

Transferring advanced technologies, improving added-value and management of sustainable and safe fruit and vegetable value chains in Northern Viet Nam.

(Vietnam)



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A. Action Plan Topic

Transferring advanced technologies, improving added-value and management of sustainable and safe fruit and vegetable value chains in Northern Viet Nam.

1. Action Plan Title

Agricultural marketing policies in Korea: focused on fruit and vegetable (Policy lecture 13) and smart agricultural policy in Korea (Policy lecture 8)

2. Action Plan Topic

Transferring advanced technologies, improving added-value and management of sustainable and safe fruit and vegetable value chains in Northern Viet Nam.

3. Related work in your organization

Describe your work in your country that related to the Action Plan topic and identify what is applicable to your work area in relation to the topic of Action Plan.

I am agricultural extensionist, Now I am working at NAEC. I am mainly responsible for:

- Participating in developing strategies and plans for long-term, mid-term and annual agricultural extension development. I participate to build the coaching plan suitable with the needs of local and orientation of Ministry of Agriculture and Rural development. Orientation of development to prioritize production to develop vegetable production in the direction of GAP, ensuring food hygiene and safety, applying integrated crop management, value chain production; To develop key fruit trees in the direction of welding chemical production, sustainably, in the direction of GAP, and increase the added value of products.

- Providing guidance on contents and methods of agricultural extension activities, crop cultivation for agencies and units participating in agricultural extension activities through training in production and business knowledge and skills and provision of services to assist

farmers in carrying out effective production and business activities adapted to ecological, climate and market conditions.

- Cooperating with universities, institutes related to agriculture to compile documents for Development, standardizing of professional technical documents appropriate to farmers in different geographic regions and extensionists at all levels. Prioritize the documentation of documents related to safe crop production along the value chain.

- Organizing international training course for extensionist and key farmer of ASEAN countries to transfer knowledge and skills on safe crop value chains and....

Background and Purpose

In the trend of globalization and world integration, competitiveness of products is one of the elements to survive and expand the market. Improving the quality of vegetables and fruits, proceeding to create stability in food quality and safety under GAP standards is a vital issue of Vietnamese agricultural products. The fruits and vegetables of Vietnam will be able to compete on the world market, if the vegetables and fruits of good quality and ensure food hygiene and safety meet GAP standards.

In 2007, Vietnam became the 150th member of the World Trade Organization (WTO). Bilateral Free Trade Agreements (FTA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) will help Vietnam integrate more broadly into the world economy. Thus, Vietnam must carry out its commitments and satisfy quality standards as well as technical barriers if it wants to export agricultural products to other countries. On the other hand, with the increasing development and higher income, the domestic consumers' demand on food safety also increases quickly.

The Government of Vietnam, the Ministry of Agriculture and Rural Development and localities have recognized the importance of safe agricultural production (GAP) and have issued many production techniques on safe vegetables and fruits according to VietGAP. The Agricultural Extension System - role to connecting between the State, scientific research agencies and farmer households and markets, has also implemented programs, projects, technical guidelines on safe vegetable production according to VietGAP.

The VietGAP standard (good agricultural practice) with more than 65 criteria for safe crop production is a mandatory requirement for large-scale farmers to apply in the production process. However, 90% of Vietnamese farmers are small, fragmented and have low income. Most of farmers' agricultural products are consumed in the domestic market, so it is difficult to apply VietGAP in the production process. A part of farmers who produce safe vegetables still follow profits, overlooking the health of consumers ... so there is still the abuse of pesticides, chemical fertilizers that do not guarantee time. isolation ... Besides, consumers have not believed in the quality of safety vegetables.

The "Basic GAP" has been developed by MARD with the support of JICA as an initial step to enable most farmers to apply the practices in safe crop production and towards

consumption markets in the country. The "Basic GAP" has been simplified by selecting the most basic criteria of the current VietGAP standard and does not require producers to register and apply for certificates. Instead of implementing all 65 criteria, initially farmers just need to perform well 26 basic criteria. Japan is proposing to apply a "Basic GAP" model on a large scale to support Vietnam in safety agricultural production so that even small-scale farmer households can carry out easily.

To promote the agricultural development for enhancing value of agricultural produces and promoting sustainable farming management via food chains, I build the action plan, namely: **"Transferring advanced technologies, improving added-value and management of sustainable and safe fruit and vegetable value chains in Northern Viet Nam"**.

2. Issues and Problems

- Technical facilities, equipment for production, product quality monitoring as well as technical staff, management of safe vegetables are lacking, especially at district and commune levels, leading to the organization of production. Export, consumption and management of safe vegetables face many difficulties.

