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PRODUCTION AND MARKETING STRATEGIES: REDUCE DEPENDENCE ON THE IJON SYSTEM AND INCREASE SOYBEAN FARMER'S INCOME

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Abstract: The research aims to develop a production and marketing strategy to eliminate dependence on the ijon system and farmers' income. The study was conducted at the Sunda Javanese Transmigration Soybean production center, Dataran Bulan, Ampana Tete District, Tojo Una-Una Regency, Central Sulawesi Province. The sampling technique was the purposive sampling of farmers in Bulan Jaya, Giri Mulyo, Wanasari, Mpoa, and Suka Maju villages. SWOT analysis designs strategic models for increasing production marketing and income. Furthermore, the Revenue and Cost Ratio (R/C) analysis was implemented to see whether the soybean farming business is feasible. The research results show an average production of 2.31 tonnes/Ha/MT and productivity of 1.34 tonnes/Ha/MT. The Production and Marketing Strategy Model as an Effort to Eliminate Dependence on the Ijon System is in Quadrant 1 and Quadrant 2, namely the S-O strategy and S-T strategy. Furthermore, analysis of the R/C ratio (Revenue/Cost) was obtained at = 1.55. The R/C ratio is > 1, so it is concluded that soybean farming is feasible to develop and profitable.

Keywords: ijon system, marketing strategy, production strategy, farmers' income, SWOT

Abstrak: *Tujuan penelitian ini yaitu menyusun strategi produksi dan pemasaran sebagai upaya menghilangkan ketergantungan pada system ijon dan pendapatan petani. Penelitian dilakukan pada sentra produksi Kedelei Transmigrasi Jawa Sunda Dataran Bulan Kecamatan Ampana Tete Kabupaten Tojo Una-Una, Provinsi Sulawesi Tengah. Teknik penarikan sampel dilakukan secara purposive sampling pada kelompok tani di Desa Bulan Jaya, Giri Mulyo, Wanasari, Mpoa, dan Suka Maju. Analisis SWOT digunakan untuk mendesain model strategi peningatan produksi dan pemasaran serta pendapatan. Kemudian, analisis dilanjutkan dengan menghitung Rasio Revenue dan Cost (R/C) untuk melihat layak tidaknya usaha tani kedelei tersebut. Hasil penelitian menunjukkan produksi rata-rata sebesar 2,31 ton/Ha/MT dan produktivitas 1,34 Ton/Ha/MT. Model Strategi Produksi dan Pemasaran Sebagai Upaya Menghilangkan Ketergantungan pada System Ijon berada pada Kuadran 1 dan Kuadran 2, yaitu stategi S-O dan strategi S-T. Selanjutnya, analisis R/C rasio (Revenue/Cost) diperoleh sebesar = 1,55. Rasio R/C > 1, maka disimpulkan usahatani kedelai layak untuk dikembangkan dan menguntungkan.*

Kata kunci: *sistem ijon, strategi pemasaran, strategi produksi, pendapatan petani, SWOT*

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INTRODUCTION

Soybean (*Glycine max* L. Merr.) is a strategic commodity included in the national strategic program. There needs to be more than domestic production. Therefore, imports are carried out to meet the national demand for soybeans, where soybean imports annually account for 65% of the need or the equivalent of 2.49 million tons. National production reached 590,000 tons, and productivity reached 1.6 tons/ha (Harsono et al. 2021). One of the soybean centers in Central Sulawesi Province is Tojo Una-Una Regency with the largest of the Java-Sunda transmigration area in Dataran Bulan. The total production of Central Sulawesi soybeans was 13,270 tons, and the contribution of Tojo Una-Una Regency was 8,147 tons, or a contribution of 61.39 (BPS, 2023). The productivity of soybeans achieved by farmers in transmigration areas is an average of 1.34 tons/ha, which is still low compared to the average national production (1.6 tons/ha). One of the problems with the low productivity achieved is the inadequate facilities and infrastructure, seeds, improved cultivation technology, and the number of extension workers available in each village is one extension agent, so it is not optimal to reach the needs of farmers.

To increase productivity, the government has allocated a 2023 budget of IDR 745.1 billion for soybean self-sufficiency next year. The government developed GMO (Genetically Modified Organisms) soybeans to increase productivity. This type of GMO soybean is a superior seed that various countries have developed with a productivity level of 2 tons to 2.5 tons per hectare and lower production costs. According to Bonny (2008) and Ghimire et al. (2023), transgenic soybeans have strategies that are useful for increasing yields and resistance to disease resistance, tolerance to the environment (cold, heat, drought, salinity, herbicides, and pests). In addition, transgenic soybeans provide higher economic margins. Based on the advantages possessed by GMO soybeans, it is very suitable to be developed in the transmigration area in Tojo Una-Una Regency to increase its production.

