



Sweet Orange Agribusiness Development Potential in Banuroja Village, Randangan District, Pohuwato Regency

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Abstract

This investigation was carried out in Banuroja Village, Randangan Sub-Area, and the Pohuwato district of Tanzania. Specifically, the goal of this research was to identify the potential for orange agribusiness development in Banuroja Village, Randangan Subdistrict, and Pohuwato District, as well as to choose methods for growing oranges in these locations. The research was carried out on 40 orange growers in the area. The findings revealed that the orange agribusiness has significant potential and development opportunities. Averaging Rp. 26,694,471.00 every harvest period, orange farmers earn an average of Rp. 26,694,471.00 per harvest season, with a revenue-to-cost ratio of 4.13. Following the identification and mapping of internal and external strategic elements, the findings indicate that rationalization or stability should be the top priority approach.

Introduction

The agriculture industry in Indonesia still has a great deal of untapped potential and a bright future. Although the industrial sector is given priority currently, the agricultural sector's growth cannot be divorced from its role as a reliable supporter (Lavers, 2012). A robust economy requires a robust agriculture sector, which necessitates collaboration amongst adjacent disciplines (Kementan RI, 2012). Among the several issues, what continues to be an impediment to farming is a lackluster strategy for penetrating the best profit margins (Suparwata & Pomolango, 2019a). This involves fruit crop development.

Fruit production, together with plantation, food crops, livestock, and fisheries subsectors, is a significant agricultural sector in Indonesia. Indonesian fruits, like those from other tropical nations, are a supply of fruit for sub-tropical countries (Firmansyah, 2010). Fruit commodities continue to be a popular crop to grow in rural areas (Suparwata & Djibrin, 2020). To avoid agricultural losses, farmers aim to precisely calculate their utilization of farming production elements (Suparwata & Pomolango, 2019b).

According to BPS RI (2017), the average weekly fruit intake of Indonesians in 2016 was just 0.069 kg (oranges) and 0.113 kg (apples) (bananas). Indonesians consumed just 40.06 kg per capita per year — much below the FAO recommended of 65.75 kg per capita per year.

According to statistics from the BPS for Pohuwato Regency (2017), Pohuwato Regency has a high concentration of seven fruits: mango, durian, orange, banana, papaya, pineapple, and jackfruit. Oranges are the most abundant fruit in Pohuwato Regency, with 1,567 tons produced in 2016.

Citrus fruits (in this case, sweet oranges—*Citrus sinensis*) produced in Pohuwato Regency's Randangan sub-district accounted for 99.24 percent of the total harvest in Pohuwato Regency;

the remainder was produced in Lemito, Wanggarasi, Marisa, Patilanggio, and Taluditi sub-districts (BPS Pohuwato, 2017).

Banuroja village, one of the communities in the Randangan sub-district, is now one of the regions with a high concentration of sweet orange crops. Banuroja Village has an area of 6.28 km² and is comprised of four hamlets. The majority of people in Banuroja Village work in agriculture (farmers/planters), particularly those who grow food crops.

The goal of this research, given the above context, is to assess the possibility for expanding sweet orange agribusiness in Banuroja Village, Randangan District, Pohuwato Regency.

Methods

Between February and March 2018, the study was done in Banuroja Village, Randangan District, Pohuwato Regency. It is a descriptive research that employs a survey technique. The data are qualitative and quantitative, collected from farmers and stakeholders.

Farmer respondents are drawn from the population, namely farmers in Banuroja Village; because to the population's small size (40 farmers), respondents are gathered by the census technique. Questionnaires, interviews, and documentation were used to gather data.

The variables in this research include the elements that drive farming, the factors that impede farming, and overall farm revenue, which is comprised of agricultural income, income from sweet orange farming, and non-agricultural income.

Results and Discussion

Production costs are distinguished by their structure into fixed costs and variable costs. Fixed costs incurred include Earth and Building Tax and depreciation expense on equipment. The amount of taxes for the United Nations on plantation land owned by farmers averages Rp. 66,480.00

Depreciation of Farm Equipment

Farmers use a number of plantation tools whose depreciation value calculations increase the assumption of the acquisition market price when researched with the straight-line method and the economic time of two years, unless the sprayer is assumed to have an economic time of three years. The amount of equipment depreciation value as seen in Table 1, averaged Rp. 736,704.17

Table 1. Depreciation Value of Tools Owned by Sweet Orange Farmers

Tool Name	Average Jml Ownership	Acquisition Price	Acquisition Costs	Depreciation Value
1. Plant Watering	3,45	60.000	207.000	103.500,00
Hoe	2,40	88.000	211.200	105.600,00
Bucket	4,27	75.000	320.625	160.312,50
Machete	3,40	100.000	340.000	170.000,00
Scissors	2,15	75.000	161.250	80.625,00
Sprayer	1,00	350.000	350.000	116.666,67
Sum				736.704,17

Source: Research Data, Processed (2018)

Non-Fixed Costs

Variable costs incurred include land processing costs, seed procurement, fertilizer purchases, drug purchases and labor wages.