- Agricultural production is heavily influenced by external factors, especially weather conditions, so the risk is high, not really attractive to farmers participating in production links; Safety vegetable and fruit production with a number of models, or a group of households cooperating with the production, so the sustainability was not high.

- Safety vegetable production and storage also requires high costs and many intermediaries cause high prices, making it difficult to compete with floating vegetables in the market.

- Organization of safety vegetable and fruit production in chains from production to marketing of products has not been popularized, so the level of consumer confidence in safety products is very low, not really met a full range of requirements, especially export requirements, a lack of a chain-based production model due to small scale, fragmentation, dispersion, difficulties for investment planning, quality management and consumption, and businesses are not really interested in linking production.

- The over-use of chemical fertilizers and pesticides are a main reason causing the unsafe food hygiene and safety, affecting Vietnam's fruit brand in the domestic and export markets.

- Infrastructure for concentrated fruit and vegetable production areas is weak and inadequate, unable to keep pace with production development such as intra-regional transportation systems, specialized means of transport, logistic costs and freight rates high shipping. The system of product distribution and consumption is not yet professional;

- The rate of post-harvest loss is still high; technology of post-harvest processing is time-consuming. Lack of technology and processing factory. Processing products are mainly for export, but not diversified, many factories do not have stable material areas.

- Lack of knowledge in applying digital technology in safety vegetable production process, promoting communication.

3. *Relevant Policies and Programs*

Integrating with the development of the world, there are many social factors in the country affecting the demand for safe and good quality agricultural products such as the expansion of cooperation with other countries, the income of people. population growth, development of infrastructure, and commercialization lead to a change in people's way of life. To meet the requirements and development of society, producers have no other way but to produce safe and high-quality products to satisfy the needs of consumers at home and abroad and increase. income for goods producers.

Vietnam has become a member of the WTO (Global Free Trade Organization), as a member of the WTO, Vietnam needs to address many issues, including the commitment to apply hygiene standards. food safety (FHS), WTO countries can use FHS as a barrier to prevent products from other countries from entering their markets to protect domestic production. Therefore, improving fruit quality, proceeding to create stability in food quality and safety in the direction of GAP is a matter of survival of vegetables and fruits, in order to enhance the competitiveness of Vietnamese fruits in the market. Regional and world schools are essential and urgent in the current situation.

The Decision No. 899 /QD-TTg dated June 10, 2013 of the Prime Minister approved the Project "Restructuring the agricultural sector towards increasing added value and sustainable development". Restructuring the agricultural sector is a component of the overall restructuring of the national economy, consistent with the national socio-economic development strategy and plan; associated with economic and social development and environmental protection. In the field of cultivation, the Project identified: Restructuring crops towards developing large-scale production, focusing on preservation, processing and consumption along the value chain on the basis of promoting the advantages of production. products and advantages of regions and regions; Promote the application of science and technology, especially high technology to increase productivity, quality, reduce costs and adapt to climate change. To concentrate investment on developing the processing industry, especially deep processing and post-harvest preservation towards modernization, in order to reduce post-harvest losses and raise the added value of products; The project focuses on high-tech and large-scale vegetable, flower and fruit production in advantageous localities and at the same time encourages the development of home gardens; Restructuring the organization system of production, purchasing, processing and consumption of products; encourage enterprises to associate and sign contracts on production and sale of farm produce with farmers; developing groups of farmers to voluntarily cooperate and link production along the value chain; Support training, extension and advisory services to improve planting, tending and harvesting techniques for farmers; expand agricultural insurance support; Increasing income for farmers through the equitable sharing of profits between farmers, processing facilities and export-consuming enterprises.

The Decision No. 1003/QĐ-BNN-CB dated May 13, 2014 of the Ministry of Agriculture and Rural Development approved the Project "Enhancing the added value of agro-forestry-fishery products in processing and reducing post-harvest losses" with the goal: Improving the value, efficiency and competitiveness of agriculture, forestry and fishery products through reorganizing production, restructuring product structure towards increasing the proportion of high value added products, apply science and technology, renovate processing technology towards modernization and reduce post-harvest losses, improve food quality and safety. In particular, focusing on restructuring the processing products towards increasing the proportion of high value added products, improving quality and ATTO, lowering product costs and implementing synchronous solutions to reduce the total loss of products later. harvest.

The Decision No. 1016/QĐ-BNN-CB dated May 13, 2014 of the Ministry of Agriculture and Rural Development promulgating an action plan to implement the project "Enhancing the added value of agricultural, forestry and aquatic products in processing and reducing real post-harvest losses, "contributing to the implementation of the Restructuring project in agriculture towards higher value-added and sustainable development, with a focus on organizing production towards strengthening production linkages. material export - processing - consumption; reduce post-harvest losses; restructuring products, improving quality and food safety; training and developing human resources; applying science and technology in processing and preserving to reduce post-harvest losses, clean production and environmental protection.