Furthermore, marketing is essential, especially in determining the selling price of farmers. Generally, farmers are bound by Ijon system with collectors at the village and district levels, thus weakening the bargaining position of farmers. In the practice of buying and selling Ijon in the community by buying and selling agricultural/plantation plants that still need to be perfectly ripe. The Ijon system is more dominant due to cultural and social factors (Aswad, 2021; Latifa and Andriyani, 2022). Besides that, the future contract system also colors behavior in general, and the risk of bargaining position is low, but this can be anticipated by negotiating and utilizing financial/non-financial institutions (Algarvio, 2023; Saleem et al. 2023). The implementation of the price of local soybeans at the farmer's level is IDR 8,000 per kg, and at the district collector's level, is IDR 12,000/kg. The survey results at the research location related to the Ijon system are the cause, namely, the transportation costs are high, and the access could be smoother. The developing agricultural commodity centers should be supported by smooth transportation and low fees so that prices at the level of farmers and consumers are not too high (Kadarisman et al. 2016; Oktaviana et al. 2011). The research aims to develop a Production and Marketing Strategy as an Effort to Eliminate Dependence on the Ijon System and Increase Farmers' Income.

Furthermore, the marketing aspect is crucial, especially in determining the selling price for farmers. In general, farmers are tied to a Ijon System with collecting traders at the village and district level, thus weakening the farmer's position of trust. In the practice of buying and selling Ijon in the community by buying and selling agricultural/plantation plants that are not yet fully mature. The Ijon System more predominantly occurs due to culture and society (Aswad, 2021; Latifa and Andriyani, 2022). Beside that, the future contract system also influences behavior in general, and the risk to the bargaining position becomes low but can be anticipated by negotiating and utilizing financial/non-financial institutions (Algarvio, 2023; Saleem et al. 2023). The implementation of local soybean prices at the farmer level is IDR 8,000 per kg, and at the district collector level is IDR 12,000 per kg. The survey results at the research location regarding the Ijon System were caused by transportation costs, which were relatively high and inaccessible. Kadarisman et al. (2016) and Oktaviana et al. (2011) stated that developing agricultural commodity centers should be supported by infrastructure and low costs so that prices at the farmer and consumer levels are not too high.

Furthermore, the advantages or disadvantages of the bonded bond system for farmers can vary depending on various factors, including how the system is set up, interest rates, government policies, and other aspects. The ijon system can benefit farmers in some cases, but

it can also present risks and losses. The research results of Yazdani and Ali (2017) show that the Ijon system that applies to farmers in Pakistan has several benefits, such as providing access to resources and capital, which can increase agricultural production. However, there is a risk of dependency and debt burden, which may reduce farmers' income. The same research conducted by Islam et al. (2018) examined the impact of the bonded debt system on farmers in Bangladesh. The results of this research show that the connected debt system can help farmers increase their production and income. Still, it indicates that high interest rates and detrimental practices can make farmers vulnerable to debt. Research by Bjornlund et al. (2020) describes the impact of the Ijon System on farmers in various African countries. They found that Ijon System can provide access to capital for farms but can also present significant financial risks for farmers.

Based on the findings of this research, the impact of the bonded bond system on farmers can vary based on geographical context, the practices of lending companies, and various other factors. While Ijon Systems can provide benefits in terms of resource access, it should be noted that the risk of dependency and debt burdens can also be detrimental to farmers if not managed well. Apart from that, farmers' income is also closely related to marketing. Therefore, it is crucial to pay attention to the choice of marketing channels, including the prices obtained by farmers, which can have a significant impact on their income. The research results show that Boateng et al. (2023) explore the relationship between food supply chains and farmer incomes in developing countries. The results of this research show that integrating farmers into a longer and more efficient food supply chain can increase farmer income. This research provides insight into the importance of efficient marketing in increasing farmers' income. Likewise, Tamene and Megento (2017) analyzed the impact of infrastructure and marketing networks on farmers' income in Ethiopia. This research found that good access to markets and transportation infrastructure can increase farmers' income by enabling them to sell products at better prices. A study by Bellemare (2015) investigated the impact of costs and price fluctuations of agricultural commodities on farmers' income in various countries. The results of this research highlight the importance of stable and high prices for farmers to increase their income.

Based on the results of previous studies, it has yet to be revealed that farmers trapped in the Ijon system are influenced by, among other things, straightforward requirements or family ties with no guarantees, even though farmers do not have the power to determine prices. As a result, farmers are sometimes disadvantaged, both in terms of price, and each harvest is required to pay off the debt in full. In addition, the weakness of the agreement is that it is not written, so the agreement between the capital lender and the farmer is only mutual trust. Based on this research gap, the author is interested in researching farmer income concerning production, marketing, and the debt bondage system among soybean farmers. This research aims to study and analyze (1) production and marketing, (2) the feasibility of soybean farming in transmigration areas, and (3) develop strategies to reduce farmers' dependence on the Ijon system.