Preparation and Processing of Land

At this stage the average cost for wages of preparatory labor and processing of land before planting is worth Rp. 236,250.00

Seedling Procurement

The average seed procurement cost is Rp. 4,630,000.00. For each hectare of land, farmers need 480 stems at an average price of Rp.9,645.83 for each seedling stem.

Purchase of Fertilizer

The average cost is Rp. 1,200,000.00. In each hectare of land, farmers need 50 kg with an average price of Rp. 20,000.00 per kg of fertilizer. In this case orange farmers have not used manure (organic fertilizer) so the use of balanced fertilizer has not been done.

Purchase of Drugs

In terms of drug use, farmers use Regent 50 SC. The amount used varies, namely packaging of 150 ml (priced at Rp. 27,850.00) and 250 ml (price of Rp. 58,500.00). The average use of these drugs is 170 ml with an average cost of Rp.90,240.00

Labor Wages

Labor wages include seed planting, maintenance, harvesting and post-harvest management work. Farmers use an average workforce of 19.75 Working People's Day (HOK).

Table 2. Recapitulation of The Average of No Fixed Costs Incurred by Farmers

Types of Expenses	Vol.	Price (Rp.)	Sum
Land processing	1	236.250,00	236.250,00
Seed	480	9.645,83	4.630.000,00
Fertilizer	60	20.000,00	1.200.000,00
Drugs	170	530,82	90.240,00
Workforce	19,95	75.000,00	1.496.250,00
Sum			7.652.740,00

Source: Research Data, Processed (2018)

The cost of labor wages incurred on average amounted to Rp. 1,496,250.00. The no fixed costs incurred by sweet orange farmers in Banuroja Village are seen in Table 2.

Income Analysis and R/C Ratio

The acceptance of sweet orange farmers is the result of multiplication between the production (harvest) and the selling price per unit of production received at the farmer level. The average harvest yield is 5,825 tons per harvest season, with an average price of Rp. 6,045,815.45 per ton. Thus, the average farmer's acceptance is Rp. 35,216,875.00.

Table 3. Recapitulation of Receipts, Costs, Income and Balance of Receipts and Fees of Sweet Orange Farmers of Banuroja Village

Type of Cost	Value (Rp.)
Acceptance	35.216.875,00

Fixed Costs	803.184,00
No Fixed Costs	7.719.220,00
Amount of Cost	8.522.404,00
Amount of Revenue	26.694.471,00
Acceptance and Cost Balance	4,13

Source: Research Data, Processed (2018)

Table 3 summarizes revenues, expenses, and income, as well as the revenue-cost balance. According to Table 3, the typical farmer earns Rp. 26,694,471.00 and the entire expenditures incurred amount Rp. 8,522,404.00. With an average annual revenue of Rp. 35,216,875.00, the revenue-to-cost ratio (R/C Ratio) is 4.13. This indicates that sweet orange growing in Banuroja Village was lucrative at the time of this investigation. The R/C ratio research reveals that every Rp. 1.00 invested on sweet orange growing generates Rp. 4.13 in income. The farmer produced 233 tons of citrus on a total land area of 48 hectares, according to the data. The production of sweet oranges exceeds 4.85 tons per hectare.

Potential and Development Strategies of Sweet Oranges

Sweet orange is a staple fruit cultivated in Randangan District, which includes Banuroja Village. Each year, when the season for sweet oranges begins, this item floods the market in almost all of Gorontalo Province, as well as North and Central Sulawesi Provinces. Randangan sweet oranges have a large market share, at least in Gorontalo Province. This is shown by the ease with which delicious oranges can be obtained in Randangan (found in almost all sweet orange traders).

This research employed a SWOT analysis to build a plan for growing sweet orange agribusiness in Banuroja Village. Interviews with sweet orange farmers, local government, extension workers, farmer group coordinators, and sweet orange dealers were conducted to ascertain internal and external influences.

Internal Factors

Internal factors are directed to identify strengths and weaknesses in efforts to develop sweet orange agribusiness. The internal conditions of sweet orange farming in Banuroja Village, Randangan District, Pohuwato Regency are as follows:

Strengths

Farm Experience

Farming experience is inextricably linked to agricultural management (Mikhailova et al., 2020). Farmers with sufficient experience manage their farms more effectively than farmers with insufficient experience. Farmers had an average of 19.4 years of agricultural experience, according to the statistics. This very lengthy amount of time demonstrates that farmers are deemed to have mastered sweet orange cultivation practices, including the effective use of all available resources in the face of all challenges.

