

Problems and Challenges of Cassava Plantation in KENETHAO District, Xayabouly Province

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Abstract

The objective was to study the problems and challenges of cassava growers in Kenethao district, Xayabouly province. This study was qualitative research. It is done by studying and analyzing data from documentary research through in-depth interviews as tool. Purposive sampling was used and data were collected with in-depth interviews. The target groups were village headman, growers, purchasers and from office of agriculture staffs. The results shown that the main problems and challenges firstly, cost generation is the main concerns of growers, due to low negotiation power of growers and the middle man on pricing of cassava, their experienced in cultivating cassava based on basic knowledge. While, the land is an importance factor that the growers must take in considerations to solve the problems of nutrient deficiency, soaking and increase the nutrients in cassava types. Following concerns are the insects and disease of cassava is one factor that decreases cassava production and quality. In summary, the tendency of cassava cultivation in the future will decline; the growers might change to plant others commercial crops instead depend on market.

Key words: Cassava, Problems, Challenges, Obstacles, Kenethao District

1. Introduction

Cassava (*Manihot esculenta* Crantz) is a new important cash crop in Lao PDR. In 2011, the area planted with cassava in the country was 33,725 hectares with a yield of 740,010 tons, expanded to 45,600 hectares in 2015 (Ministry of Industry and Trade, 2022). Along with the policy to promote the transformation of modern industrialization in rural agriculture to industrialization, one of the priorities is cassava. Although cassava is an industrial crop with potential for processing, it is considered as a new economic crop. Lao PDR and is still experiencing many challenges such as first, farmers still lack technical knowledge about sustainable cassava cultivation systems, mostly

grown naturally, in some areas the yield is low and the quality is poor. Second, there are no measures to protect the price of cassava buying and selling. Third, there are restrictions on labor and modern equipment. Forth, there is no land use allocation, proper compliance this is because some areas do not have other types of crops for consumption. Fifth, sustainable development related to nature conservation is still a challenge (Department of Industrial and Handicrafts, 2022)

In 2005, from CIAT's survey, it was seen that in Lao PDR there are 48 types of cassava varieties. In addition, the Cassava mosaic virus is a disease that affects the cassava industry in many countries because a severe outbreak may

damage the entire crop. Kaenthao is one of 4 districts that has the weather suitable for growing cassava since the year 2012, until the period 2020-2023 when cassava cultivation in the area tends to decrease. In the year 2021 - 2022, the area planted with cassava tends to grow and decrease. While the production of cassavas, especially raw, dry cassavas, and cassava flour, is increasingly in demand in markets, the farmers who grow cassavas in the town of Kenethao district are transitioning to grow grass, raise cattle and plant other types of crops such as corn, jobs tears, beans, etc., which have a faster cropping cycle (interviewed on December, 2024). Thus, the authors were interested in conducting to understand the problems and challenges of cassava farmers at Kenethao district, Xayabouly province.

There are several studies on cassava in Lao PDR and abroad whether it is in terms of policy and marketing, planting including the problems and challenges of cassava cultivation. Research framework based on conceptual and theoretical research and relevant works of literature in the study of problems and challenges of cassava plantation of Kenethao district. The authors adopted the concept of work of (Khantavong et al., 2013, 2016, 2019; Newby, 2019; Vongphachan, 2019); Sounaly et al., 2014; Saengsi, 2018; Veerasestakul, 2548; Charoenrungreueang, 2017; Ministry of Industry and Trade, 2022)

Bunjanathobphit (2001) gave the meaning and concept of cost as follows: Cost refers to expenses incurred to obtain goods or services, which may be paid in cash, assets, or other capital. This has included losses that can be measured in monetary terms that were directly related to the acquisition of goods or services. The concept of cost is as follows costs must be measured in units of currency; Costs may occur from purchases, and exchanges, including damages received and required by law and; Costs may be assets or expenses depending on

whether they still exist. Is it beneficial to the business? Costs that are still useful to the business in the future are considered assets capital that has no longer been useful is considered an expense.