METHODS

This type of research can be categorized as quantitative research. This research was carried out in the Transmigration Area, Darat Bulan Village, Central Sulawesi, and the research period was three months. Data collection was carried out using a survey method in each village of 2 farmer groups, so the total was ten groups from 5 villages. In addition, information was collected from informants from village and district-level trader groups through Focus Group Discussions (FGD). Furthermore, the analytical method uses the SWOT analysis approach (Strengths, Weaknesses, Opportunities, Threats). This analysis have been widely used to developed marketing and entrepreneur strategies of various agricultural and minimarket products (Suwanmaneepong et al. 2018; Poniwatie et al. 2022). The SWOT analysis can be used to analyze a condition which will be made a plan to do something including soybean production (Lestari and Yunita, 2020). The advantage of using SWOT analysis is in setting objectives for strategic planning. The SWOT analysis assesses factors outside the company (opportunities and threats) and factors within the company (strengths and weaknesses). Factors within the company are included in a matrix called the internal strategic factor matrix or IFAS (Internal Strategic Factor Analysis Summary). In contrast, factors from outside the company are included in a matrix called the external strategic factor matrix or EFAS (External Strategic Factor Analysis Summary). The SWOT matrix is a tool used to compile

a company's strategic factors. This matrix can clearly illustrate how the external opportunities and threats faced by the company can be adjusted to its strengths and weaknesses. Furthermore, we calculate acceptance and eligibility with an R/C (Revenue/Cost) comparison ratio. If the R/C ratio is > 1, farming is feasible and profitable. Soekartawi (2016) stated that the Revenue Cost Ratio analysis is an analysis that looks at the comparison between revenue and expenditure. The aim is to find out whether farming is feasible or not using the formula:

a = R/C

with: a (Comparison between Total Revenue and Total Cost); R (Total Revenue (total receipts)); C (Total Cost (total costs)).

If R/C = 1, it means there is no profit nor loss or break even. If R/C < 1, it shows that the business is not worth running and if R/C > 1, then the farming is worth running (Soekartawi, 2016).

Hypothesis:
1. The S-O Strategy Model in Quadrant 1 and the S-T strategy in Quadrant 2 can increase Production and improve the Marketing system to overcome dependence on the Ijon System in Soybean farming in the Plains Moon Transmigration Area.
2. It is suspected that the R/C Ratio in Soybean farming above (> 1) is worth pursuing.

RESULTS

Respondent Profile

Age

Based on the results of identifying the ages of group members who were respondents in five villages, namely Bulan Jaya, Girimulyo, Wanasari, Mpoa, and Sukamaju Villages, it shows that the average age of farmer group members is under 50 years old in Bulan Jaya Village, Girimulyo Village, Wanasari Village (except Jarez Farmers Group), Mpoa Village (except Vale Wana Farmers Group), and Sukamaju Village. The age of the farmer members in the transmigration area is productive enough to carry out better farming.

Education

Based on the results of identifying the education of group members who were respondents in five villages, namely Bulan Jaya, Girimulyo, Wanasari, Mpoa, and Sukamaju villages, it shows that the majority of the average education of farmer group members is in the junior high school graduation category, except for farmer groups in villages Bulan Jaya has a relatively better education, with an average high school graduate. This suggests that with relatively low education, assistance from extension workers is needed, which is more intense in implementing appropriate technology. The average education category of farmer are presented in Table 1.

Experiences in Soybean Commodity Farming

Based on the identification results for the experience of farming soybean commodities for group members who were respondents in five villages, namely Bulan Jaya, Girimulyo, Wanasari, Mpoa, and Sukamaju Villages, it shows that the majority of the average duration of soybean farming is between 4–6 years. Until now, the motivation to keep doing soybean farming is still high. This is greatly supported by the experience and support of various government programs, including seed and fertilizer assistance which is always routine every year.

Number of Respondents' Family Members

Based on the identification results for the number of family members for group members who were respondents in five villages, namely Bulan Jaya, Girimulyo, Wanasari, Mpoa, and Sukamaju Villages, it shows that the majority of farmer groups have an average family member of five people, except for the Mekarsari Farmer Group which has an average of four people and the Maju Bersama Farmer Group has an average family member of six people.

Descriptive Research Variables

Land Area

Based on the research results in the five sample villages, the dominant land area is 2.15 ha. This indicates that the agricultural land owned by farmers now is still a gift from the government since they settled in the transmigration area. The interview results revealed that farmers have been unable to increase the area of arable

land due to limited capital for investment. However, judging from the number of farmers included as group members, it was significant, namely 268 farmers with a total land area of 547 ha (Table 2).

Application of Cultivation Technology

Farmers should not ignore the application of soybean cultivation technology because excellent and correct technology greatly supports soybean production and productivity. According to Jamal (2008) and Sukmasari et al. (2022).

