

SUSTAINABLE AGRICULTURAL DEVELOPMENT IN AN GIANG PROVINCE: SITUATION AND SOLUTIONS

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Abstract

An Giang province identifies agriculture as a key economic sector and aims to become an agricultural center of the Mekong Delta. In order to promote the economic strengths, An Giang has been implementing the development of the agricultural economy in the direction of a sustainable growth. In this article, the author mentioned about the Sustainable Agricultural Development in An Giang province the situation and the solution to indicate the remaining situation and difficulties in agricultural development, at the same time, bringing devise practical solutions to develop the province's agriculture sector increasingly.

Keywords: *agriculture, An Giang, development, sustainability, sustainable agriculture*

1. Introduction

Taking advantage of the strengths of agriculture, An Giang province has focused on improving agricultural development towards sustainability. An Giang agriculture plays a key role in the process of its economic development. Therefore, the province focused on manufacturing and restructuring agriculture towards modernization and high-tech and identified that this is an important task. At the same time, An Giang agriculture improves the value of cultivation, growths agricultural products associated with the innovation of growth model in depth. Since then, it improves the value of agricultural goods production, increasing the competitiveness of agricultural products, contributing to poverty reduction, increasing farmers' income, ensuring social security by creating jobs and stable incomes for people, promoting socio-economic development. It is the orientations of An Giang province to develop a sustainable agricultural economy that has brought to greater achievements in recent years. However, there are still backlogs that need to be overcome. Therefore, in this article, the author focuses on researching situation of sustainable agricultural development in An Giang province, and clearly states the achievements and backlogs of the agricultural economy in An Giang province, thereby to specify appropriate recommendations to promote the agricultural economy of An Giang province towards sustainability.

2. Methods

A number of research methods have been applied in this study to clarify the issues of sustainable agricultural development in An Giang province.

Firstly, the methods of analysis and synthesis are applied to analyze documents related to research issues.

Secondly, the historical method is applied to describe the research problem according to the process, namely over the years to clearly see the agricultural economic development of An Giang province.

Finally, the logical methods helps to identify appropriate research issues.

3. Results

3.1. Theoretical basis

3.1.1. Sustainable Development

Sustainable development is an important goal in many areas, countries and regions. To achieve sustainable development, each country will rely on specific political, economic, cultural, social, geographic, ... characteristics to plan the most appropriate strategy for that country.

The term “sustainable development” was first used in the "World Conservation Strategy" proposed by IUCN (International Union for Conservation of Nature and Natural Resources - IUCN) in 1980. The overall objective of the Strategy is "achieving sustainable development by protecting biological resources" and emphasizing the effective use of natural resources, ensuring the living environment for human beings during the development process.

In 1987, the World Commission on Environment and Development (WCED) in the Our Common Future report introduced the concept of sustainable development as "Development that meets the needs of the present day without compromising the ability to meet the needs of future generations" (WCED, 1987, 43).

By 1992, the concept of sustainable development was reaffirmed at the Earth Summit Conference on Environment and Development taking place in Rio de Janeiro (Brazil), which confirmed: "sustainable development" in three important areas of the economy, society, environment, with practices and guidelines to achieve sustainable development goals in agenda 21 (UNCED, 1992).

In 2002, at the World Summit Conference on Sustainable Development taken place in Johannesburg (Republic of South Africa), the concept of sustainable development was further improved: "Sustainable development" is a process of development with close, reasonable and harmonious combination between three aspects of development, including economic development, social development, and environmental protection. Attention is paid to issues of economic growth, progress, and social justice; poverty reduction and job creation; handling, remedying pollution, restoring and improving environmental quality;

forest fire prevention and deforestation; rational exploitation and economical use of natural resources.

Thus, sustainable development in the most general sense is the combination of economic, social, and ecological fields into a unified whole. Economic efficiency must go hand in hand with social justice and environmental protection. To achieve sustainable development, first of all, the economic development issues must be addressed in a harmonious manner in three aspects: economic, social, and environmental. Economic sustainability means fast and safe economic development. Therefore, the healthy growth and development of the economy must meet the requirements of life and improve people's lives.

