global Steering Committee and update relevant guidelines related to organizational and international sustainability goals; These organizations are responsible for contributing and investing funds to deploy and replicate the raw material area: the Sustainable Agriculture Transformation Project (VnSAT), the EU's EUR 5 million project coordinated by UNDP, the Project Australia's \$3.5 million funded by ACIAR, SNV's

\$1.5 million "No Deforestation" Project...; and professional support and knowledge in the implementation process.

Landscape coffee model (VSA) has a certain difference with farming models according to certificates/certifications of other commodities.

Table 1: Differences between VSA model and other certifications

Indicators	Other certifications	VSA model
Cooperation and participation mechanism	<p>Bilateral cooperation between exporters and individual farmers</p> <p>Limit public participation</p> <p>Farmers passively participate (according to pre-defined goals)</p> <p>Do not create opportunities and attract other organizations (third parties)</p>	<p>The alliance cooperation includes the public sector, the private sector (trade and export enterprises, suppliers, farmers) and other organizations other.</p> <p>The public sector actively participates and plays an important role.</p> <p>Farmers actively participate (according to their goals and commitments)</p> <p>Create opportunities and encourage the participation of many organizations and parties</p>
Scale	<p>Individual farms, households/facilities that produce a certain type of dispersed product</p>	<p>Consists of a geographical area where many different types of goods are produced.</p>
Setting sustainable development goals	<p>A comprehensive set of global standards (usually including goals, principles, criteria, and guidelines), which can be supplemented/interpreted on a Country-by-country basis to suit consistent with the</p>	<p>Includes 4 Global Impact Goals and Core Indicators for all VSA+ regions and set of indicators and indicators</p> <p>Impact targets in each locality and area shall be agreed and</p>

Indicators	Other certifications	VSA model
	local/country regulatory framework (predefined)	established by the stakeholders in that locality.
Environmental Impact	Small scale (farm/household level), for a single category Asynchronous or single impact	Large scale (regional level), possibly for many industries Synchronous effect
Verification and market	Verification, certification through an independent entity, performed by the private sector. There is a stable market, but companies are reducing their direct investment (plus premium) in recent years	There will be a confirmation committee (currently unknown confirmation mechanism) Some companies started to commit to purchasing (limited volume)
Implementation resources	Mainly rely on private investment High cost, difficult to be sustainable	Mobilize resources from many parties. Low implementation cost

Source: VSA Project, IDH

In Krong Nang, Dak Lak province, the pilot model of a large-scale coffee raw material area has been confirmed to have been implemented in a part of Ea Toh, Ea Tan and Dlie Ya communes with a total area of about 5,200ha/4,000 households. This region is not demarcated by administrative borders but by sourcing borders for coffee products. This entire area of 5,200 ha is linked by the sole business of Simexco Company through cooperatives and small traders.

The model was conducted based on the content of the MOU signed in August 2019 between IDH and related parties, including Krong Nang District People's Committee, Ea Toh Commune People's Committee, Ea Tan Commune People's Committee, Dlie Ya Commune People's Committee, Representative VnSAT Dak Lak project, Jacobs Douwe Egberts Company (JDE), Dak Lak 2/9 Import-Export Company Limited (Simexco) with the following specific objectives:

- *Sustainable production (P):*

By 2020: reaching 45% of coffee and intercropping sustainably produced (1): Replanting 1,892 ha of old coffee area (accounting for 80% of the area to be replanted); (2) Deploying 2 supply chain models between farmer cooperatives/groups and enterprises with an output of 10,856 tons of coffee; (3) Applying good agricultural practices (according to the NSC Criteria) on 12,290 ha of coffee and intercropping (about 50% of the total area of coffee); (4) Striving for 17,090 hectares of coffee growing area without using banned substances used in agriculture, herbicides, reducing the use of pesticides by 15% on this total area.

By 2025: reach 100% of coffee and the crops are considered to be sustainably produced (1): Replant 6,646 ha of old coffee area (accounting for 90% of the area to be replanted); (2) Deploying 3 supply chain models between farmer cooperatives/groups and enterprises with an output of 25,331 tons of coffee; (3) Applying good agricultural practices (according to the NSC Criteria) on 24,418 hectares of coffee and intercropping (about 50% of the total area of coffee in the region); (4) Striving for 24,418 hectares of coffee growing area without using banned substances used in agriculture and herbicides, reducing the use of pesticides by 20% on this total area.