Our result shows that, as a whole, the sample of farmers in five villages or eight farmer groups can be explained as follows (Table 3).

a. Soil processing from five indicators, on average only do 2-3 activities. For example the land is plowed, harrowed, and leveled before planting, weeds are buried to be organic fertilizer, and the soil is dried before planting.
b. The planting technology of the 4 (four) indicators measured only averaged 2-3 activities. For example, spacing according to recommendations from extension workers, covering the seeds with loose soil and not compacting it, and planting at the end of the rainy season.
c. Thinning and embroidery technology (seed replacement) from 2 (two) indicators, only one activity was carried out, namely: soybeans began to grow in about 5-6 days, seeds that did not grow were replaced or embroidered with new seeds, but the replacement on average it is not done in the afternoon, even though the concept suggests in the afternoon, with the intention that the soil has started to cool so that the seeds can adapt well.
d. Weeding Technology from 2 (two) indicators, only one activity was carried out, namely: the first wedding at the age of 2 – 3 weeks, the second when the plants finish flowering (about six weeks after planting).
e. Fertilization Technology from 2 (two) indicators, only 1 or 2 activities are carried out: fertilization after two weeks of planting and six weeks after. However, the information obtained from these two activities was carried out, but the measurement of fertilizer use (Urea, SP, KCL) has not been carried out according to the recommended technological concept because most farmers have difficulty in working capital and consider this a burdensome cost for their farming business.
f. Irrigation and Watering Technology from 2 (two) indicators on average only performs one activity, namely: just before harvest, the soil is left dry.
g. Pest and disease control technology from 2 (two) indicators are all carried out, namely: if there is an attack by aphid pests, or beetles, caterpillars, and flies, farmers give drugs such as pestona.
h. Harvest and post-harvest technology, namely harvesting between 75 – 100 days, and post-harvest handling is drying and packing in sacks, but quality is not separated, and then ready for marketing.

Table 1. Name of village, group, age, education, experience, and the number of family members Java-Sunda transmigration areas, Dataran Bulan.

Village	Name of Farmer Group	Age (Years Old)	Education	Experiences in Soybean Commodity Farming (Year)	Number of Family Member (Person)
Bulan Jaya	Mekar sari	43.47	3	5.76	4
	Maju Bersama	46.10	3	5.38	6
Girimulyo	Cinta Hidup	48.46	2	6.62	5
	Harapan Bersama	45.58	3	5.04	5
Wanasari	Jarez	52.25	2	5.45	5
	Podo Moro	49.91	2	5.68	5
Mpoa	Polu Indah	43.35	2	5.22	5
	Vali Wana	50.13	2	4.50	5
Sukamaju	Muhajirin	47.48	2	4.81	5
	Selaparang	46.54	2	4.38	5

Tabel 2. Name of Village, Name of Farmer Group, Number of Members, Total Land Area and Number of Sample Farmers and Land Area in 2023

Village	Farmer Group Name	Number of Members	Land Area (ha)	Number of Sample Farmers (Person)	Total Sample Land Area (ha)
Bulan Jaya	Mekar sari	30	60	17	48
	Maju Bersama	30	60	21	51
Girimulyo	Cinta Hidup	15	30	13	26
	Harapan Bersama	30	60	24	48
Wanasari	Jarez	30	60	20	38
	Podo Moro	30	60	23	46
Mpoa	Polu Indah	23	51	23	51
	Vali Wana	20	46	16	36
Sukamaju	Muhajirin	30	60	21	42
	Selaparang	30	60	26	52
Total		268	547	204	438
Average					2,15

Table 3. Realization of the Application of Technology Concepts to Soybean Plants in the Plains of the Moon Transmigration Area

Village	Farmer Group	Average Application of Technology (Activity)								Average
		Land	Planting	Stitching	Weeding	Fertilizer	Irrigation	Pest/ Disease	Post-harvest	
Bulan Jaya	Mekar sari	3	3	1	2	1	2	2	1	2
	Maju Bersama	2	2	1	2	1	1	2	1	2
Girimulyo	Cinta Hidup	2	2	2	2	2	1	2	1	2
	Harapan Bersama	2	2	1	2	1	2	2	1	2
Wanasari	Jarez	2	2	1	2	1	2	2	1	2
	Podo Moro	3	2	1	2	1	2	2	1	2
Mpoa	Polu Indah	1	1	1	2	2	1	2	1	1
	Vali Wana	1	1	1	2	1	1	2	1	1
Sukamaju	Muhajirin	1	2	1	2	2	1	2	1	1
	Selaparang	1	1	1	2	2	1	2	1	1
Average		2	2	1	2	1	1	2	1	2

Types of Seeds, Frequency and Soybean Planting Schedule

Our result shows that using Anjasmoro and local types of seeds, with the frequency and planting schedule in the study area, was carried out simultaneously. This informs that the transmigration area for soybean cultivation activities is the primary choice because it is supported by superior topography and climate. However, the planting schedule will change along with weather changes that are less predictable by farmers. For the use of selected types of seeds as recommended by the agricultural service or direct seed assistance. However, if seed assistance from the government is delayed or stopped, farmers tend to use local seeds provided or set aside from the harvest (Table 4).

Soybean Production

The results of research in five villages in the Dataran Bulan Transmigration Area show that the level of production and productivity achieved varies greatly, depending on the land area and the application of technology as related to the discussion on technological aspects in the previous section. Our result shows that the production of transmigration areas is very potential

for soybean plants, although the level of productivity achieved is still relatively small, only reaching 1.34 tons/ha, when compared to other regions (Sulawesi, South Sulawesi) which use the same type of seeds (Anjasmoro) has reached 2–3 tons/ha.

Agricultural Extension and Motivation in Soybean Farming

Agricultural extension is very important especially in the ability of extension workers and the attractiveness of the material presented is related to the problem at hand. The two indicators will be described as follows.