The Decree No 83/2018/ND-CP dated May 24, 2018, clearly states that the purpose of agricultural extension is to improve production and business efficiency of organizations and individuals operating in the agricultural sector to increase revenue. import, reduce poverty, get rich and adapt to ecological, climate and market conditions through contents, forms and methods of agricultural extension activities. Contribute to restructuring agricultural economy towards commodity production development, improving productivity, quality and food safety.

Decision No. 1360 / QĐ-BNN-KHCN dated April 24, 2019 of the Ministry of Agriculture and Rural Development approving the Central Agricultural Extension Program period 2020-2025, which encourages the application of advanced technologies and new technologies in production to improve farmers' income through a number of effective linkage models along the value chain of products; To develop crop production in the direction of modernizing and producing large goods, increasing productivity, quality, efficiency and competitiveness, firmly ensuring national food security and social security; Technical training and business skills, effectively use land and water resources, adapt to climate change and protect the ecological environment. Orientation of development to prioritize production to develop vegetable production in the direction of GAP, ensuring food hygiene and safety, applying integrated crop management, value chain production; To develop key fruit trees in the direction of welding chemical production, sustainably, in the direction of GAP, and increase the added value of products.

3. Proposed Goals

<Gap Analysis>

“As Is” vs. “To Be”	
To Be	<ol style="list-style-type: none">1. Fruit and vegetable production process according to VietGAP, Basic GAP, ASEAN GAP, Global GAP depending on customers' needs2. Farmers manage the field diary according to the software3. Raise customer awareness to increase the use of safe fruit and vegetable products through training courses through organizing customer conferences to encourage customers to use safety fruit and vegetable.4. Agricultural extension officers, cooperative members, famrmers are equipped and improved with scientific and technical knowledge, knowledge of product value chains, and knowledge of markets and product consumption through training courses, workshops, forums, study tours,...5. Developing e-learning training materials towards e-extension on e-extension on production, harvest, processing and preservation of safe vegetable and fruit.6. A guideline documents the process of building and designing a loan project for safe fruit and vegetable production according to GAP standards.
As Is	<ol style="list-style-type: none">1. Fruit and vegetable production process is not folloing the VietGAP or BASIS GAP2. Farmers manage the field diary according to the book3. Customers do not believe in safe fruit and vegetable products.4. Agricultural extension officers, cooperative members, farmers lack knowledge of science and technology, knowledge of product value chains, knowledge of markets and product consumption.5. There is no e-learning training materials towards e-extension on e-extension on production, harvest, processing and preservation of safe vegetable and fruit.6. It is no document to guide to implement the project.

4. Strategy and Action Plan Concept

With the consideration of the analysis and lessons-learned through the program, you are highly encouraged to suggest improvement plan or programs that better resolve the problems and issues.

- **Describe strategy**

- Support farmers to apply the methods of safe crop production according to Basic GAP, ASEAN GAP, Global GAP, ...following the needs of customer (fdriven-market)

- Training and mentoring farmers on product promotion, production and business planning, organization management, contract negotiation, accounting, post-harvest losses, etc.;
- Raise consumer awareness about using safe agricultural products
- Promote cooperative relationships between farmers, wholesalers, supermarkets and vegetable shops so that cooperation brings benefits to all parties.
- Developing e-learning training materials towards e-extension on e-extension on production, harvest, processing and preservation of safe vegetable and fruit.
- Document the project's results and lessons learned for replication.

- ***Describe Action Plan Concept:***

An action plan is a checklist for the steps or tasks you need to complete in order to achieve the goals you have set.

5. Outline of the Action Plan

5.1. Outline of the plan

- Implementing Organization: National Agricultural extension Center
- Duration of the Project: 3 year (2022-2024)

5.2. Action Plan Components

5.1 Component 1. Increasing safe fruit and vegetable production based on Good Agricultural Practices (basic GAP) and apply advanced technologies for post-harvest.

a. Activity contents:

- Develop safe vegetable and fruit production models (basic GAP application, VietGAP) according to the value chains in some provinces in the north of Vietnam (net house model with modern equipment).
- Develop processing and preserving model of safe vegetables and fruit products, reduce post-harvest losses (model of preliminary processing houses, cold storage).
- Strengthen the capacity of organizing and management of safe and sustainable vegetable and fruit production through training and education activities.
- Enhancing the capacity and awareness of consumers about safe fruit and vegetable products through information dissemination, communication, conferences/ customer forums.

b. Expected results:

- Building model of safe vegetable and safe fruit production, applying basic GAP in some provinces in the north of Vietnam

Implementation time: 3 years (2022 – 2024).

