LEGAL ISSUES ON ENVIRONMENT PROTECTION AND SUSTAINABLE AGRICULTURE - A CASE IN THE NORTHERN REGIONS OF VIETNAM

a Nguyen Trong Diep, b Dinh Tran Ngoc Hien

ABSTRACT

Objective: This study aims to examine the tea and coffee crops' cultivation processes in northern Vietnam, focusing on Son La and Thai Nguyen Provinces.

Method: The research investigates the agricultural journey of tea and coffee crops, encompassing stages like planting, harvesting, packing, transporting, storing, and distribution. Additionally, a marketing mix strategy is proposed.

Result: The findings highlight the intricate steps involved in producing agricultural goods, emphasizing the use of chemicals and its environmental impact. The study also proposes strategies for sustainable production.

Conclusion: In conclusion, this research underscores the need to adhere to legal regulations and implement effective measures to prevent environmental pollution caused by agricultural practices. The study's scope can potentially extend to cover other crops, industries, and markets beyond tea and coffee.

Keywords: agricultural value chain, sustainability, tea crops, coffee crops, insect alcohol traps, Vietnam.

QUESTÕES JURÍDICAS RELATIVAS À PROTEÇÃO DO AMBIENTE E À AGRICULTURA SUSTENTÁVEL - UM CASO NAS REGIÕES SETENTRIONAIS DO VIETNAME

RESUMO

Objetivo: Este estudo tem como objetivo examinar os processos de cultivo das culturas de chá e café no norte do Vietnã, com foco nas províncias de Son La e Thai Nguyen.

Received: 10/06/2023
Accepted: 04/09/2023
DOI: https://doi.org/10.55908/sdgs.v11i6.1219

a PhD, Faculty of Law, University of Law, Vietnam National University, Vietnam. E-mail: dieptrongguyenvn@gmail.com, Orcid: https://orcid.org/0000-0002-1548-9836
b BSc, Electrical Department, HCM University of Technology, Vietnam. E-mail: ngochienbk01@yahoo.com, Orcid: https://orcid.org/0009-0002-5390-8648
1 INTRODUCTION

First, we recognize the importance of developing sustainable agricultural value chain for coffee, tea and lychee crops in the North of Vietnam in recent years, under effects from covid 19.

Next, Environmental protection is a necessary and mandatory activity in the process of agricultural production because agriculture and rural areas play a great role and are the basis of the sustainable development of the environment. The Law on Environmental Protection in 2020 was adopted by the National Assembly of the Socialist Republic of Vietnam, term XIV, at its 10th session on November 17, 2020. Concerning environmental protection in agricultural production is regulated. Specifically in Article 61, Law on Environmental Protection 2020. The Economic Zone Management Board introduces to businesses some of the main contents as follows:

- Organizations and individuals that produce, import, trade and use chemicals, pesticides, veterinary drugs and fertilizers in agricultural production must comply with the provisions of the law on environmental protection. and other relevant provisions of law.

1.1 RESEARCH QUESTIONS

- Question 1: What are principles of sustainable value chain applying in coffee, tea crops in the North of Vietnam?
- Question 2: What are current legal issues in protecting environment in agriculture?
1.2 THEORETICAL FRAMEWORK

We summarize in below table:

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Content, results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humphrey and Schmitz</td>
<td>2002</td>
<td>there are three main groups of methods to improve value growth in global value chains</td>
</tr>
<tr>
<td>Nguyen Trong Diep et al.</td>
<td>2022</td>
<td>DISCUSSING ENFORCEMENT OF THE CONSUMER PROTECTION LAW IN VIETNAM</td>
</tr>
<tr>
<td>Pham Van Hong, Nguyen Thao, Nguyen, Dinh Tran, Ngoc Huy, Nguyen Thu Thuy, Le Thi Thanh Huong</td>
<td>2021</td>
<td>stated that In Vietnam, we will evaluate the effectiveness of VIETGAP and GLOBAL GAP models, principles and standards applying in Vietnam agriculture value chain in a specific case study. The research results show a strict condition for applying VIETGAP and GLOBAL GAP for better quality in agriculture, including: Conditions for soil, irrigation water, fertilizers, pest control, etc.</td>
</tr>
<tr>
<td>Johnson, M.A et al</td>
<td>2020</td>
<td>stated that Coffee berry borer (Hypothenemus hampei (Ferrari), CBB) has invaded nearly every coffee-producing country in the world, and it is commonly recognized as the most damaging insect pest of coffee.</td>
</tr>
</tbody>
</table>

Source: Prepared by Authors (2023)

Beside, On July 12, 2022, in Hanoi, the Ministry of Agriculture and Rural Development held a Workshop on Propagating and disseminating new regulations of the Law on Environmental Protection in 2020 related to the Agriculture and Rural Development sector.