Ability of agricultural extension workers

Based on the research results, the responses of 204 respondents from 5 (five) villages with 8 (eight) farmer groups gave varied responses, as shown in the following table. Respondents' responses to the ability of extension workers: respondents said they were 14.20% less capable, 18.60% quite capable, 40.70% capable, and 26.50% very capable. This indicates that it is crucial to improve the ability of extension workers to provide solutions to farmers.

Presented Material

Based on the research results, responses from 204 respondents from 5 (five) villages with 8 (eight) farmer groups gave varying responses. Respondents' responses to the material presented by the instructors: respondents said it was not interesting 6.9%, quite interesting 26.00%, interesting 60.30%, and very interesting 6.90%. This indicates that the material presented by extension workers must be given following the problems faced by farmers.

Motivation in Soybean Farming

Based on the research results, the responses of 204 respondents from 5 (five) villages with 8 (eight) farmer groups gave varied responses. Respondents' responses to the motivation for cultivating soybeans: respondents said it was quite high 2.45%, high at 34.80%, and very high at 62.75%. This suggests that farmers still have the motivation and hope to continue working on soybean crops, which are considered still profitable.

Marketing

Marketing of agricultural products is an aspect that is always considered by farmers. In this marketing, what is measured is whether farmers carry out quality sorting, choice of marketing institutions, and payment systems. For more details, it can be described as follows: marketing institutions, and payment systems.

Quality Sorting

Based on the results of the research, the answers of 204 respondents from 5 (five) villages with 8 (eight) farmer groups gave varying responses to quality sorting efforts. Respondents' responses to quality sorting were that 34.8% of respondents said they did not carry out quality sorting, and 65.2% did quality sorting. This indicates that sorting quality is very important because farmers will get a high price difference.

Choice of Marketing Institutions

Based on the results of the research, the answers of 204 respondents from 5 (five) villages with 8 (eight) groups of farmers gave varying responses to the choice of marketing institution: respondents chose to sell to village traders as much as 83.30%, sub-district level traders as much as 5.9%, and selling to district level traders as much as 10.80%. This indicates that the choice of marketing institution is determined more by marketing distribution costs, and generally, there is a bonded contract between traders at the village level. Besides that, there is the factor of closeness to the bonded debtor as a provider of working capital.

Table 4. Types of seeds, frequency and soybean planting schedule

Varieties	Planting frequecny (times)	Months
Anjasmoro	3	February, June, October, November
Local		

Payment method

Based on the results of the research, it shows that the respondents' responses to the method of payment for the sale of soybean products. Respondents' responses to the method of paying for the harvest: respondents chose cash as much as 16.18%, time-term as much as 13.73%, and the debt bond system as much as 70.10%. This indicates that soybean farmers are still firmly attached to the bonded debt system. Ijon still binds farmers for several reasons, including convenience or practicality without collateral. With the Ijon system, farmers can get loans anytime and anywhere without conditions and more on a Ijon of mutual trust. However, the price power remains in the hands of the Ijon person.

Marketing Margins

Based on the table of marketing options by farmers, the majority sell to collectors compared to other marketing institutions. For more details. The choice of marketing institutions that have high-profit margins is (1) Farmers - Subdistrict Collector Traders, the profit margin obtained by farmers is IDR 538,500, (2) Farmers - Regency Collecting Traders, the profit margin obtained by farmers is IDR 2,692,500.- and (3) Farmers - Provincial Collecting Traders, the profit margin obtained by farmers is IDR 3,231,000.-. This indicates that if farmers want to enjoy high profit margins, then farmers or farmer groups must sell to provincial-level collectors.

Facilities and infrastructure

The Facilities and Infrastructure of the Dataran Bulan Transmigration Area, illustrates that the area has not yet fully received the attention of decision makers, this area should be considered because it is a buffer for the demand for soybean commodities in that district and other districts. For road conditions, there is a problem with the nearest district, namely Luwuk Banggai, where some are included in the district area. Banggai and part of the way into Tojo Una-Una District, so there has been a tug-of-war over the cost of road repairs, which until now has not been resolved.

Financial Institutions and Cooperatives

Observations showed that in the Dataran Bulan transmigration area there were no cooperatives built by farmer groups and access to financial institutions had not yet reached the area. Illustrates that with inadequate facilities and infrastructure in the area, this has caused banking access, especially Bank Rakyat Indonesia (BRI), to not prioritize serving farmers' requests for KUR (People's Business Credit) facilities. In addition, farmer groups have the motivation to build cooperatives, but need facilitators to act as institutional builders. Credit facilities through leasing, most farmers only need a vehicle loan for their farming operations.

Revenue, Cost and Income of Soybean Farmers and R/C Ratio

The results of identifying fixed and variable costs incurred by soybean farmers per hectare per planting season (MT) can be presented in the following table. Based on Table 5, it appears that with a production of IDR 1,077.00 kg/ha/MT, it will generate a net income of IDR 3,059,192/ha/MT and an R/C ratio of 1.55. Because R/C > 1, soybean farming is very profitable to develop. This means that for every 1 rupiah sacrifice, farmers can enjoy a profit of IDR 1.55 rupiah.

