

# Deploying environmental and food safety criteria in new rural construction in Hoa Tham commune, Binh Gia district, Lang Son province in 2024

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**ABSTRACT:** *This study examines the implementation of environmental and food safety criteria under the New Rural Development Program in Hoa Tham Commune, a mountainous commune located 28 km from the center of Binh Gia District. The study highlights the achievements and challenges faced in ensuring quality and environmental safety in local agricultural activities. Although there has been progress in improving infrastructure, waste management and community participation, some problems remain, such as inconsistent waste collection, limited waste separation at the household level and water pollution in some areas. To improve the effectiveness of Criterion 17, the paper recommends expanding waste management models, strengthening public awareness campaigns and ensuring continued support from competent authorities. By addressing these challenges, Hoa Tham can further improve its environmental standards, contributing to a model of sustainable rural development.*

**KEYWORDS:** *new rural area, environment, food safety, Hoa Tham, Binh Gia, Lang Son*

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## I. INTRODUCTION

Vietnam has achieved remarkable achievements in the process of building new rural areas [1], [2]. However, in the context of increasingly serious climate change and urgent public health issues, ensuring a healthy living environment and safe food sources is one of the top priorities [3], [4], [5]. Environmental pollution and unsafe food not only cause diseases but also reduce the quality of life, affecting the sustainable development of the community [6], [7]. The implementation of environmental and food safety criteria in Hoa Tham commune faces many difficulties, especially due to steep terrain, difficult transportation, limited clean water sources and waste treatment systems. In addition, people's awareness of the importance of environmental protection and food safety is still limited, leading to environmental pollution and the use of unsafe fertilizers and pesticides [8].

This study aims to answer the following questions: What is the current status of environmental and food safety criteria implementation in Hoa Tham commune? What factors affect the implementation of these criteria? How to improve the effectiveness of these criteria implementation, contributing to the sustainable construction of new rural areas in the locality?

Meanwhile, rural economic development associated with environmental protection and food safety is an important factor, helping Hoa Tham commune move towards the goal of sustainable development, improving the quality of life for the community. In order to meet the requirements of the New Rural Development Program, it is necessary to evaluate and analyze the implementation of environmental and food safety criteria in Thien Long commune.

## II. DATA AND RESEARCH METHODS

**2.1. Database:** The article uses data collected from legal documents and policies of the Party and State related to new rural construction. In addition, data on natural conditions and socio-economic conditions of the locality, as well as documents on the current state of the environment and food safety in the locality, are all important data sources for evaluating research results. The statistical information contained in these documents will serve as the basis for analyzing and evaluating the implementation process of new rural programs and criteria in the locality.

### 2.2. Research method:

**Field survey method:** This method is used to collect data on natural conditions, natural resource potential and socio-economic situation of the locality. During the survey and research process, a combination of actual data collection and direct observation was used to assess the implementation of relevant criteria, especially

environmental and food safety criteria in the locality. The combination of these two factors helps provide a comprehensive view of the actual situation of the criteria in the commune.

Comparison method: The comparison method is applied to compare the specific criteria in Criterion 17 of Hoa Tham commune with the requirements for the Northern Midlands and Mountainous regions, as stipulated in the National Criteria for New Rural Communes (according to Decision No. 318/QĐ-TTg dated March 8, 2022 of the Prime Minister). This comparison helps assess the level of achievement of the criteria for the specific conditions of the locality, thereby making specific comments and recommendations.

### **III. RESULTS AND DISCUSSION**

#### **3.1. Socio-economic situation of Hoa Tham commune**

Hoa Tham is a commune in the mountainous region, 28 km from the center of Binh Gia district. The commune has 2 provincial roads passing through it, including provincial road 226 and provincial road 231 passing through the commune. There are 8 villages, including 849 households and 3,641 people, with 4 main ethnic groups: Tay, Nung, Kinh, Dao living together in harmony in the residential area.

In recent years, with the attention of leadership, direction and coordination between all levels and sectors from the district to the grassroots, in implementing the tasks and goals of socio-economic development in the area. The infrastructure system has changed a lot, basic construction works such as: office buildings, welfare works, traffic systems, water supply and drainage, information networks in the commune are gradually being invested in, renovated and upgraded by the State; Business services and trade are increasingly developed.