- *Conserve land and water resources (P):*

By 2020: (1) Conserve land resources, increase the use of organic/organic fertilizers by 25% from 10,988 ha to 17,093 ha of coffee growing area, take care of 4,450 ha of land with rows of green trees to shade the sun, windbreak trees and belt trees forming a green belt to isolate chemicals, intercropping avocado trees, durian trees or other trees suitable for 4,360 hectares of coffee growing area; (2) Water management, reducing the amount of irrigation water from 550-600 liters/plant/ to 450 liters/plant in the first phase and from 450-500 liters/plant to 400 liters/plant in the following phases for 11,046 hectares of planting area coffee trees, increasing the use of surface water for irrigation to 10,500 ha; (3) Protect forests, increase forest cover by 2%, maintain and take care of 100% of the current status of forests (the area has 6,297 hectares of special use area).

By 2025: (1) Conserve soil resources, increase 30% of the use of organic/organic fertilizers to 24,418 hectares of coffee growing area, take care of 11,407 hectares of land with rows of green trees to shade and shield trees. wind and belt trees form a green belt to isolate chemicals, intercrop avocado, durian or other trees suitable for 11,102 ha of coffee growing area; (2) Water management, reducing the amount of irrigation water

from 550-600 liters/plant/ to 450 liters/plant in the first phase and from 450-500 liters/plant to 400 liters/plant in the subsequent phases for 24,418 hectares of planting area coffee trees, increasing the use of surface water for irrigation to 13,430 ha; (3) Protecting forests, increasing forest cover by 7%, maintaining and taking care of 100% of the current status of forests (the area has 6,927 hectares of special use area).

- *Livelihood, social security (I):*

By 2020: reduce the poverty rate to 6.98% by (1) Increasing the income of 25-30% of coffee farmers by 20% through market linkage, reducing production costs, improve the quality of goods and reasonable intercropping; (2) Increase the use of PPE when spraying pesticides on an area of 12,290 ha; (3) 20% increase in avocado and durian production; (4) Increase livestock production by 5%; (5) Improve gender equality, encourage women to participate in training in sustainable production, reaching the rate of 30%; (6) Reduce 95% of cases of Labor Law violations; (7) Propaganda, raising awareness and awareness about workers' rights for 95% of employees; (8) Improve working conditions and safety for 95% of employees.

By 2025: reduce poverty rate to 4.2% by (1) Raising 30% of income of 70% of coffee farmers through market connection, reducing production costs, improving commodity quality and reasonable intercropping; (2) Increase the use of PPE when spraying pesticides on an area of 17,093 ha; (3) An increase of 15% in livestock production; (4) Improve gender equality, encourage women to participate in training in sustainable production, reaching 45%; (5) Reduce 100% of cases of Labor Law violations; (6) Propaganda, raising understanding and awareness of workers' rights for 100% of employees; (7) Improve working conditions and safety for 95% of employees.

In Di Linh, Lam Dong province, the coffee-producing area (coffee accounts for 94.3% of agricultural land) is facing problems of land degradation, over-use of water and poor farming practices. practices to achieve the Green Growth goals. In Di Linh district, the pilot model of a large-scale coffee raw material area was confirmed to have been deployed in Tan Nghia commune based on the content of the Memorandum of Understanding signed in April 2019 between IDH and related parties, including Lam Dong Provincial People's Committee, Department of Crop Production - Ministry of Agriculture and Rural Development, Project Representative of Lam Dong VnSAT, People's Committee of Di Linh District, People's Committee of Tan Nghia Commune, Global Coffee Forum (GCP), Jacobs Douwe Egberts Company (JDE), Atlantic Vietnam Trading Company Limited (ACOM), Louis Dreyfus Company (LDC), Bich Lien

Private Enterprise, Hanh Thinh Private Enterprise, Tien Nong Agriculture Industry Joint Stock Company, Corporation CP Hop Luc. The project integrates the SDM (Shared Decision Making) approach from the coffee program into the PPI Compact to introduce a new model for providing high-quality input services at scale. PPI Compact Di Linh is the first model deployed to attract small businesses to participate as the main partner in order to improve the efficiency of supporting farmers' inputs and develop towards a transparent supply chain, which is the plan. draft a common vision for a sustainable coffee landscape based on green and sustainable growth for Di Linh district, Lam Dong province with the following specific objectives:

- *Sustainable production (P):*

By 2020: reaching 45% of coffee and intercropping sustainably produced (1): Replanting 2,952 ha of old coffee area (accounting for 90% of the area to be replanted by 2020); (2) Deploying 3 supply chain models between farmer cooperatives/groups and enterprises with an output of 15,000 tons of coffee; (3) Applying good agricultural practices (according to the NSC Criteria) on 22,150 hectares of coffee and intercropping (about 50% of the total area of coffee in the region); (4) Striving for 23,000 hectares of coffee growing area without using banned substances used in agriculture, herbicides, reducing the use of pesticides by 10% on the total area of 24,000 hectares of coffee.

By 2025, 100% coffee and intercropping will be produced sustainably (1): Replant 7,872 ha of old coffee area (accounting for 80% of the area to be replanted by 2025); (2) Deploying 6 supply chain models between farmer cooperatives/groups and enterprises with an output of 45,000 tons of coffee; (3) Applying good agricultural practices (according to the NSC Criteria) on 44,300 ha of coffee and intercropping (about 50% of the total coffee area of the region); (4) Striving for 24,418 hectares of coffee growing area without using banned substances used in agriculture and herbicides, reducing the use of pesticides by 15% on this total area.

- *Conserve land and water resources (P):*

By 2020 (1) Conserve soil resources, increase the use of organic/organic fertilizers by 20% from 27,466 ha to 32,339 ha of coffee growing area, take care of 5,300 ha of land with rows of trees to shade the sun, windbreaks and belt trees forming a green belt for chemical isolation, intercropping with avocado, durian or other suitable trees for 5,560 ha of coffee growing area; (2) Water management, reducing the amount of irrigation water from 550-600 liters/plant/ to 450 liters/plant in the first phase and from 450-500 liters/plant to 400 liters/tree in the subsequent phases for 26,450 hectares

of planting area. coffee trees, increasing the use of surface water for irrigation to 27,277 ha; (3) Protecting forests, increasing forest cover by 6%, maintaining and taking care of 100% of the current status of forests (the area has 74,552 hectares of special use area).

By 2025: (1) Conserve soil resources, increase the use of organic/organic fertilizers by 30% to 33,440 hectares of coffee growing area, take care of 9,500 hectares of land with rows of green trees to shade and shield trees. wind and belt trees form a green belt to isolate chemicals, intercrop avocado, durian or other trees suitable for 12,500 ha of coffee growing area: (2) Water management, reducing the amount of water for irrigation from 550-600 liters/plant/ to 450 liters/plant in the first phase and from 450-500 liters/plant to 400 liters/tree in subsequent phases for 30,800 hectares of planting area. coffee, increasing the use of surface water for irrigation to 29,681 ha; (3) Protecting forests, increasing forest cover by 11%, maintaining and taking care of 100% of the current status of forests (the area has 74,552 hectares of special use area).

- *Livelihood, social security (I):*

By 2020: reduce the poverty rate to 3.7% by (1) Increasing the income of 25-30% of coffee farmers by 20% through market linkage, reducing production costs, improve the quality of goods and reasonable intercropping; (2) Increase the use of PPE when spraying pesticides on an area of 23,000 ha; (3) 10% increase in avocado and durian production; (4) Increase livestock production by 5%; (5) Improve gender equality, encourage women to participate in training in sustainable production, reaching the rate of 30%; (6) Reduce 95% of cases of Labor Law violations; (7) Propaganda, raising awareness and awareness about workers' rights for 95% of employees; (8) Improve working conditions and safety for 95% of employees.

By 2025: reduce poverty rate to 3% by (1) Raising 30% of income of 70% of coffee farmers through market connection, reducing production costs, improving quality goods and reasonable intercropping; (2) Increase the use of PPE when spraying pesticides on an area of 34,000 ha (3) Increase the production of avocado and durian by 25%; (4) Increase livestock production by 15%; (5) Improve gender equality, encourage women to participate in training in sustainable production, reaching 45%; (6) 100% reduction of cases of Labor Law violations; (7) Propaganda, raising awareness and awareness of workers' rights for 100% of employees; (8) Improve working conditions and safety for 95% of employees.