SWOT analysis

IFAS SWOT Matrix

Based on the results of the identification of the SWOT analysis conducted in the Java-Sunda Transmigration Area of the Dataran Bulan, the total score obtained according to the indicators can be presented in Table 6. Indicates that the strategy of production and marketing Strategy as an effort to reduce dependence on the Ijon System and increase the income of soybean farmers in the Java-Sunda Transmigration Area Dataran Bulan shows an IFAS score of 4.46 (high) which is contributed by the score of the internal strengths of farmers, namely: farmers have an average cultivated land area of 2 Ha, which is supported by the experience of farmers who have cultivated soybeans for an average of more than 5 years, have a high sense of mutual cooperation, especially in helping take turns when planting seeds for all group members, and accompanied by high motivation in soybean farming.

Table 5. Revenue, Analysis of costs and income of soybean farmers per/Ha/MT and R/C ratio

Description			Amount (IDR/Ha)
Receipt of results / ha			8,616,000,00
- Production /ha/MT (kg)	1,077,00		
- Average price (village collector level)	8,000		
Cost :			
A. Fixed Cost (BT/MT)		675,077	
- Electricity	119,615		
- Adm/ Member fees	30,462		
- shrinkage	300,000		
- Tax	225,000		
B. Variable Costs (BV) (Rp/Ha):		4,881,731	
- Fertilizer	366,923		
- Pesticides	755,577		
- Seeds	1,400,000		
- Labor	2,359,231		
Total Cost (BT + B V)			5,556,808
Soybean Farming Income			3,059,192
R / C			1,55

Table 6. SWOT Matrix analysis (IFAS)

Internal Factor	Bobot	Rating	Score Value
	a= 0 – 1	b= 1 - 5	c = (axb)
Strength			
Availability of farmer's land (average 2 ha)	0.14	5	0.70
Experience in soybean farming (> 5 years)	0.16	4	0.64
Mutual cooperation between group members during the planting season	0.19	4	0.76
The motivation to try on high soybean commodities	0.23	5	1.15
Total Strength	0.72	4.5	3.25
Weakness			
Limited own capital so that the level of dependence on ijon is quite high	0.05	5	0.25
The use of production inputs and technology is not optimal	0.06	5	0.30
Agricultural cooperatives have not yet been formed	0.05	4	0.20
Ability access to banks	0.04	4	0.16
Bargaining position of farmers is low as a result of being bound by a contract with Ijon	0.06	5	0.30
Number of Weaknesses	0.26	4.60	1.21
Number of Internal Factors		1	4.55

Furthermore, internal weakness factors that contribute to soybean farming which has the highest value are: the relatively low bargaining position of farmers in price negotiations, because some of the farmers are bound by down payment (loans), thus affecting working capital. In addition, the ability to access banks is relatively weak, especially the ability to convince banks that farming is feasible to finance, and some farmers do not have land certificates. Another weakness is that farmers have not yet formed cooperatives with group members or Gapoktan cooperatives (a collection of several farmer groups who join and work together to increase economic scale and business efficiency). Even though cooperative institutions owned by farmers will help a lot in dealing with working capital with easier conditions.

EFAS SWOT Matrix

In addition to the strengths and weaknesses factors described above, the results of the analysis of external factors can also be displayed as presented in Table 7. Table 7 indicates that the Production and Marketing Strategy as an Effort to Reduce Dependence on the Ijon System and Increase the Income of Soybean Farmers in the Java-Sunda Transmigration Area Dataran Bulan shows an EFAS score of 4.62 which is contributed by the score of the highest external opportunity, namely: that demand the market for soybean commodities is quite high, and the level of ease of marketing the crops. Apart from that, the assistance programs that farmers receive almost every year are in the form of seeds and fertilizers (the average seed assistance is 30 kg/ha). Likewise, farmers feel that the area where soybean farming is greatly supported by the topography with an altitude of 600 – 800 m asl (above sea level) with a cool climate.

Furthermore, the threat factor contributing to soybean farming which has the highest value is: the threat of high transportation costs which can only be operated by Hartop or HyLux double axle cars, so market access is very limited. Transportation costs for passengers IDR 100,000/person/route. Besides that, another threat is that if there is a flood (river) disaster, the relationship between villages will be cut off, both between villages (each village is bounded by a fairly large river), as well as marketing activities to the capital city/district. This is very concerning because up to 15 years the government has not paid attention to building a connecting bridge in this area. Looking at the SWOT analysis diagram in Figure 1, the strategy is S-O and S-T strategy. Of the two main strategies can be formulated as follows:

Quadrant 1:

It is a favorable situation because it has the power to take advantage of the opportunities that exist. The strategy that must be applied is to increase the productivity of the available land by applying technology, because the motivation of farmers to work on soybean commodities is still high, which is supported by sufficient experience from farmers, to take advantage of market opportunities for high demand for soybean commodities, as well as marketing that is not difficult. Besides that, increasing the capacity of farmers is needed, especially in the era of information technology which requires a high level of adaptation of extension workers (Prayoga 2018; Damanik and Tahitu, 2020).

