



**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

Coffee rejuvenation model of Nescafe Company – Viet Nam

1. General information

Coffee imported from abroad into Vietnam is grown in many regions such as the Central Highlands whereas the soil is fertile and favorable climate. Vietnamese coffee has the world's leading export volume. With the massive expansion of the area, many unsuitable lands are also planted with low-yield and poor-quality coffee. On the other hand, water resources are also over-exploited along with the conversion of natural forest land to production forests, causing drought and water shortages, making income from this crop decrease and people's income affected. The coffee monoculture for a long time has brought many consequences on the living environment. It is the consumption of groundwater to irrigate plants, soil erosion, discoloration, or pesticide residues that arise in the environment. Because of these same phenomena, coffee yields are often reduced over time, threatening the livelihoods of coffee growers. The quality of coffee gardens decreases due to aging and overexploitation, so the yield decreases. The Vietnamese government has a program to replant coffee trees to overcome this situation. Responding to the change in coffee farming methods to be more sustainable than the NESCAFÉ Plan initiated in 2011. Nestlé Vietnam has strengthened public cooperation -

Nestlé Vietnam has strengthened public-private cooperation with partners such as Central Highlands Agro-Forestry Science Institute, Provincial Agricultural Extension Centers, Ministry of Agriculture and Rural Development and other organizations and partners. The NESCAFÉ Plan program has successfully connected with farmers in the Central Highlands, improved the quality of Vietnamese coffee beans, applied sustainable farming methods, replanted old coffee trees, and increased incomes of farmers, ensuring livelihoods as well as increasing the power of female farmers.

At the same time, regenerative agriculture improves soil quality and fertility as well as protects water resources and biodiversity. The improvement of soil quality also helps to increase the ability to absorb carbon gas into the soil, reducing emissions.

2. Model development

The model of "regenerative agriculture" clearly identifies three main resources as land, water and biodiversity. This is at the heart of comprehensive restoration efforts. Especially, the most important thing in this model is that farmers must be the center of the model. Farmers are the ones who manage resources and make decisions about activities appropriate to their own particular circumstances.

This model not only helps Central Highlands farmers reduce costs, increase productivity, quality and profits, but also brings greater values. It is reducing chemical use, reducing greenhouse gas emissions, conserving and restoring agricultural land and ecosystems, bringing great benefits to the environment and society,

The NESCAFÉ project in Vietnam has undergone a long journey with the following historical milestones:

- 2010: The global project NESCAFÉ Plan was implemented by Nestlé Group.
- 2011: The NESCAFÉ Plan project was officially launched in Vietnam, piloted in the 3 provinces of Dak Lak, Lam Dong and Dak Nong.
- 2012: Expanding the NESCAFÉ Plan program to Gia Lai province, expanding key coffee growing areas in the Central Highlands, including Dak Lak, Dak Nong, Gia Lai and Lam Dong provinces.
- Year 2015: Application of software FARMS and FFB (Digital Farmer's Diary) to manage live data of each farm, in order to provide timely support to each household.
- In 2019: Received a certificate of merit from the Ministry of Agriculture and Rural Development with excellent achievements in contributing to Vietnam's coffee industry and sustainable agricultural development under the public-private partnership (PPP) model, contributing to the development of Vietnam's agriculture and rural development.
- From 2011 to present: Nestlé has continuously maintained a seedling distribution channel to support farmers and the Government in the program of replanting old coffee areas. Introduction of farming model according to Good Agricultural Practices (GAP/NBFP - NESCAFÉ Better Farming Practices).

During more than 10 years of implementation in several Central Highlands provinces, the NESCAFÉ Plan has supported farmers to replant 63,000 hectares of old coffee areas, distributing more than 63 million high-quality coffee seedlings to farmers. farmers and help save 40-60% of irrigation water and reduce 20% of chemical fertilizers and pesticides. The NESCAFÉ Plan program has organized and trained more than 330,000 farmers on sustainable farming, helping more than 21,000 farmers achieve 4C international coffee certification, thereby contributing to improving 30%-100% of income of farmers.

This model focuses on 3 main goals: maintaining regenerative agriculture, ensuring sustainable supply and improving living standards through GAP and NBNF (NESCAFÉ Better Farming Practices) with training for coffee growers, building model gardens and

Model of regenerative agriculture of Nescafe Vietnam

organizing visits to exchange experiences. Some of the key agricultural practices that farmers need to adopt to conserve and restore farmland, ecosystems, and important resources such as soil, biodiversity, and water including:

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| 1. Cover tree | 11. Green fences and buffers |
| 2. Crop rotation and crop diversity | 12. IPM and biological control |
| 3. Soil cover and tree cover | 13. Smart farming |
| 4. Limit plowing the land | 14. Processing and preserving organic fertilizers |
| 5. Organic fertilizers | 15. Herd management |
| 6. Irrigation technology | 16. Integrated pasture and livestock management strategy |
| 7. Create a buffer zone | 17. Synthetic landscape model |
| 8. Integrated Nutrition Management | |
| 9. Intercropping | |

As such, Nestle's agricultural model clearly identifies the three main resources of any agricultural system including land, water, and biodiversity which are the heart of collective restoration actions. The priority actions are to use more diverse production systems, to integrate livestock and to operate across the landscape: all supported by science-based agronomic and biological principles. Incorporating livestock provides the opportunity to improve nutrient cycling and optimize returns on soil and biomass, while minimizing environmental impact. Farmers here play a central role. They are the ones who manage resources and make decisions and activities tailored to their particular circumstances.