Large-scale material areas are approached in a landscape direction with following targets:

- Coffee is the main crop, planted, grown and developed well, with high yield and safe quality.
- High-rise woody plants such as shade trees, windbreaks, forest trees, fruit trees, etc. biodiversity, protection and creation of sustainable habitats.
- Plants cover the soil such as grass, shrubs, herbaceous plants, etc. to retain moisture, cover heat, limit leaching, erosion, protect and improve soil and water.
- Conserve soil and water in ditches, ledges, contour green fences, etc. to limit leaching and limit the spread of pest sources.
- Irrigation economically according to coffee demand, soil and weather conditions, optimal use and conservation of water resources.
- Apply fertilizers appropriately according to soil fertility, current status, productivity, limiting fertilizer loss, evaporation, erosion, leaching and eutrophication.
- Chemical safety IPM, ICM, GAP, ... use pesticides effectively, with control, protect health, protect soil and water.

Over a period of time, the implementation of landscape coffee models has contributed to a 14% reduction in the number of chemical fertilizers used; 17% reduction of irrigation water in coffee production; reduce production costs by 11% and reduce CO₂ emissions by 10% into the environment. 100% of the coffee produced in the pilot area is being purchased at a price higher than the market price. In addition, coffee growers also diversify their income, besides coffee trees, they can also have income from fruit trees, pepper trees or macadamia trees.

3. Opportunities and challenges

The VSA landscape coffee model has created favorable conditions for the implementation of the coffee replanting program in the Central Highlands. This model creates an opportunity for a strong shift from monoculture to polyculture to reduce risks of disease and diversify the income of coffee growers. Through the application of this environment has reduced the risk of deforestation, soil erosion and drought creating diverse vegetation in the coffee garden creating a rich natural landscape. This model can be applied to other coffee commodities and regions in the transition in line with the Government's policy of promoting ecological agriculture in recent years.

However, the application of the VSA model may face certain challenges. First of all, there are very different interpretations of VSA. Most of the surveyed households do not know or understand this concept (usually households are only familiar with the concept of sustainable landscape). This will affect the implementation of the model. Second, some regions that are implementing pilot models are often areas with many projects and programs of the government as well as other donors with large support resources, which easily bring about success. Therefore, expanding to other areas with more restrictive conditions will certainly face many difficulties and limitations. The issue of traceability has not been solved by this model while exporters and consumers are always interested in this issue. Connecting the output market is the most important factor in model development and expansion. There should be a clearer and more specific commitment from businesses. In addition, besides coffee products, it is necessary to consider promoting the market for intercropping products to ensure stable and sustainable income for households in the region.

4. Conclusions

Vietnamese coffee is facing many opportunities to expand markets and increase product value when free trade agreements are starting to take effect, but technical barriers, certification requirements related are posing many challenges for this product. The development of large-scale certified material areas (VSAs) based on the landscape coffee approach is the inevitable direction. Coffee landscape farming is the process of completing, improving and promoting the coffee sub-system to approach the forest ecosystem effectively and sustainably in all three aspects of economy, society and environment. In addition, economic development coupled with resource conservation is also the development orientation of the Vietnamese government in the coming time.

Developing VSA is also a solution to connect products to the market, through the SourUp forum to connect landscape areas including an alliance of stakeholders (farmers, producers, purchasing chains, local authorities, and civil society organizations) in one or more geographical areas, formal agreements between the Public-Private sector, civil society organizations and other stakeholders to define and link the goals local and global sustainability. Buyers commit to be bound by global sustainability commitments and to adhere to corporate social responsibility principles in sourcing inputs and responsible purchasing policies.

After 2 years of implementation in 3 pilot models of Lam Dong and Dak Lak, the VSA model has shown some positive impact, contributing to raising household

income, reducing greenhouse gas emissions, maintaining sustainably land and water resources and build a green, clean, and beautiful agricultural and rural environment. To be able to institutionalize the VSA model to apply to the whole country, including coffee growing areas and other agricultural production areas, it is necessary to have more pilot models in different raw material areas (industrial areas). plants have not/have received little attention and resources from projects and programs), at different and broader scales to assess adaptation and willingness to participate of people and businesses. in expanding and adjusting the model.

One of the factors that ensures the success of this model is the establishment of a Steering Committee to connect relevant issues, resources, coordinate activities with specialized (public sector) staff, need to be integrated in agricultural restructuring programs, key crop development and new rural construction.