3.1.2. Sustainable agricultural development

Sustainable agriculture is a subject of great interest and lively debate in many segments of the world. Sustainable agriculture is defined as a system that, “over the long term, enhances environmental quality and the resource base on which agriculture depends; provides for basic human food and fibre needs; is economically viable; and enhances the quality of life for farmers and society as a whole”[T. Crews, 1991].

Sustainable agricultural development is an issue needed to be concerned, this is an objective requirement and needs to be well addressed such as the relationship between the natural environment system, social environment and human environment.

Sustainable agriculture firstly is crop and livestock on the same land that must be stable and tend to be increasingly improved, economic efficiency must be strengthened, nurture more people and the income level is also increasingly improved without destroying the environment of nature and the community.

Sustainable agricultural development is development that ensures the nature of the eco-agricultural economy with its own goals, structure and functions. Sustainable agriculture development is a development model that has a link between agricultural growth and general economic growth, with the natural environment, the poverty and the people in rural areas. Sustainable agricultural development is the development that meets the general growth needs of the economy but does not degrade the natural environment - people and ensure sustainable livelihoods above the poverty line for the people.

Thus, sustainable agricultural development is also based on three aspects: economic, social and environmental. Economic development must focus on environment and social security. Based on mentioned, we recognize that the sustainable development of agricultural economy in An Giang province also needs to pay attention to the following aspects: economy, society, environment in locality, region, nation and international. The three factors: economy, society and environment always interact and complement each other in the process of sustainable agricultural development.

3.2. Policies on sustainable agricultural development of An Giang province

In order to develop sustainable agriculture, the role of policy makers and development orientations of the agricultural sector is extremely important. Whether An Giang's agriculture really develops sustainably and effectively depends on the orientations and policies suitable to the actual situation of the province. In recent years, An Giang agriculture has achieved high results and developed in a sustainable manner. From 2012, the An Giang Provincial Party Committee issued Resolution No. 09-NQ / TU dated June 27, 2012 on agricultural development with high-tech application, stage 2012 – 2020 and vision to 2030. On that basis, An Giang Provincial Party Committee focused on leading to mobilize many resources for agricultural development in depth, constantly increasing productivity, quality, efficiency, competitiveness of agricultural products, improving material and spiritual life of farmers ... Next, the Provincial People's Committee issued policies to actively support the development of high-tech agriculture in An Giang province in the period of 2012-2020 and a vision to 2030 (Nguyen Hanh, 2019).

In 2016, under new pressures in the context of climate change, food security and international integration, the goal was to develop agriculture and rural areas comprehensively and sustainably. Recognizing this, the Resolution of the 12th National Congress of the Communist Party of Vietnam from January 20, 2016 to January 28, 2016, in Hanoi Capital, stated: " Accelerate restructuring of agriculture, build comprehensive ecological agriculture including agriculture, forestry and fishery towards modernization and sustainability, on the basis of promoting comparative advantages and reorganizing agricultural production, to promote and widely apply science - technology, especially biotechnology, information technology to agricultural production and management, and accelerate agricultural and rural industrialization and modernization to increase productivity, quality, efficiency and competitiveness, firmly ensuring national food security both in the short and long term; improve farmers' income and life" (Hoang Anh Tuan, 2019).

Implementing the Resolution of the Party and the Resolution of An Giang Provincial Party Congress for the term 2015-2020 also identified: "Agriculture is a key economic sector, making An Giang become an agricultural center of the Cuu Long Delta; strive to increase the average value of agricultural production to 192 million VND / ha by 2020, effectively using capital, resources, labor, technology..."(Nguyen Hanh, 2019). In 2016, An Giang province implemented the Sustainable Agriculture Transformation Project (VnSAT) with many positive activities, contributing to promoting agricultural restructuring.

An Giang Provincial People's Committee has just issued Decision No. 44/2018 / QD-UBND, providing for the management, exploitation and protection of irrigation works in the province.

Accordingly, the Department of Natural Resources and Environment shall assume

the prime responsibility and coordinate with the Department of Agriculture and Rural Development in advising the provincial People's Committee in guiding the formulation of exploitation plans; licensing exploitation and use of water resources and discharging sewage into water sources as prescribed; carry out evaluation and submit to the provincial People's Committee for approval the plan of calculating charge for granting water right for exploitation and use of water to the concerned individuals and organizations.