The infrastructure in the area has developed, creating favorable conditions for socio-economic development. The economy has been shifting in the right direction, the economic growth rate is increasingly improved, and people's lives are increasingly guaranteed.

Cultural, health, and educational work has been invested in facilities, basic schools have been invested in, built, equipped, and staffed, ensuring to meet and serve the needs of the people better and better, and national defense and security are guaranteed.

However, Hoa Tham is a mountainous commune in region 3 with a low starting point, the infrastructure structure still has many difficulties, the economy has developed but slowly, not commensurate with the potential of the locality. The awareness of a few households and individuals is still limited, and they have not strictly complied with the State's regulations on land and environmental management.

#### **3.2. Results of implementing environmental and food safety criteria according to the National Criteria for New Rural Construction in 2024**

Implementing Plan No. 106/KH-UBND dated March 28, 2024 of the People's Committee of Binh Gia District on the plan to implement the National Target Program on New Rural Construction in Binh Gia District in 2024;

Implementing Plan No. 107/KH-UBND dated March 28, 2024 of the People's Committee of Binh Gia District on the plan to build Hoa Tham commune to meet new rural standards in 2024;

Hoa Tham Commune People's Committee reports the results of reviewing and evaluating the implementation of criterion No. 17 on environment and food safety in building new rural areas in Hoa Tham Commune in 2024 as follows:

##### **3.2.1. Criteria requirements:**

- The rate of production - business establishments, aquaculture, and craft villages that ensure environmental protection regulations:  $\geq 90\%$ .
- Landscape, green - clean - beautiful, safe space; no stagnant domestic wastewater in concentrated residential areas: Achieved.
- Public green space in rural residential areas:  $\geq 2$  m<sup>2</sup>/person;
- The rate of domestic solid waste and non-hazardous solid waste in the area collected and treated according to regulations:  $\geq 70\%$ .
- The rate of used pesticide packaging and medical solid waste collected and treated to meet environmental protection requirements: 100%.
- The rate of households with hygienic toilets, bathrooms, and domestic water storage facilities that ensure 3 cleans: "Clean house, clean kitchen, clean alley":  $\geq 70\%$ .
- Percentage of households classifying solid waste at source:  $\geq 30\%$ .
- Percentage of plastic waste generated in the area that is collected, reused, recycled, and treated according to regulations:  $\geq 30\%$ .

### **3.2.2. Results of implementing criteria:**

- Results of implementing content 17.2: There are 04 production and business establishments in operation in the commune.

Of which, 01 establishment is An Hong Agricultural Production and Service Cooperative; Type of business activity: Construction of commercial pig farms and production of breeding pigs. The production and business establishment is subject to environmental records. This establishment has a Certificate of Cooperative Registration and an Environmental License from the People's Committee of Lang Son province; Collection and treatment of waste to ensure environmental hygiene, up to now, there have been no complaints or recommendations from the people. The remaining 3 establishments are small businesses and are not required to prepare environmental records. These establishments have signed a commitment to comply with environmental protection regulations in business activities; collect and treat waste to ensure environmental hygiene. There are no recognized aquaculture facilities or craft villages in the commune. Self-assessment results: Meet the target.

- Results of implementing content 17.3: Landscape, green - clean - beautiful, safe space; no stagnant domestic wastewater in concentrated residential areas. Hoa Tham Commune People's Committee has assigned tasks to commune officials and civil servants in charge of the village area, in coordination with the Commune New Rural Construction Management Board, to propagate and mobilize people in the commune to carry out environmental sanitation work in public areas such as the village cultural house, village and commune roads, schools, commune People's Committee headquarters, commune health stations, etc. - Green space landscape: As a remote mountainous commune with a forest coverage area of up to 90%. Provincial roads 226, 231 and village roads, trees on both sides of the road have been cleared, drains have been cleared, and there is no stagnant water. The Commune People's Committee has promoted households to actively plant and care for trees (including shade trees, landscape trees, flower trees, etc.), prioritizing the use of native trees, typical of the region and suitable for mountainous rural areas, ensuring the protection of rare and valuable trees. Tree planting must not affect traffic safety, damage public works and public works (do not plant trees that are easy to break or fall); do not affect environmental hygiene, do not plant invasive alien species according to regulations. Priority must be given to planting trees in public places such as: Commune People's Committee headquarters, kindergartens, schools, commune health stations to create green space landscapes. Due to local people's habits, the population is not concentrated and sparse, so the mobilization to build green fences still faces many difficulties.