Table 7. SWOT Matrix analysis (EFAS)

External Factor	Weight	Rating	Score Value
	a= 0 – 1	b= 1 - 5	c = (axb)
Opportunity			
The demand for soybeans is quite high	0.21	5	1.05
Ease of marketing soybean	0.19	4	0.76
Local government assistance is realized every year (seeds and fertilizers)	0.14	4	0.56
The topography is suitable for soybean crops	0.19	4	0.76
Number of Opportunity	0.73	4.25	3.13
Threats			
Road facilities from the capital city to the location are mostly damaged	0.09	5	0.45
Until now, no bridges have been built to connect villages to one another	0.08	4	0.32
Transportation costs are quite high (only HiLux/Hardtop) that can operate	0.09	5	0.45
Price-determining power of collectors (Ijon)	0.05	3	0.15
There are only 1 extension worker for 3 villages	0.04	3	0.12
Number of Threats	0.35	4.00	1.49
Number of External Factors	1	4.13	4.62

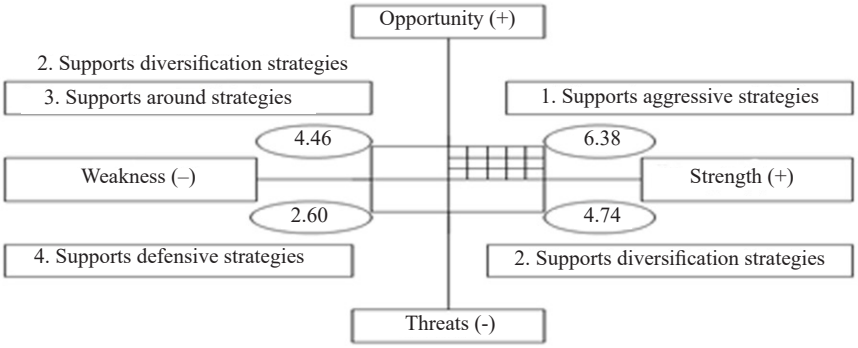

Figure 2. SWOT Analysis diagram of production and marketing strategy as an effort to reduce and increase the income of soybean farmers in the Java-Sunda transmigration areas of Dataran Bulan.

Quadrant 2:

Despite facing various threats, in this condition they still have strength, especially available land, high farmer motivation, and sufficient experience. However, the threat that has been felt so far can be overcome if there is political will from the government to improve road facilities and infrastructure so that transportation costs can be reduced, trying to reduce risks with the debt bondage system and being able to build a corporate famming (CF) system (Supriyanto et al. 2003).

Quadrant 3:

Transmigration farmers can take advantage of considerable opportunities, but the weakness factor is especially in the financial sub-system, opportunities in this sub-system need to be utilized by farmers in obtaining credit assistance to expand their business. However, on the other hand, farmers face several internal constraints/weaknesses, namely in the sub-system of government institutions and farmer institutions (farmer groups or Gapoktan).

Quadrant 4:

This situation is very unfavorable for farmers, because farmers face various kinds of external threats and internal weaknesses. For this reason, the effort that must be considered in this strategy is to minimize the weaknesses and threats that exist.

Production and Marketing Strategy as an Effort to Reduce Dependence on the Ijon System and Increase the Income of Soybean Farmers

Studying and analyzing the results of the SWOT description that has been described in the description, the strategy is formulated into 5 I's, namely:

1. Improvement of Facilities and Infrastructure (I1)
2. Increasing prices by reducing dependence on Ijon so that the bargaining position of farmers becomes stronger (I2)
3. Improvement of Cultivation Technology (I3)
4. Capacity building and rationalization of the number of extension workers (I4)
5. Increasing access to financial institutions (I5)

The description of the I is as follows:

1. **Improvement of facilities and infrastructure**; the priority is resolving border road disputes between Luwuk Banggai Regency and Tojo Una-Una Regency, so that planning for road construction costs can be carried out immediately. If there is an increase in road improvements, access to goods and people becomes smoother and marketing costs can be minimized. Likewise, the construction of dividing bridges between villages, for example the villages of Bulan Jaya and Wanasari Village, and Girimulyo Village, is bounded by a wide river. When this river overflows, all economic and social activities become paralyzed. Another improvement is communication access which is only available for 1 (one) SSB in Bulan Jaya Village. Access to this communication is important, because price information needs to be quickly and accurately reached to farmers, so that changes in prices, especially production inputs and selling prices, are not only obtained from collecting

traders, who incidentally are less fair, traders are more likely to take advantage of this weakness.