The remarkable point in Decision 44 is that An Giang strictly prohibits acts such as drilling, digging soil, illegal construction within the protection area of irrigation works; Illegally occupying and using land within the area of protection of irrigation works; activities that hinder the management and repair of works.

Particularly strictly prohibited acts of causing pollution of water sources of irrigation works, such as discharging toxic substances, garbage, dead animals, bottles and pesticides; waste water from industrial production establishments or industrial parks, wastewater from production and aquaculture zones, daily-life waste water from residential and business areas (the above-said types of wastewater have not yet been treated or treated but not up to the permissible standards) into irrigation works. Acts of encroaching on the river surface, obstructing flood drainage, changing the flow, leading to local erosion phenomena in front of and after the project (Nguyen Hanh, 2018).

3.3. Situation of sustainable agricultural economic development in An Giang province

3.3.1. Achievements in sustainable agricultural economic development in An Giang province

Agriculture in An Giang province has achieved important results in the past years, paving the way for the process of agricultural development towards sustainability in the subsequent years.

An Giang province is aiming at the goal of developing a sustainable agricultural economy, strictly implementing the planning of rice and crop production areas, etc. In rice production, the trend of forming a production link between businesses and farmers, from the supply of high quality rice seeds to the stage of harvesting, product consumption, milling processing and export ... are implemented and most people choose. In the processing stage, the factory focuses on handling all waste products during the operation of the factory such as taking advantage of rice husks to milling rice husk firewood to serve as fuel, creating electrical energy to serve the re-operating the factory. The production process from rice to grain for export is practiced synchronously, safely, and this trend is developing.

The province has also focused on safe rice production, improving the quality and efficiency of rice cultivation. The An Giang agriculture sector promotes crop restructuring

such as reducing rice acreage to shifting to fruit and other aquaculture, bringing higher economic benefits to farmers. Form cooperatives to grow fruit trees, combine with the construction of planting areas meeting VietGap standards, strongly apply technical advances to production; including drip irrigation to save water.

Implementing Resolution No. 09-NQ / TU of the Provincial Party Committee, the science and technology sector coordinates with departments, branches and local authorities to develop and plan high-tech agricultural production, specialized production areas comes into practice. Many models and scientific and technological projects are aimed at applying mechanization in agricultural cultivation, such as laser leveling machines, straw rollers; mechanization of agricultural harvest,...

The implementation of the National Target Program on building a new countryside in the period of 2016-2020 has contributed significantly to the development of the province's agricultural economy. To focus on building An Giang agriculture in association with building a new countryside towards modernization, sustainable development and proactively coping with climate change. Focus on developing smart agriculture, organic agriculture, clean agriculture and high value-added, branded and competitive agricultural products (Huu Huynh, 2020). At the same time, the province has applied the model of linking four houses (the State, farmers, scientists, entrepreneurs), developing agricultural cooperatives and implementing projects on reorganizing production and linking associated with processing and consumption markets.

The province has implemented the Restructuring project of agriculture sector; to prioritize the development of key products to recognize four new hi-tech agricultural regions: Phu Tan sticky rice area, Loc Troi rice-growing region, Kien An vegetable-growing area, Cho Moi fruit tree area. In order to improve productivity and profitability for people, An Giang province expanded to apply Global GAP, Viet GAP; focus on changing the structure of cultivated rice varieties in the direction of increasing the branded high-quality rice varieties which are bought by businesses with pre-set purchase prices. Instructing enterprises of Vietnam-Australia Group and some other typical enterprises in the province to apply for recognition of high-tech agricultural enterprises. Cooperating with businesses such as Angimex-Kitoku, Trung Thanh, Vuong Dinh, Tan Vuong, Tan Long, Loc Troi, Sunrice... on developing linkages of production and consumption of agricultural products. The companies engage with farmers through cooperatives, new type cooperatives associated with the company's material areas in the districts of Tri Ton, Thoai Son, Tinh Bien and Chau Phu. These companies will contribute capital and send personnel to participate in executive management. The province has provided farmers with good rice varieties, applying safe and high-quality production processes to meet the requirements of exporting rice products to foreign markets.