Agriculture is one of the important economic sectors. In 2021, the value of the entire agricultural industry will increase by about 2.9%, export turnover will reach 48.6 billion USD, contributing to stabilizing life, ensuring food security, social security... However, the industry Agricultural production also creates a lot of pressure on the environment because waste in the production process (wastewater, agricultural by-products, garbage ...), suffers the opposite effects from environmental factors.

The workshop aimed to provide information, new provisions of the Law on Environmental Protection in 2020 and guiding documents related to the agriculture and rural development sector, and at the same time assess the opportunities and challenges of the industry in the process of applying the Law on Environmental Protection in 2020. related to the industry for more sustainable development. Along with the Law on Environmental Protection in 2020, new documents on environmental protection in the agriculture and rural development sector include: Decree No. 08/2022/ND-CP dated
February 10, 2022 detailing a number of articles of the Law on Environmental Protection; Decree No. 06/2022/ND-CP dated January 7, 2022 regulating mitigation of greenhouse gas emissions and protection of the ozone layer; Decree No. 45/2022/ND-CP dated 7/7/2022 on sanctioning of administrative violations in the field of environmental protection; Circular No. 02/2022/TT-BTNMT dated January 10, 2022 detailing the implementation of a number of articles of the Law on Environmental Protection. New decrees and circulars provide more detailed regulations on the implementation of the Law on Environmental Protection in the field of Agriculture and Rural Development, such as environmental treatment, rehabilitation and restoration in general regulations on land environment protection; Investigate, evaluate, manage and protect the environment of natural heritage in forestry, fishery and agricultural activities; Appraisal of environmental impact assessment reports; Using livestock waste as organic fertilizer, water for crop irrigation or other purposes; Reuse, direct use, common industrial solid waste treatment...

2 METHODOLOGY

2.1 METHOD AND DATA

This study mainly use combination of quantitative methods and qualitative methods including synthesis, inductive and explanatory methods.

For quantitative analysis, the study is supported with OLS regression.

Data is collected from reliable internet sources and websites of Bureau Statistics, State Bank and Ministry of Finance and Vietnam banks. See below figure 1, we recognize that standard deviation of variable - tea export price has highest value while that of GDP growth is lowest:

3 RESULTS AND DISCUSSION

3.1 COFFEE CROPS PLANTING IN VIETNAM

Son La province, located approximately 300 km westward from Hanoi and borders Laos to the south, is the largest province in northwestern region with a total area of 14,055 km2, and the provincial population of 1,024 million.
To develop Son La coffee products, Son La Provincial People's Committee has cooperated with Phuc Sinh Joint Stock Company to build Phuc Sinh Coffee Factory. Currently, the factory has been started construction to form a system of organizing production, purchasing, processing and creating high quality coffee products to supply for domestic and export markets. The factory has a capacity of 20,000 tons of fresh fruit/crop, and the milling and sorting system has a capacity of 4,000 tons of green coffee/crop.

Besides, Son La Coffee Association was also established and cooperated with businesses to implement programs to bring products to supermarkets, introduce coffee at booths and trade centers across the country. (source: danviet.vn)

Next we see farmers show how to use coffee wastes to eliminate insects (ann,...):
3.2 TEA CROPS PLANNING IN VIETNAM

3.2.1 Thai Nguyen province in the northern region of Vietnam has big tea crops

Because the quality of tea depends quite a lot on the land, weather and care techniques of the farmers. Even within the province, the distance between the two districts is only 25km, but the quality and yield of tea in the two districts are different. While, the average selling price of fresh tea in Thai Nguyen city is 42.5 thousand VND/kg of fresh tea, while the selling price of fresh tea in Dai Tu district is only 29.2 thousand VND/kg. Thanks to the high selling price but low maintenance cost, the profit of tea growers in Thai Nguyen city is much higher than in Dai Tu district. Another important reason leading to the difference in selling prices between the two areas is that Thai Nguyen city has a famous Tan Cuong tea brand in the country.

| Table 2 - Comparison of profits of tea growing households by different groups |
|-----------------|-------|-------|-------|
|                 | Cost  | Revenue | Profit |
| General         | 18.556| 37.190 | 18.634 |
| By location     |       |         |       |
| Thai Nguyen city| 15.863| 42.454 | 26.591 |
| Dai Tu district | 22.515| 29.455 | 6.940  |
| By ethnicity    |       |         |       |
| Kinh            | 17.707| 37.610 | 19.903 |
| Minority        | 25.851| 33.588 | 7.738  |
| Education level of household |       |         |       |
| Secondary school or lower | 18.804 | 36.409 | 17.604 |
| High school or upper       | 17.249 | 41.308 | 24.059 |
| Join the link              |       |         |       |
| Linked                    | 16.083| 41.816 | 25.733 |
| Not linked                | 19.308| 35.784 | 16.476 |

Note: 1,000 VND/kg (fresh tea)

Source: Le Van Hung, Pham Van Hong, Project, 2019
According to population groups, Kinh people have a higher profit from tea cultivation than ethnic minority groups. Ethnic minority groups often live in disadvantaged areas

(Ethnic people often live in mountainous areas of Dai Tu district, far from the center, markets,...) compared to Kinh people in Xinjiang, Thai Nguyen city, so the land is less fertile fat and tea quality are also worse.