- Clean space landscape: The total length of the commune's current roads includes 33.8 km of commune roads, 10.345 km of village roads and 24.51 km of alley roads. The rate of concreted commune roads is 96.75%, village roads is 81.6%, alley roads is 73.64%. Trees on both sides of the road are basically cleared, drains are cleared, there is no stagnant water. - Beautiful and safe space landscape: The space landscape in the school area has been planted with flowers, and the space is taken care of and decorated every week to ensure the criteria of green - clean - beautiful - friendly environment. The People's Committee of the commune continues to plant flowers and ornamental plants in the newly built commune People's Committee headquarters, school areas, medical stations and along the alley roads, contributing to gradually creating a green - clean - beautiful space in residential areas. The roads in the commune are clear, do not encroach on the roadside and do not litter indiscriminately. At dangerous locations where landslides are likely to occur, there are warning signs for people. - Regarding domestic wastewater: Most households make their own ditches to collect wastewater. Some households have not built ditches or drains for domestic wastewater, so domestic wastewater is still discharged by the method of self-seepage in the family's land. The headquarters of the commune's People's Committee, health stations, and schools in the commune are renovated, cleaned, flowers and ornamental plants are planted appropriately, and toilets meet hygienic standards.

- Implementing the content of the village convention on environmental sanitation:

The People's Committee of Hoa Tham commune issued Decision No. 133/QD-UBND, dated July 10, 2024, recognizing the Convention in villages in Hoa Tham commune and implementing the contents on environmental protection in the work of building new rural areas in the commune in 2024. Regularly organizing campaigns to mobilize cadres, civil servants and people in the area to clean the environment, clear village roads and alleys, and decorate houses. As a result, once a month, the villages organize a general environmental cleaning in public areas such as the village cultural house and village main roads; in addition, households themselves carry out environmental sanitation in their household premises, thereby gradually changing the thinking, awareness, consciousness and actions of all individuals in the commune on rural environmental protection. Indicator assessment results: Achieved

- Results of implementing content 17.6: The rate of domestic solid waste and non-hazardous solid waste in the area is collected and treated according to regulations. Target achieved  $\geq 70\%$

- Domestic solid waste: In Hoa Tham commune, due to the small amount of waste generated, there is no unit to collect, transport and treat waste. Solid waste treatment is carried out by encouraging households to collect, classify and treat waste at home by burning or burying. Hoa Tham market waste is collected, transported and treated by burning at the incinerator at the end of Hoa Tham market.

- In the commune, there are 04 incinerators supported by the Environmental Protection Fund of Lang Son province built in Vinh Quang village and 28 incinerators built by households in 8 villages in the commune. There are 658/849 households that regularly collect and treat solid waste, reaching 77.4%. The treatment is done by digging burial pits on the family's land. Some households have built their own household-scale incinerators, burning 3-4 times/day, and some households burn waste at common incinerators. However, there are still some households that have not collected and treated waste according to regulations.

- Non-hazardous solid waste (industrial solid waste, construction waste, agricultural by-products) has been collected and treated by people. However, the implementation is not regular and the treatment measures are not thorough. Agricultural by-products are used as animal feed and fertilizer.

The People's Committee of the commune has implemented village conventions and regulations on environmental protection in the work of building new rural areas in the commune in 2024. Self-assessment of indicators: Achieved.

- Results of implementing content 17.7: The rate of used pesticide packaging and medical solid waste collected and treated to meet environmental protection requirements.

- Collection and treatment of used pesticide packaging:

Pesticide packaging and bottles after use in agriculture are collected into tanks using precast concrete culverts. Currently, the commune has built 18 pesticide storage tanks that have been granted according to the black jelly growing area code since the beginning of 2023, with an estimated 2.8 kg being stored in 18 tanks.

In 2024, implementing financial support from the national target program on new rural construction to carry out environmental protection work with a support budget of 100,000,000 VND, Hoa Tham commune is installing 62 prefabricated pesticide packaging tanks in 8 villages. As of November 25, 2024, 32 tanks/62 tanks in 06 villages including Tan Lap, Na Pan, Ban Tham, Bang Giang, Tan Hoa, Doi Can I have been transported to the villages; the supplier will transport the remaining 30/62 tanks to the remaining villages for installation before December 5, 2024. The People's Committee of the commune is continuing to propagate to the people to collect used pesticide packaging and not to put other waste in the tanks. The rate of used pesticide packaging collected meets the requirement of  $2.8\text{kg}/2.8\text{kg} = 100\%$ .