Enhancing the deployment and expansion of the Large Field to build the value chain of the rice industry, prioritizing reducing losses during and after harvest, while promoting mechanization investment in the field. Deploying financial, technical and market support package for rice products to develop the province's hulled rice-rice products. Increasing support for businesses in accordance with policies to encourage businesses to invest in agriculture.

Rice production

In 2017, the total area of rice cultivation in An Giang province reached nearly 649,200 ha. The total rice output of the whole year was approximately 4 million tons, the value of production increased, the estimated value of agricultural production reached 160 million VND / ha. (Vuong Thoai Trung, 2017).

In 2018, the cultivated area was 677.8 thousand hectares, accounting for 97.6%. In particular, 624,000 hectares of rice, crops reached nearly 54,000 hectares, 450.95 hectares of newly planted forestry trees. (Nguyen Hanh, 2018). In 2018, the association of large field production was maintained and improved, currently 31 food enterprises and 10 seed enterprises have signed contracts to link rice production and consumption.

In 2019, the rice production area of An Giang province will be about 639,000 hectares, the annual rice output will reach 3.92 million tons. Agriculture in An Giang province spends over 70% of the area using high-quality rice seeds for export, reducing the use of excess nitrogen fertilizer, reducing the use of pesticides, aiming to expand the production of rice varieties, clean rice and organic rice, developing a brand of safe rice, focusing on investment in soil and irrigation improvement.

Fisheries

In 2018, the province's fishery industry has many advantages, and the seafood export market is also expanded. Ensuring the area for raising and harvesting aquatic products according to the scheduled time, taking advantage of rising flood water to exploit natural aquatic resources.

In 2018, the harvested aquatic products will be about 1,726 hectares, the whole year harvested aquaculture output will be around 444,000 tons, with the total tra fish farming area being 900 hectares. An Giang is the leading province in implementing the Project of linking 3-pangasius seed production to facilitate the production of about 2.7 billion fish to the market (Nguyen Hanh, 2018).

Breeding industry

The province's animal husbandry has made a positive move, many businesses have been investing heavily in animal husbandry in An Giang province, with breeding techniques to ensure sustainable development, protect the breeding environment well, safe livestock

products, and traceability, reducing small scale animal husbandry.

The agriculture and rural development sector of An Giang province is also implementing a plan to improve the quality of live cows to meet market requirements and increase profits for farmers, the province has supported the development of beef cattle and breeding cows high quality reproduction for farmers.

Paying attention to developing high-tech cow raising model will have a 3-fold profit increase compared to traditional cow raising, changing cow raising practices under small grazing to farms, ensuring the environment for grazing farming and living environment of farmers.

Cultivation

In 2017, the province's agricultural sector continued to shift its tree structure towards quality and high economic value. The total area of crops is over 60,000 hectares. The total area of fruit trees in An Giang province is over 15,800 hectares, up 19.2% (equivalent to an increase of 2,552 hectares over the same period). Promote production linkages under the model of large fields, the chain of production and consumption of vegetables, banana transplanted tissues, abalone mushrooms,... focusing on items of production organization, training, model building, developing consumer markets (Vu Dam, 2017).

Focusing on infrastructure construction and building links for raw material production areas such as Cat Chu mango, tricolor mango, green grapefruit production areas ... Agricultural construction work New villages have been implemented regularly and continuously, speeding up the recognition of pilot communes to complete the plan of 43 communes in 2018.

In 2019, the province's output of fruit trees reached 241,000 tons equal to 113.87%, Tra products exceeded 400,000 tons for the first time. (Le Hoang Vu, 2019). In 2020, An Giang develops agriculture towards a modern sustainable and rational growth, products associated with innovation of the growth model in depth. Besides improving the competitiveness of agricultural products, raising farming values and farmers' income.

Environment

Focusing on environmental protection in agricultural production towards sustainable development, An Giang aims at the GAP model with three increases and three reductions (increasing rice productivity, increasing rice quality, increasing efficiency economic, reducing the number of seed sowing, reducing the amount of pesticides, reducing the amount of nitrogen fertilizer) and saving water, using agricultural wastes as microbiological fertilizer have brought high efficiency. Combine flower planting on the banks of the fields to balance the ecosystem and protect the environment. Closely combining economic development, environment, social security, towards sustainable agricultural economic development.