Under the same natural conditions, the profits from tea cultivation for ethnic minorities are still low than the Kinh people living there. The reason is that the ethnic minority group has more limited techniques for planting and taking care of tea trees than the Kinh people. Low level of education and capacity is also the reason leading to lower profits from tea cultivation of households headed by a householder with a secondary education or less than that of a household head with a high school education level or higher.

3.3 PROTECTING ENVIRONMENT IN AGRICULTURE - LEGAL ISSUES

The Law on Environmental Protection is approved by the National Assembly in 2020 with 16 chapters and 171 articles with the goal of improving environmental quality, protecting people’s health, ecological balance, protecting biodiversity and developing sustainable economy.

For the agricultural sector, the Law on Environmental Protection 2020 sets forth agricultural production processes such as the collection, treatment and reuse of rice straw after harvest, and introduces a manual for fertilizer production. organic fertilizer from straw, rice straw in the Red River Delta; develop a circular economy by utilizing agricultural by-products.

Along with the Law on Environmental Protection 2020, new documents on environmental protection in agriculture and rural development include: Decree 08/2022/ND-CP dated February 10, 2022 detailing a number of articles of the Law on Environmental Protection; Decree 06/2022/ND-CP dated January 7, 2022 regulating mitigation of greenhouse gas emissions and protection of the ozone layer; Decree 45/2022/ND-CP dated 7/7/2022 on sanctioning of administrative violations in the field of environmental protection; Circular 02/2022/TT-BTNMT dated January 10, 2022 detailing the implementation of a number of articles of the Law on Environmental Protection.
New decrees and circulars provide more detailed regulations on the implementation of the Law on Environmental Protection in the fields of agriculture and rural development such as environmental treatment, rehabilitation and restoration in general regulations on environmental protection. Land; Investigate, evaluate, manage and protect the environment of natural heritage in forestry, fishery and agricultural activities; Appraisal of environmental impact assessment reports; Using livestock waste as organic fertilizer, water for crop irrigation or other purposes; Reuse, direct use, common industrial solid waste treatment…

Next, Article 61 of the Law on Environmental Protection 2020 (effective from January 1, 2022) provides for environmental protection in agricultural production, specifically:

- Organizations and individuals that produce, import, trade and use chemicals, pesticides, veterinary drugs and fertilizers in agricultural production must comply with the provisions of the law on environmental protection. and other relevant provisions of law.
- Chemicals, pesticides and veterinary drugs with high toxicity, sustainability, spread, accumulation in the environment, adverse impacts on the environment and human health must be registered, inventory, and controlled. control, information management, assessment, risk management and handling in accordance with the law.
- Fertilizers, products for the treatment of the livestock environment, pesticides, veterinary drugs, aqua feeds, and products for the treatment of the aquaculture environment that have expired must be managed according to regulations. of relevant legislation. Packaging for fertilizers, animal feeds, aqua feeds, pesticides, veterinary drugs, environmental treatment products in aquaculture, products for treating livestock waste after use, mud and food deposited when cleaning in aquaculture ponds must be managed according to regulations on waste management. Sludge dredged from canals, ditches and irrigation works must be collected, reused, recycled and managed in accordance with law. Animal carcasses that have died due to diseases must be collected and treated in accordance with the law on hazardous waste management and disease prevention.
• Agricultural by-products must be collected to produce commodity products, used as raw materials, fuel, fertilizer production, energy production or must be treated according to regulations; Do not burn the by-products from plants causing environmental pollution.
• The use of wastes from livestock production to make organic fertilizers, water for plants or other purposes must comply with the Government's regulations.
• The State adopts policies to encourage innovation of agricultural production models and methods towards sustainability, adapting to climate change, saving water, and limiting the use of inorganic fertilizers and pesticides. Chemicals and products for environmental treatment in agriculture; develop environmentally friendly agricultural models.
• The Ministry of Agriculture and Rural Development is responsible for directing and organizing the management of sludge dredged from canals, ditches and irrigation works to meet environmental protection requirements.