- Collection and treatment of medical solid waste: In Hoa Tham commune, there is 01 medical station, waste at the facility is managed according to the provisions of Circular No. 20/2021/TT-BYT dated November 26, 2021 of the Ministry of Health regulating the management of medical waste within the premises of medical facilities, specifically as follows:

+ General medical solid waste: classified and collected separately from hazardous medical waste, treated by incineration at the commune health station;

+ Infectious and hazardous medical solid waste: classified and collected separately from regular industrial solid waste, domestic solid waste, transported to the district medical center for transportation and treatment according to regulations. The health station has a logbook and a waste transportation contract attached.

+ The total volume of infectious hazardous medical solid waste collected in 1 year (from January 1, 2024 to October 30, 2024) is  $5\text{kg}/5\text{kg} = 100\%$ .

+ The total volume of normal medical waste generated from medical examination and treatment activities of the commune health station is 22kg. About 1.83kg/1 month is treated by burning at the incinerator of the health station. The total volume and proportion of medical solid waste generated are collected, classified and treated according to regulations to meet the requirements (100%).

- Results of implementing content 17.8: Percentage of households with toilets, bathrooms, and sanitary water storage facilities that ensure 3 clean. Target achieved  $\geq 70\%$ .

The Commune People's Committee directed the Commune Women's Union to take the lead in propagating and mobilizing households to build and renovate unsanitary works, associated with the "5 no 3 clean" movement, with the following results:

+ The rate of households with hygienic toilets is 724/849 households, reaching 85.3%

+ The rate of households with hygienic bathrooms is 721/849 households, reaching 84.9%

+ The rate of households with hygienic water tanks is 777/849 households, reaching 91.5%

+ The rate of households regularly cleaning and keeping their houses, kitchens, cooking areas, and alleys clean is 735 households, reaching 86.6%

Self-assessment results: Achieved target.

- Results of implementing content 17.11: The rate of households classifying solid waste at source. Target achieved  $\geq 30\%$ .

The Commune People's Committee The People's Committee of the commune has issued Plan No. 52/KH-UBND dated March 28, 2024 on building Hoa Tham commune to meet new rural standards in 2024 and Plan No. 01/PA-UBND dated May 15, 2024 on collecting, transporting, treating waste and environmental sanitation in Hoa Tham commune, Binh Gia district. The People's Committee of the commune directs propaganda and guides households to classify and collect waste as follows:

- Food waste is encouraged to be used as organic fertilizer and animal feed.
- Waste that can be reused or recycled is collected for reuse or transferred to individuals for reuse and recycling according to regulations.
- Other domestic solid waste: Encourage households to collect and classify domestic waste at home and store it in suitable containers (such as plastic buckets, plastic baskets, covered baskets, etc.) and then, when the weather is sunny, treat the types of waste that are difficult to decompose according to appropriate measures to ensure environmental hygiene, such as: Can be buried in household waste landfills or burned regularly every day (once a day) in airy places, far from houses, away from objects that are at risk of causing fire and explosion, do not let a lot of waste accumulate, ...; absolutely do not dump garbage into sewers, rivers, streams, ponds and lakes, causing loss of aesthetics and environmental pollution. The total number of households in the commune that classify solid waste at home is 278/849 households (reaching 32.5%).
- Results of implementing content 17.12:

The People's Committee of the commune actively directed the implementation of propaganda work for local people to classify solid waste, collect plastic waste, and not discharge directly into the drainage system, ponds, lakes, rivers, and streams.

Currently, the commune has 287/849 households classifying and collecting plastic waste. The total volume of plastic waste generated is about 3,519 kg/day on average, the rate of plastic waste collected, recycled, reused, and treated according to regulations is about 1,304 kg/day on average, reaching 37.06%. Collected plastic waste is basically reused by households or transferred to functional units for treatment (through the form of selling scrap). Every year, plastic waste generated from cultural, sports, and festival activities is also collected and reused.