Aiming at clean agriculture to protect the living environment and create products that are safe for public health, this is a production model in line with the current national and international development trends.

3.3.2. The backlogs in sustainable agricultural development in An Giang province

Besides the above advantages, there are still some difficulties and disadvantages. In terms of provincial management of agriculture and rural areas, there are still some shortcomings: issuing provincial policies on sustainable agricultural development, but most people have not grasped the mainstream of the issue, they do not fully understand their roles and responsibilities in the province's sustainable agricultural development. Besides, the basic solutions to effectively prevent and respond to climate change such as drought, salinity ... with the environment are not really thorough. This is a core issue for all levels of government to focus on and deploy to the people better to bring the Party's policy of the local government to each people to implement.

The land policy is also unstable, in which the regulations on the duration of land use rights is not for long term, making investment in agriculture limited, especially investment in sustainable development for the future. Many areas of agricultural production have developed well, but the short time of land use rights has prevented farmers and businesses from making long-term investment, leading to the problem that agricultural production will be less sustainable.

The competitiveness of agricultural products is still weak, mainly developing in width, increasing the area and output, but the product quality is low, production costs are high. This leads to farmers not being active in agricultural production, because of the high costs that will lead to farmers' losses, so they will not be associated with fields but can do non-agricultural jobs or leaving homeland.

Output of products and prices are always a concern and make farmers lack of salinity for agricultural production. Some agricultural cooperatives have not accessed loans, lack of human resources, lack of consumption links with businesses to ensure the output of products. The capacity of many businesses is limited when participating in production links under the model of large fields, production, modern agricultural development ... (Le Hoang Vu, 2019).

The level of social investment in agriculture is low, although a number of large enterprises have begun to invest in agriculture but in general there is still very few. The construction of high-tech agriculture is slow to change and has not created a breakthrough to increase added value.

Agricultural growth is mainly based on natural resource use. Intensive agriculture follows productivity and quantity, using a lot of inorganic fertilizers and agrochemicals (pesticides, herbicides, stimulants, and waste). This has an adverse impact on the

environment, increasing pollution levels and weakening natural resources. Environment, water sources are polluted with industrial wastewater, emissions in industrial parks and trade villages are directly degrading the environment from crops to shrimps, fish, air,... causing danger to people.

The training of human resources for science and technology to serve agriculture is not yet high, and there is a shortage of experts and researchers in agricultural development. Agricultural production is still in a small state of production, the land is fragmented and not thorough in the implementation of large fields. As a result, it is difficult to apply science and technology to agriculture, once the field is too small, and it is not possible to change crops towards modern development.

The causes of these shortcomings and limitations for sustainable agricultural development include many factors, but the key issue is that people are not fully aware of their special position and role in the province's sustainable agricultural economic development. Because of their unclear role and responsibility in sustainable development, the people involved have not been active, have a dependency, rely on the government's investment. At the same time, not fully grasping and implementing the motto that farmers are the subjects in agricultural economic development. There are still many limitations in propaganda and mobilizing people to participate in sustainable agricultural economic development in the province.

4. Discussion and Conclusion

Solutions for sustainable agricultural economic development in An Giang province

In order for An Giang province's agriculture to develop sustainably, it is necessary to have synchronous solutions and mechanisms from all levels of leadership, in which some following objectives should be attached:

Firstly, the province needs to make policies, timely and consistent with sustainable agricultural development. Implement synchronously regulations on agriculture, environment, social issues; attaching importance to agricultural extension, promoting investment attraction of enterprises into agriculture.

Secondly, further promote the implementation of agricultural restructuring towards sustainable development associated with building new cooperatives and new rural areas. Strengthening associates, developing cooperative groups and cooperatives, with the participation of businesses, providing input and consuming output products in production. This will be a driving force for An Giang province to increase added value and develop sustainable agriculture in the future. At the same time, renovating production organization in the direction of close association from production to product consumption between

farmers and businesses. Guide and support farmers in implementing agricultural development and create an enabling environment to encourage businesses to invest in agriculture and rural areas, and join in cooperation for development.