4 CONCLUSION

The process of having an agricultural product goes through many steps such as planting, planning, harvesting, packing, transporting, storing and distributing. We suggest below strategy:

<table>
<thead>
<tr>
<th>Products (coffee, tea, lychee,…)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Build value chain</td>
<td>- Classify clients and set Price for loyal clients</td>
</tr>
<tr>
<td>- Product positioning and branding</td>
<td>- Discount policy and price based on psychology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>- A mix of online and offline marketing</td>
</tr>
<tr>
<td>- Direct and indirect channels</td>
</tr>
<tr>
<td>- Raviet al (2023) showed digital marketing over traditional marketing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Various of communication channel</td>
</tr>
<tr>
<td>- Social media, television, radio</td>
</tr>
</tbody>
</table>

Source: made by authors

And Wahyuningrat et al (2023) showed rural development in Indonesia, which is considered a strategic key to supporting village development in the country.

Beside, in Exhibit 1: we analyze from below correlation matrix:
• Correlation between tea export price and R is lower than that between tea export price and CPI and Rf (figure 2).

Finally, Environmental protection is a necessary and mandatory activity in the process of agricultural production because agriculture and rural areas play a great role and are the basis of the sustainable development of the environment. Agricultural production is directly associated with the natural environment such as land, climate, weather, etc. In the process of agricultural production, people use a lot of chemicals, chemical fertilizers, pesticides, drugs, plant protection, veterinary drugs, etc. cause severe impacts, contaminating soil and water sources. In addition, in the process of cultivation, agricultural production also causes erosion in the slopes of hilly areas, reclaiming and expanding forest land. Therefore, it can be said that agricultural production maintains and creates the sustainable development of the environment, in other words, to protect the environment, it is necessary to follow strict regulations of the law- implement effective practical solutions in agricultural production, minimizing the risk of causing environmental pollution.

Solutions to protect the environment in agricultural production:

Firstly, for fertilizers, products for environmental treatment of livestock have expired; After using tools, packaging for fertilizers, pesticides, and veterinary drugs, local authorities can implement solutions such as building storage tanks for packaging in convenient and reasonable locations, for farmers. Or businesses making direct investment in agricultural production that have generated tools and packages for fertilizers, plant protection drugs, and veterinary drugs, if they cannot collect them, they can sign contracts, transfer these items to the unit that has a license to treat hazardous waste according to regulations. However, the most important thing is still to raise people's awareness so that there is no longer a habit of using it anywhere and throwing it here.

RESEARCH LIMITATION

We need to expand further analysis for other crops as well.
ACKNOWLEDGEMENTS

I would like to take this opportunity to express my warm thanks to Board of Editors and Colleagues in assisting convenient conditions for my research paper.
REFERENCES


9 (M), 77-93.


Humphreys and Memedovic (2006), Global value chains in the agrifood sector. Working papers 2006, UNIDO.


NT Hang, DTN Huy, DT Tinh, DT Huyen. (2021). Educating Students in History and Geography Subjects through Visiting Historical Sites to Develop Local Economy and Community Tourism Services in Thai Nguyen and Ha Giang, Revista geintec-gestao Inovacao E Tecnologias 11 (3), 1-12


Nguyen Trong Diep, Nguyen Anh Thu, Dinh Tran Ngoc Huy, Ly Thi Hue. (2022). Consumer protection Law 2010 and Discussion on protecting consumers who are


ND Trung, DTN Huy, TH Le, DT Huong, NT Hoa. (2021). ICT, AI, IOTs and technology applications in education-A case with accelerometer and internet learner gender prediction , Advances in Mechanics 9 (3), 1288-1296


TTH Ha, NB Khoa, DTN Huy, VK Nhan, DH Nhung, PT Anh, PK Duy. (2019). Modern corporate governance standards and role of auditing-cases in some Western european countries after financial crisis, corporate scandals and manipulation, International Journal of Entrepreneurship 23 (1S)


TTB Hang, DTH Nhung, DTN Huy, NM Hung, MD Pham. (2020). Where Beta is going—case of Viet Nam hotel, airlines and tourism company groups after the low inflation period, Entrepreneurship and Sustainability Issues 7 (3),


TTD Vu, DTN Huy, NTH Trang, NN Thach. (2021). Human Education And Educational Issues For Society And Economy-Case In Emerging Markets Including Vietnam, Elementary Education Online, 20 (2)


VQ Nam, DTN Huy, NT Hang, TH Le, NTP Thanh. (2021). Internet of Things (IoTs) Effects and Building Effective Management Information System (MIS) in Vietnam Enterprises and Human-Computer Interaction Issues in Industry 4.0, Webology, 18


ANNEX

EXHIBIT

Exhibit 1 – Econometric model for tea export price: correlation matrix

| Source | Ministry of Industry and Trade, Ministry of Agriculture and Rural Development |