Total Land Area

Farmers possess an average of 1.2 hectares of land to cultivate delicious oranges. Land area has a significant impact on output. Each harvest season, farmers produce an average of 5.82 tons (productivity reaches 4.85 tons per hectare). However, it is still a long way from the national citrus production target of 25-40 tons per hectare, which now stands at 17-25 tons per

hectare (Balitbang Agriculture, 2017). The region of sweet orange plantation in Banuroja Village has significant development potential.

Farmer's Level of Income

According to income analysis, farmers in Banuroja Village engage in sweet orange cultivation with an R/C ratio of 4.13. This result indicates that for every Rp. 1.00 spent on agricultural expenditures, a profit of Rp. 4.13 is generated. This is regarded very lucrative and is intended to push farmers to improve their business practices, so improving the welfare of sweet orange producers.

Weakness

Cultivation Techniques

Farmers continue to cultivate delicious oranges in a very easy manner. Farmers, on the other hand, constantly attempt to use the best planting techniques possible with the given resources (Reijntjes et al., 1992). In terms of fertilization, ineffective practices, such as the guidelines for utilizing balanced fertilizers, are still used. Pesticides are still mostly used haphazardly to control pests and plant diseases (Poudel et al., 2020). Concerning the utilization of superior and certified plant seeds, farmers accept that they are not employed during the planting process. Superior and verified seeds are regarded critical given the continued severity of HPT assaults.

Institutions Financières

Financial institutions' help is critical, particularly as a source of money for farmers. Apart from the banking sector, other financial entities that are anticipated to support capital include savings and lending cooperatives. Farmers invest the majority of their money in planting. Even though it is not planting season, capital is critical in scenarios when HPT assaults, fertilization, and harvest are imminent. Although the government provides credit to farmers under the People's Business Credit (KUR) program, farmers continue to have trouble accessing it. This relates to the bank's legality and other requirements (eg the provision of collateral and the existence of financial statements).

Institutional Functioning

Farmers continue to see a deficiency in the function (gait) of institutions as a supportive element for farming. The farmer organizations and extension efforts have not been fully used. The level of outreach initiatives is deficient, particularly in terms of updating information on sweet orange growing. According to the extensionist, farmers who have accumulated sufficient experience are regarded to have mastered farming practices.

Institutions such as farmer clubs, extension services, and cooperatives, in the opinion of farmers, are vital throughout the harvest season. Institutions are likely to play a role in this scenario by supporting the price of oranges and preventing them from falling during periods of ample supply. Additionally, farmers may benefit from the growth of agricultural knowledge via this institutional function.

Existing citrus farmer organizations are often Food Farmers Groups or sometimes an arisan group and are not devoted only to oranges. As a consequence of their different knowledge and abilities, members' actions become less concentrated. On the other hand, there are a significant number of Field Agricultural Extension Officers (PPL) who are unfamiliar with oranges. This situation has existed for an extended period of time and has remained unchanged till today. This suggests that the fragility of farmer institutions is a result of the supervisor's inadequate

capability and professionalism, specifically PPL's attempt to improve the independence of farmer organizations or other farmer institutions.

External Factors: *Opportunities*

Market Demand

Agribusiness is a comprehensive system that spans the whole value chain, from production through processing and commercialization. The study's findings indicate that each year, demand for sweet oranges increases in lockstep with population growth and public knowledge of the benefits of fruit consumption. This situation presents an excellent chance to expand sweet orange output in the future, with the added benefit that sweet orange farming in Banuroja Village continues to have favorable growth prospects.

Public policy

The government's involvement in promoting the growth of horticulture, particularly fruits, is critical via the Gorontalo Provincial Agriculture Service and the Pohuwato Regency Agriculture Service. This is seen in the government's attention, particularly in developing measures to assist farmers in managing their fields successfully. One of the ways the government supports farmers is through developing infrastructure, such as asphalted roads in the Randangan District, to ensure farmers and merchants have easy access to markets.

Advancement of Information Technology

It is evident that the present state of information technology development is progressively sophisticated. Farmers may undoubtedly exploit this scenario to expand their sweet orange growing. Farmers are needed to maintain constant access to knowledge regarding sweet orange farming using programs such as YouTube and social media platforms such as whatsapp, facebook, and instagram. Of course, given that an internet connection of sufficient quality is available to allow for effective usage of the program.

Threats

Pest and Plant Disease Attacks / Plant Disrupting Organizations (HPT/OPT)

Sweet orange is a type of horticultural plant that is relatively susceptible to pests and diseases. Field observations and interviews showed that the pests that often attack plants with high intensity are fruit flies (*Bactrocera* spp.). Fruit fly is one of the important pests on citrus plants. The damage caused by the larvae will cause the fruit to fall before it reaches the desired maturity.