2. **Increase Price**; Guaranteed price increases are eagerly awaited by farmers, soybean price improvements will be realized if the government makes regulations and takes sides with soybean farmers, so that the ijon are not used, considering the conditions of the research area, it is very possible that prices are determined by the power of traders both in production input prices and soybean prices. The market mechanism for soybean commodities cannot be separated from the market mechanism. If farmers want to obtain a more reasonable price, they should not be tied to the ijon.
3. **Improvement of Cultivation Technology**; The application of technology is an effort to increase production and productivity starting from tillage, planting, thinning/weeding, fertilizing, irrigation and sprinkling, proper handling of pests and diseases, as well as harvest and post-harvest treatment. The cultivation system that is carried out as it is has implications for the level of production and productivity.
4. **Improvement of Capacity building and rationalization of the number of extension workers**: The role of extension workers is as the spearhead in the production process, therefore improving the number of extension workers is intended so that the government allocates them based on the ratio of the number of farmers in each village. In the study area there was only 1 (one) extension worker on duty for 5 (five) villages with a total of 268 farmer group members and an arable land area of 547 ha. The balanced ratio should be 2 people per village (547 ha/268 farmers = 2 extension workers).
5. **Increased Access To Financial Institutions**; Farmers can progress if they know and partner with financial institutions, both bank and non-bank financial institutions such as cooperatives. This is possible for farmers to do if the farmer's orientation changes from farming to agribusiness orientation, by trying to apply technology in the hope of increasing production, even though farmers have not been able to increase the business scale of the average 2 ha received from the government since the beginning of the transmigration. Bank orientation in facilitating People's Business Credit (KUR) is to minimize the role of the ijon, because soybean farming is feasible to be financed by bank.

Production Cost Analysis and Technology Application

Based on the results of the analysis above, it can be explained that the use of production input costs is not efficient, if you look at the costs, especially variable costs that are directly correlated with efforts to increase production, especially labor costs. According to Tahir et al. (2010) and Septiadi et al. (2020) explained efficiency can be achieved by reducing labor with the aim of increasing farmer income. On the other hand, increased income must be supported by the application of maximum cultivation technology, especially in controlling pests and diseases which are often a problem for farmers in general in the Dataran Bulan transmigration area. This is in accordance with the results of research conducted where the average farmer applies technology only 2 times, especially in controlling pests and diseases, namely at the time of planting and the growth period. The success of developing soybeans is not only influenced by the application of cultivation technology but also the government's political will by rationalizing the needs of farmers including the ratio of the need for extension workers in each center (Arsyad, 2006; Indiati and Marwoto, 2017; Nusantara et al. 2022).

Marketing Analysis, Prices and Increased Income of Soybean Farmers

Post-harvest is a very decisive thing for farmers, especially the price and choice of marketing agency. The previous discussion shows that the majority of farmers in the study area choose to sell their soybeans to collectors in the village or to traders who deliberately come to the area during or before the harvest. Apart from that, the practice of ijon is still dominant, as a result the price is determined by the ijon. However, farmers still enjoy benefits, as evidenced by the R/C ratio of 1.55. This is different from the research results of Ainun et al. (2022) which stated that soybean farming in Takalar Regency has a high risk of production and income. Meanwhile, price risk is classified as low risk (in contrast to the Tojo Una-Una Regency area). Furthermore, marketing performance has a very positive influence on business performance (Suharyono et al. 2010).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Our finding reveals that (i) the average production level achieved by farmers is 1,077/ha/MT, and the productivity level is 1.08 Ha/MT, lower than the national average production (1.2 Ha/MT). Dominant marketing of soybeans is carried out at the village level and district level, where the collector traders at the district level go directly to farmers every harvest. The level of dependence on the Ijon system is still high, as evidenced by 70% of farmers bonded to bondage. The result also shows that (ii) the average production cost is IDR 5,556,808/ha/MT, and the average income farmers enjoy is IDR 3,059,192.00 obtaining an R/C ratio = 1.55 means that soybean farming is very feasible to develop.

Production and Marketing Strategies as an Effort (iii) to Reduce Dependence on the Ijon System and Increase the Income of Soybean Farmers in the Java-Sunda Transmigration Area of Dataran Bulan in Tojo Una-Una Regency, in quadrant I (S-O) and quadrant II (S-T), the strategy is formulated into 5 I namely: 1) Improvement of Facilities and Infrastructure (P1); 2) Increasing prices by reducing dependence on Ijon so that the bargaining position of farmers becomes stronger (P2); 3) Improvement of Cultivation Technology (P3); 4) Improvement of Capacity building and rationalization of the number of extension agents (P4); and 5) Increasing access to financial institutions (P5). What farmers must do to avoid being trapped in debt bondage is (a) they must be able to access and collaborate with banks through KUR (People's Business Credit) facilities, (b) increase productivity by utilizing soybean cultivation technology, (c) farmer groups must be able to avoid Ijon System with high-interest rates, and (d) The government carries out farmer empowerment and development programs through farmer cooperatives.

Recommendations

To increase production and income, farmers should optimize the application of technology, so that existing land productivity can be increased, and there is guarantee and certainty of soybean commodity prices through regulations and assistance that is programmed, sustainable and sustainable because the average farmer has low education, so Assistance is highly expected by farmers. To maintain the superior soybean commodity in Tojo Una-Una, the political will of the government is eagerly awaited by farmers, especially allocating projects to improve road facilities and infrastructure. So that with good road conditions, the costs of transportation and marketing of produce can be reduced, which in turn will improve the bargaining position of farmers (avoiding Ijon).

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