Total scale of 50 hectares of vegetable and fruit production.

The productivity of vegetable and fruit is equivalent to mass production. Products are certified to meet standards, sign consumption contracts with shops, businesses, schools...reaching at least 70% of production output.

- Supporting the farmer - cooperative a model of production on the field, the model of net house for vegetable.

- Organizing the training courses for agricultural extension workers, project implementation technicians, cooperative staffs, training courses for managers, farmers out of the model knowledge on safe vegetable, fruit production according to GAP, marketing, value chains,...

- Technical documentation: E- extension materials, leaflets/flyers, technical instructional video clips, brochures...

- Organizing conferences, field trips, forums to share experiences.

- Organizing information communication activities (development of banners, posters, leaflets, flyers, television reports and propaganda information on the website of the National Agricultural Extension Center, ...) on project results.

- Organizing communication activities in schools (drawing, writing competitions, building communication messages on safety vegetable and fruit use).

- Organizing customer conferences to encourage customers to use safety fruit and vegetable.

- Completing economic and technical norms and production processes for safety vegetable and fruit.

- Developing e-learning training materials towards e-extension on e-extension on production, harvest, processing and preservation of safe vegetable and fruit.

- Technical and management staffs participating in the project continue to monitor and direct farmers in the model producing safe vegetable and fruit, ensuring the demand for vegetable and fruit under the consumption contracts signed with businesses and shops (due to production meeting quality standards, products should be sold at higher prices, with higher production efficiency). Direct and guide farmers outside to organize to replicate the model (production in accordance with the basic GAP process) to bring higher production efficiency.

- Monitoring the area and the effectiveness of the model replication to summarize, disseminate and propagate experiences for provinces that have not participated in the project.

5.2. Component 2: Application of information technology (IT) in safe fruit and vegetable production.

5.2.1 Application of IT in safe fruit and vegetable production management and traceability.

a. Activity:

- Developing utility software on mobile devices (mobile, tablet) associated with household identification number (ID) to support farmers to control the safe fruit and vegetable production (input management, production process, harvest, preservation) and traceability.

- Building quality management and traceability software for safe fruit and vegetable according to GAP standards, integrating QR generation technology and publishing QR code traceability for safe fruit and vegetable products (Connecting with software production management).

- Developing digital maps for management of fruit and vegetable growing regions for project provinces.

- Enhancing the capacity of IT application in production management for farmers, cooperatives, farmer groups, and enterprises.

- Training on software application in quality management and traceability for farmers, farmer groups, cooperatives, enterprises, management agencies.

b. Expected results:

- Specialized software for managing fruit and vegetable production according to GAP standards. Information in the production process is recorded on software and links between production stages, and provides limited warning levels for input management and farming techniques.

- Training courses on software application in production management, harvesting, preliminary processing and preservation.

- Quality management and traceability software for agricultural products according to GAP standards connected with production management software.

- Digital map for managing codes of fruit and vegetable growing regions in project provinces.

- Training courses on applying quality management and safe fruit and vegetable traceability software according to GAP standards.

5.2.2. Application of Information Technology in trading safe fruit and vegetable products.

a. Activity:

- Design website and software to support commercial connection and business connection opportunities (trade forum) for enterprises, cooperatives, and farmer groups in the project area.

- Enhancing the capacity in using the website and software to support commercial and investment connections for actors in the project area.

b. Expected results:

- An official website that works as a part of the National Agricultural Extension Center (NAEC) website, which would help to maintain the website during project phase and sustain it after the project closes.

- Training courses using website and software to support trade and investment connection. Training courses on building groups on social networks (e.g. Zalo, Facebook, etc.) to share information and connect buyers and sellers.

5.3. Component 3: Supporting, enhancing market access, and mobilizing fund for enterprises, cooperatives, and farmer groups on safe fruit and vegetable production.

a. Activity:

- Consulting to support developing product brand name and geographical indications (GI) for safe fruit and vegetable products in the project.

- Consulting business connection, cooperatives with Japanese business, supermarkets.

- Improving the capacity to negotiate and sign agricultural contracts with Japanese enterprises, supermarkets for farmer groups, cooperatives and enterprises to form sustainable value chains.

- Training to improve capacity of project construction and design to access loans and credit sources.

b. Expected results:

- Brands of safe fruit and vegetable products of enterprises and cooperatives in the project area.

- Contracts for production and consume safe fruit and vegetable products between enterprises, cooperatives, and farmer groups with trading enterprises.

- A guideline documents the process of building and designing a loan project for safe fruit and vegetable production according to GAP standards.

5.3. Expected Outcomes

List the outcomes that can be expected from the Action Plan.

5.4 Action Plan Time Table

[illegible]

[illegible]