In addition, ant pests (*Solenopsis geminata*) and walang sangit (*Leptocoriza acuta*) are also present, although with low intensity. Ant attacks by eating leaf shoots, flowers, young fruit and bark of young shoots cause direct damage to these parts. Walang sangit attacks also occur on leaves because that is where the bugs lay their larvae which will cause oranges to lose their sweet taste.

The disease that often occurs in sweet oranges is powdery mildew (*Oidium tingitanium* Carter) or farmers usually call it white tree disease. The intensity of this disease attack is high and all farmers in the study area have experienced this attack. This disease is common during the budding season which is characterized by the presence of a white powdery layer on the top of the leaves, and causes malformations of the leaves (drying but not falling).

The control of HPT by farmers is still using conventional techniques, namely pesticide spraying. In fact, nowadays many new innovation techniques that are environmentally friendly

have been developed. The use of natural enemies has not been widely applied by farmers. In addition, CVPD is still a dangerous disease that must be watched out for in any citrus agribusiness development efforts (Supriyanto & Lizia, 2014).

Similar Products

The existence of free trade today increasingly allows the entry of any product and from anywhere. Similarly, sweet orange commodities from Banuroja Village get many competitors from other regions. The emergence of imported oranges and oranges from South Sulawesi that entered the Gorontalo area is considered to erode the share of local sweet oranges. Sweet oranges originating from Sulawesi are from Selayar Sulawesi - South and Siompu - Southeast Sulawesi for tangerines as well as from Polewali Mandar - West Sulawesi for sweet oranges.

Marketing Process

Agricultural products are mainly horticultural (including fruits) including products that are not durable so they must be marketed as soon as possible. The prevailing price is largely determined by the quality and number of products marketed. The weak bargaining position of farmers due to the fragility of farmers' institutions often results in selling prices not in favor of farmers. The fragility of farmers' institutions resulted in harvests and marketing could not be coordinated in groups and often farmers had to deal with middlemen or large-capital collectors. They in addition to understanding the ins and outs of marketing citrus fruits, also about the daily needs of farmers' households.

The total score of each internal and external strategic factor is then searched for the difference, then the coordinates are obtained on the SWOT matrix. The position of the cross axis will form the coordinates so that the quadrant position will appear on the SWOT matrix. For internal strategic factors, the point is -0.381 on the X axis and for external strategic factors, 0.800 points are obtained on the Y axis, so that coordinates are formed (-0.4; 0.8) which is in quadrant III as shown in Figure 1.

From the SWOT matrix diagram in Figure 1, it can be seen that the strategic position of sweet orange agribusiness development in Banuroja Village is in quadrant III. In quadrant III, the main strategy is STABILITY, which is to support the rationalization strategy. This means that even though they are facing various threats, sweet orange farming in Banuroja Village still has strength. The strategy that must be applied is to use strength to take advantage of long-term opportunities by implementing product and market diversification strategies.

After knowing the meeting point of the diagonals, the position of sweet orange agribusiness development in Banuroja Village is known to be in quadrant II but tends to be close to quadrant I. So it is necessary to refine the analysis by calculating the area of each quadrant, the results are shown in Table 5.

Table 5. Priority of Sweet Orange Agribusiness Development Strategy

Quadrant	Point Position	Matrix Area	Ranking	Strategy Priorities
I	(2,33;3,30)	7,70	2	Growth
II	(2,33; 2,50)	5.83	4	Combination
III	(2,71; 3,30)	8.96	1	Stability
IV	(2,71;2,50)	6.79	3	Shrinking

Source: Primary Data, 2018

In quadrant I (Strategy S - O); A common strategy that can be used by sweet orange farmers is to use all the power factors to take every advantage on the occasion at hand. In quadrant II

(Strategy S - T); farmers make every power to deal with all threats by creating diversification to create opportunities. In quadrant III (Strategy W - O) farmers can make an advantage at every opportunity, as a reference to focus activities by reducing weakness. An alternative strategy that may be done is with a rationalization or stability strategy

Conclusion

Sweet orange agribusiness in Banuroja Village, Randangan District has good potential and prospects to be developed. The average income obtained by farmers is Rp. 26,694,471.00 with a balance of revenues and costs (R/C ratio) of 4.13. Identification and mapping of internal and external strategic factors obtained the results that the priority of the strategy is rationalization (stability). Sweet orange agribusiness in Banuroja Village really needs support from the government. For this reason, it is suggested to the Government to expand its role in the development of sweet orange agribusiness. Through the empowerment of financial institutions, which require supervision from the Government and the provision of production facilities in sufficient quantity and quality.

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