Assessment of criterion 17 on environment and food safety: Achieved.

### **3.3. Limitations, shortcomings and solutions**

#### **3.3.1. Limitations in implementing criterion 17:**

Limited collection and treatment of domestic solid waste: Although about 77.4% of households collect and treat solid waste, some households have not yet complied with regulations. Waste treatment is mainly carried out through self-treatment methods at home, mainly by burning or burying. This can lead to air and land pollution, especially for waste that cannot be easily decomposed.

Landscape and living environment are not completely clean: Although the commune has taken many measures to improve the landscape and living space, the problem of domestic wastewater has not been treated synchronously. Some households still discharge domestic wastewater directly into the ground or areas without sanitary drainage systems, causing environmental pollution risks.

Limitations in waste classification at source: Despite efforts to promote and mobilize, the rate of households classifying solid waste at source is still low (only 32.5%). This affects the effectiveness of recycling and sustainable waste treatment.

Environmental protection at production facilities is not completely adequate: Small-scale production facilities are not subject to environmental records, although they have signed environmental protection commitments, but still have potential risks of industrial waste and impact on the living environment of the community.

Plastic waste collection is still low: Although the commune has made progress in collecting and reusing plastic waste, the rate is still low (only 37.06%), showing that there are still many challenges in changing people's habits about plastic waste treatment.

#### **3.3.2. Solutions to better implement criterion 17:**

Build and deploy a professional solid waste collection and treatment system: The commune needs to cooperate with environmental units to build and deploy a synchronous solid waste collection and treatment system. It is possible to develop centralized waste collection points in public areas, especially in densely populated areas such as villages and school areas, medical stations. Support for households to build waste collection tanks can be expanded and improved, encouraging safe and sustainable treatment methods such as waste classification at source, recycling and biological treatment or treatment according to standards.

Strengthen propaganda and guidance on waste classification at source: Local authorities need to continue to promote propaganda and mobilize households to classify waste at source. At the same time, it is necessary to organize training sessions and provide specific instructions on waste classification measures, the benefits of recycling and treating domestic waste. Pilot models of waste classification and treatment can be applied in some villages, thereby expanding to other areas.

Improving drainage and domestic wastewater treatment systems: To ensure a clean living environment, the commune needs to prioritize investment in upgrading the domestic wastewater drainage system in residential areas without a modern drainage system. The construction of wastewater treatment plants in villages, schools, and medical stations can help reduce the pollution of domestic wastewater.

Encouraging production facilities to comply with environmental protection regulations: To improve environmental quality, it is necessary to develop support mechanisms for small-scale production facilities so that they can implement environmental protection measures more effectively. The commune government needs to coordinate with relevant agencies to conduct regular inspections and audits and promote production facilities to comply with environmental protection regulations.

Strengthening plastic waste management: To minimize pollution caused by plastic waste, the commune needs to implement community education programs on the harmful effects of plastic waste and encourage people to use environmentally friendly products. Plastic waste collection and recycling points need to be expanded and collection efficiency improved, especially in densely populated areas and public places.

Continue to improve environmental sanitation infrastructure: Increase investment in public sanitation facilities, especially in remote villages, to help people access more modern sanitation services. Household sanitation facilities need to continue to be supported in construction and renovation to meet higher sanitation standards.

By synchronously implementing these solutions, Hoa Tham commune will be able to improve the effectiveness of implementing criterion 17 on environment and food safety in new rural construction, contributing to improving the quality of life for people and protecting the environment sustainably.

#### **IV. CONCLUSION**

In the process of implementing criterion 17 on environment and food safety of Hoa Tham commune, Binh Gia district, Lang Son province in 2024, although many important achievements have been made, there are still some difficulties and limitations. Specifically, the collection and treatment of solid waste is not uniform among households, the classification of waste at source is not widely disseminated, and the discharge of domestic wastewater in some households still does not ensure environmental hygiene. In addition, propaganda and mobilization work still needs to be improved so that people are more aware of environmental protection.

To continue to improve and better implement this criterion, Hoa Tham commune needs to strengthen solutions such as expanding the household waste collection model, building centralized waste treatment facilities, promoting propaganda on environmental protection, especially waste classification at source. In addition, there needs to be close support and supervision from competent authorities to ensure that environmental criteria are fully and effectively implemented, towards a clean and sustainable rural environment.

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