The project of regenerative agriculture in coffee trees in the Central Highlands has brought a number of positive changes to the development of this industry in the future:

Main changes in Model “Regenerative agriculture”

Before the Nescafe Plan Project	Since the Nescafe Plan Project
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<ul style="list-style-type: none"> • Traditional production has no specific standards • Old coffee, poor agricultural practices • Drought, lack of water, depleted irrigation water • Lack of water for irrigation to lower the groundwater level. • Picking green eggplant • Crushed to dry. • Low quality • Low income 	<ul style="list-style-type: none"> • Practice 4C standards to achieve 4C farmers. • Sustainable coffee development program • Distributing seedlings to download soup • Farming according to GAP standards good agricultural practice • Microbiological fertilizer application • Water saving water. • Reasonable interspersed • Ripe picking • Increased income
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Source: Nescafe Plan.

For coffee growers' income has increased markedly. Mr. Y Ty Byã (born in 1968, Ede ethnic group) in Pu Hue village, Ea Ktur commune, one of the sustainable coffee farmers under the NESCAFÉ Plan, said that he is currently cultivating 1.7ha of coffee (800 trees were replanting) intercropped with 500 pepper trees. The model of coffee intercropped with pepper with a density of 3 rows of coffee interlaced with 2 pepper bands. His family obtained 4.2 tons of coffee and 2.5 tons of pepper, of which the profit from the 2021-2022 crop year increased by 220% compared to the 2019-2020 crop. Previously, he was like many farmers in Ea Ktur grow coffee in the traditional way, often abuse fertilizers and chemical pesticides that make the soil degraded, plants are susceptible to diseases and then die. Therefore, production output is not stable leading to uncertain income.

In 2014, participating in the NESCAFÉ Plan program, he was supported with scientific and technical training to grow coffee sustainably and buy new coffee varieties for replanting. When switching to regenerative agriculture, coffee growers have knowledge about bio-weeding. The twigs and dry leaves of trees that were previously collected and burned are now spread in the garden, to prevent weeds from growing, and when they rot, they will create humus to improve soil fertility.

Coffee garden of regenerative agriculture model



Source: Nescafe.

In addition, they also know how to make microbial fertilizers from coffee husks and grounds. Growing coffee and pepper in this way saves investment costs, healthy crops, increases productivity and income. Especially, in the current situation of double increasing of fertilizer prices, the regenerative agriculture model helps farmers reduce costs a lot. Moreover, through the connection of sustainable agricultural product consumption, every year, Nestlé buys 20-25% of Vietnam's coffee output for deep processing for domestic consumption and export. In order to connect more closely with farmers, NESCAFÉ Plan experts have also applied FARMS software to manage live data of each farm to provide timely support to each household. The software also creates a database of best farming practices for each farmer so that other farmers can learn and apply on their coffee farm.

3. Opportunities and challenges

In the trend of integration with the international economy, Vietnam's agriculture has gradually turned to sustainable development, so ecological and regenerative agricultural models have gradually become an inevitable trend. Therefore, this model is suitable for future development trends.

With economic, social, and environmental benefits, the revived agricultural model for coffee in the Central Highlands is a model for sustainable development that can be applied to other crops, especially the trend of gradual transition from monoculture to multi-

crop farming, from production-output-based agriculture to agricultural economy-based development with an emphasis on added value and sustainable development.

However, in the process of applying this farming model, certain challenges will be encountered. First of all, with a long-term and comprehensive goal, the model requires the simultaneous deployment of solutions and requires time to be effective, so it will contradict the short-term benefits which affect livelihoods, etc. Moreover, with the limited awareness and understanding of coffee growers with traditional farming methods that require long time to change their perceptions and actions. This requires the unity of awareness and collective action of actors participating in the value chain.

4. Conclusion

Nescafe Vietnam's regenerative agriculture model in recent years has had certain successes, contributing to the implementation of sustainable development strategies of Vietnam's agricultural sector towards ecological and organic agriculture. with the goal of restoring the environment and cultural and community values.

To expand and replicate the model in other regions or other agricultural products, it requires collective action of actors in the industry value chain from development strategy and policy formulation levels to direct participants such as farmers, enterprises or government management agencies in providing support services such as input supply, agricultural extension or training, etc.