In the meaning of Philip Kotler means anywhere, even if it is a place or no place where demand and supply in products or services have met until causing the price to come from a Market mechanism such as the economy in this market system accepts changes in prices such as price declined automatically when goods are offered for sale, etc. In theory, it is seen that the economy is a true market system. It is necessary to include various conditions as follows this is a small product producer, a consumer. Many include Measures to prevent entry into a small market All of these conditions, if any, will apply that it is a complete market which can be found in many places in today's world (Kotler, 2003, p. 11) The word market, therefore, has meaning covers many groups of customers including markets that have physical characteristics and markets that do not have physical identity (Digital market) as well as a large market with many sub-markets which are involved in the business, the scope of marketing. Marketing is work related to the creation, promotion, and delivery of products or services to consumers and various business organizations, marketers must stimulate demand and Buy various products from the company are responsible for.

Webster (1994) defined natural disasters as various hazards that occur naturally and have an impact on human life and well-being. There are natural disasters occur when sudden violence or catastrophe brings destruction of both life and property causing a change from the original condition difficult to predict, called "natural disasters"

The United Nations (UNDRO, 1987) has defined a disaster as violent events that occur naturally or are caused by human actions. Is it immediate? Gradually occurs, affecting life and

property. As a result, people in local society affected by the disaster can help themselves disasters can be classified as follows Classic: Classic disasters are classified according to the cause of occurrence there are two types such Natural disasters such as storms, earthquakes, landslides, floods, droughts, forest fires, etc., and disasters caused by human actions such as occupational disasters, traffic hazards dangers from transportation, etc.

Another, Modern style of disaster is classified according to cause and there are 3 types of intentions natural disasters Occur naturally such as floods, landslides, storms, droughts, etc. Technological disasters caused by human actions such as fires occupational hazards traffic hazards, etc; and complex disasters Caused by human action with the hope of political or social results (emphasis on national belief Religion, and ideology) such as riots, dangers civil war political asylum, etc. From the definition of natural disasters above (Bunjanathobphit, 2001) concluded that natural disasters are dangers that occur from nature, and cannot be predicted in advance. When it happens, it affects life and property causing them to be unable to help themselves, namely droughts, storms, floods, electricity, and earthquakes. The results of disasters nature is unable to predict in advance, affecting the productivity of farmers because they cannot be prepared to deal with it.

Problems facing for villagers who grew cassava

Problems	results
Land Aspect	Consolidation of the soil causes a source of yeast, and because it has been planted for a long time, the soil lacks fertility and yields are low.
Labor Aspect	Harvesting produce uses human labor, and lack of skilled workers, technical-technical knowledge.
Cost aspect	Cassava stem bud price is expensive; cassava prices fluctuate frequently; Increase in fuel prices; the price of production factors is higher due to imports from abroad such as seeds, fertilizers, herbicides, insecticides, etc.;

Research Objective is to understand problems and challenges of cassava growers in kenethao district, Xayabouly province.

2. Materials and Methods

It is done by studying and analyzing data from observation and in-depth interviews from November to December 2023. The data was collected from the village headman, growers, merchants, and agriculture staff total of ten samples by using in-depth interview during 27th October – to 3rd December 2023. The question included overall of the cassava plantation, demographic information, problems, obstacles, and challenges of cassava plantation in Kenethao district. The method used in the analysis data includes reading, understanding, and grasping the main points, coding the data, distinguishing and grouping the data, connecting the data to find patterns and meanings, and finding the main conclusions.

Using typological analysis by classifying data types is classifying data into types (typologies) the word "typologies" refer to the continuous sequence of events in which the author collects data, needs to organize the data based on the criteria established by the author, which classification or grouping this information can be divided into two types (Chanthavanich, 1998 & Boasant, 1999)

3. Results

The results showed that the villagers who grew cassava are facing problems and challenges as followed:

Planted varieties/Priming	Planting cassava compared to other crops is the times used and labor intensive.
Technical aspects	FR, rayong 11, rayong 72, Q3 which were imported from Thailand.
Market Aspect	Lack of continuous seed improvement due to relying on the original species bought from Thailand and grafted to be planted repeatedly.
Policies, laws and regulations	The cassava price is depended on middlemen; Income depends on productivity and fluctuations in output prices.
Environmental problems	There were low intensive academic training in what the growers is interested in; Continuity of monitoring, inspection and evaluation from the public sector.
Epidemics	Natural calamities resulted in rotting cassava, which cannot be sold at a price; there is a problem of drought causing the cassava plant to dry up and die; some years are flooded, some are dry years, resulting in low productivity and unstable income, and use of herbicides and insecticides.
	There are powdery mildew on the trunk, dry mildew, fire mildew, fallen leaves and many dead trees.