Thirdly, in agricultural economy, it is necessary to create conditions for land users to decide the appropriate mode of land use. Continue to restructure crops, switch from rice land to grow crops of high economic value. Proactively in directing production in order to have timely plans and solutions with developments affecting agricultural production.

Fourthly, strengthening the mobilization of farmers to apply scientific and technological advances to production in order to save costs and improve economic efficiency. It is necessary to focus on scientific and technological research and application in agricultural production and processing, focusing on developing products with competitive advantages and consumption markets; diversify markets, invest in developing human resources in agriculture. Science and technology are considered as solutions that directly affect the productivity and quality of agricultural products; ensuring the improvement of productivity, quality and competitiveness of agricultural products and goods, and services on the market.

Fifthly, apply science and technology in agricultural development, in order to bring about efficiency, productivity, and quality of agricultural products, to compete with domestic and foreign markets.

Sixthly, promoting activities to raise awareness about environmental protection; apply measures to reduce environmental pollution in production; implement green, clean and energy-saving production programs. Encourage people to plant flowers on the banks of the fields in order to build large, sustainable commodity-producing areas, replicate models of vegetable growing in net houses, grow organic vegetables... Waste treatment from agricultural production and waste toxic (pesticide packaging) and domestic waste of people. (Le Hoang Vu, 2019).

It is necessary to focus on managing and coping with risks related to the environment; mitigating the impact of climate change on agricultural economy; implementing cultivation methods and selecting varieties suitable to the soil conditions to be able to solve the emerging environmental challenges; the province should have a timely response plan and appropriate agricultural production. Paying attention to the prevention of natural disasters, reducing adverse environmental impacts, strengthening the management of agricultural wastewater,... for the province's agricultural economy to develop sustainably (Ta Dinh Doan, 2017).

Seventhly, sustainable agricultural development requires solving social issues and farmers' lives, so sustainable agricultural development needs to pay attention to rural development. Building a contingent of professional, organized and qualified farmers will determine the formation and development of sustainable agriculture, since farmers and

businesses are the subjects of this economy.

Concentrate on investing in developing agricultural economy, building rural areas, solving problems so that farmers become necessary and urgent with the goal of bringing rural agriculture modernization. Promote the role of farmers, protect the rights of farmers. Create favorable conditions for farmers to flexibly use agricultural land, create jobs and income for rural people, while increasing revenues for the provincial budget. Improving the position, role and life of the people, in association with building a modern agriculture, need to create conditions for farmers to change their jobs through programs and forms of vocational training for farmers in countryside.

5. Conclusion

Up to this time, An Giang has been developing a relatively complete agriculture, focusing on developing agricultural economy towards sustainability. Agriculture is considered as one of the key economic sectors and plays an important role in the economic development of the province.

In order for An Giang province's agriculture to develop in a sustainable manner, it is indispensable to strengthen the leadership of the Party and the Party committees at all levels in order to make timely and suitable policies to the provincial situation so that people can feel secure in production, businesses are assured of investment and cooperation in the field of agriculture. Therefore, the role of policies and orientations for agricultural development of leaders is very important and urgent. Agriculture sustainable development is really effective through the right orientation, consistent with the reality of the province.

In recent years, the agricultural sector of An Giang province has achieved important achievements, but some problems still need to be overcome. In particular, it is necessary to pay more attention to the orientation of developing a modern, sustainable agriculture and building a new countryside and new cooperatives with the common goal of developing a smart agriculture. Restructuring the agricultural sector in association with renewing the growth model, in order to create a breakthrough in agricultural development, agricultural products must be associated with renewing the growth model in depth, improve gray matter content and high competitiveness in domestic and foreign markets. Pay attention to the income of the people, in order to improve the quality, improve the life of farmers, contribute to poverty reduction and social stability.

Promote the application of science and technology in agricultural economics for sustainable and modern development. On the basis of concentrated production areas for key crops, to gradually shift to a model of safe agriculture and organic agriculture to create high-quality agricultural products. Replace the use of chemicals with biological and natural products. Since then, the requirements for good resolution have been raised: rational exploitation and use of resources, the application of sustainable ecological farming methods,

prevention of environmental pollution and conservation of natural resources. It is necessary to have a close link between economic, social and environmental development towards sustainable agricultural development in An Giang province.

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