Challenges of cassava grower

Challenges

- There are more crops replacing cassava including animal husbandry, grass, and other crops.
- Natural cultivation without soil improvement will result in reduced yield.
- Cassava is mostly sold without binding contracts.
- Saving capital makes the growers rely on natural cultivation which will result in the instability of cassava cultivation in the midst of the popularity of cassava in the global market.
- The area where cassava is grown moved to other districts.

4. Discussion the Results

Product sustainability challenges

The finding demonstrates that land, the area of cassava cultivation has decreased. In the case of Kenethao district, the most important issue is the quality of the soil. The area planted

with it tends to decreased by more than 75,000 ha from 2015-2017 (Tanthaphone, 2019). The case of Kenethao district, growers did not use fertilize or improve the soil; they planted in the old area for many years in a row, causing the yield to decreased. In accordance with (Khanthavong, 2019; Cock 1985, Howeler, 2002, Leiher, 2002) that most of the growers grew in the soil with low fertility without improving the soil; do not apply organic fertilizers or chemical fertilizers, which affects the yield and the variety are of low quality. Climate changes were the main cause of dry soil, drought and diseases. Furthermore, farmers did not make trade agreements with the middleman causes substandard output when the product reaches the factory.

Irregular pricing challenges

Newby (2019) stated that the trends and effects of cassava cultivation in terms of markets, prices of cassava compared to other crops, changes in labor cost of planting and ease of use of machinery, long-term trends in climate

change, floods and droughts, changes in soil suitability and composting, and the effects of insects and diseases in cassava. As well as, Khanthavong (2019) mentioned that the selling price of sweet cassava is determined from the world market, which from the interview with the grower found: how good the yield depends on the price of the buyer. Insixiengmai (2019) found a challenge in centralizing the provision of technical, disease, and marketing knowledge to farmers, there must be cooperation and support from all parties whether it is the department of agriculture and forestry, industry and trade, banks, factories/entrepreneurs through the promotion of farmers' groups for public sectors. In addition, the producers' challenges were limited access to capital, high interest rates, disease incidence, soil quality and unstable prices. As well as, the buyers faced with the quality of the product is not up to standard, lack of storage techniques, insufficient funding, non-uniform standards of weighing, the determination of carrying weight was not met the international standards. Furthermore, the flour factory faced for buying and selling, no contract, not being able to predict the amount of purchase, no clear rules in the management of the establishment of the factory, the process of running documents is difficult, delayed and the management of the waste system of the factory is not standardized.

Disease and insect outbreaks

According to Khanthavong et. al (2019) sated that there are no resistant varieties, applying fertilizer to increase productivity. There is an epidemic and spread of cassava enemies (Tanthaphone, 2019). Thailand and the Republic of Vietnam, the most important diseases of cassava cultivation found are witch's broom, leaf spot disease caused by fungi (*Colletotrichum* sp.) and leaf blight caused by bacteria (Vongphachan, 2019). Also, the insects found the current powdery mildew. Newby (2019) mentioned that when comparing the

economy and profit from applying fertilizer in 2018. Khanthavong et al. (2012) found that hence, it is difficult to find labor for weeding in the period. As a result, farmer conducted weeding only once. Sounaly (2014) concluded the reason for the decrease in cassava yield is the result of the invasion of different types of starch, the use of different varieties, maintenance and environment, as usual, cassava will give high yield in the first year and the next year will decrease frequently if there is no soil improvement or no protection before planting. Therefore, next year there should be an elimination of insects and pests from the varieties that have been planted and must be selected to avoid each type of infection.

5. Conclusion

The main problems and challenges firstly, cost generation is the main concerns of growers, due to low negotiation power of growers and the middle man on pricing of cassava, their experienced in cultivating cassava based on basic knowledge. While, the land is an importance factor that the growers must take in considerations to solve the problems of nutrient deficiency, soaking and increase the nutrients in cassava types. Following concerns are the insects and disease of cassava is one factor that decreases cassava production and quality. Establish a collection group (merchants) to divide the area in the purchase of produce with farmers by systematically making contracts according to suitable conditions. Increase the distance between farmers and domestic processors or traders and domestic processors to increase the amount of domestic processing and export of cassava flour. Extension of weeding to farmers should be based on weed biomass not the time of weeding for labor saving on cassava cultivation. In summary, the tendency of cassava cultivation in the future will decline; the growers might change to plant others commercial crops instead depend on market.

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