# RISK LEVEL ANALYSIS OF GREEN BEAN FARMING PRODUCTION IN THE TRANSMIGRATION AREA OF WEOE VILLAGE, WEWIKU SUBDISTRICT, MALAKA REGENCY

## (Analisis Tingkat Risiko Produksi Usaha Tanah Kacang Hijau Di Kawasan Transmigrasi Desa Weoe, Kecamatan Wewiku, Kabupaten Malaka)

By:
**Herson M. Hakko[1], Ida Nurwiana[2], Paulus Un[3]**
[1,2,3)]Agribusiness Study Program, Faculty of Agriculture, Universitas Nusa Cendana
e-mail: hersonmangngi@gmail.com

Received : 14th May , 2025 Accepted:19th May, 2025

## ABSTRACT

Mung bean farmers in the transmigration area of Weoe Village, Wewiku District, Malaka District are often faced with various obstacles that result in low production produced by farmers. Therefore, improvement efforts are needed at the farm level to encourage farmers to be more optimal in managing their farms. This research aims to: 1) identify the obstacles faced by green bean farming, 2) determine the income of green bean farmers, and 3) determine the level/magnitude of production risk and efforts to manage production risks of green bean farming in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka District. The survey method was used in this study, the data used were primary data and secondary data. The location of the study was in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka District which was determined purposively, based on the potential for developing production and the area of mung bean land. Samples were taken by simple random sampling of 60 respondents. The analysis method used variance analysis, standard defiation, and coefficient variation. The research results show that (1) The constraints faced by mung bean farmers in the Transmigration Area of Weoe Village include a lack of knowledge about proper mung bean cultivation, inadequate understanding of pest and disease control, weed management, and improper post-harvest handling, which results in low-quality seeds; (2) The farm income from mung bean cultivation amounts to IDR. 124.194.693 with an average income of IDR. 2.069.912 per farmer or IDR. 5.222.653 per hectare; (3) The level of production risk, seed risk, and labor risk in mung bean farming is high, while the risk of land area and pesticide is low. The risks associated with production, land area, seeds, pesticides, and labor in mung bean farming are relatively high. Efforts to mitigate production risks include maintaining soil conditions by clearing land and removing diseased plants, selecting high-quality or disease-resistant seeds, ensuring proper seedling management, taking good care of crops, and developing strong mental resilience to handle unexpected challenges, such as potential financial losses from farming activities.

**Keywords:** mung bean, production, risk

## ABSTRAK

Petani kacang hijau di wilayah transmigrasi Desa Weoe, Kecamatan Wewiku, Kabupaten Malaka seringkali dihadapkan dengan berbagai kendala yang mengakibatkan rendahnya produksi yang dihasilkan petani. Oleh karena itu, diperlukan upaya perbaikan di tingkat petani untuk mendorong petani agar lebih optimal dalam mengelola usahataninya. Penelitian ini bertujuan untuk: 1) mengidentifikasi kendala yang dihadapi usahatani kacang hijau, 2) mengetahui pendapatan petani kacang hijau, dan 3) mengetahui tingkat/besarnya risiko produksi dan upaya pengelolaan risiko produksi usahatani kacang hijau di Wilayah Transmigrasi Desa Weoe, Kecamatan Wewiku, Kabupaten Malaka. Metode survei digunakan dalam penelitian ini, data yang digunakan adalah data primer dan data sekunder. Lokasi penelitian berada di Kawasan Transmigrasi Desa Weoe, Kecamatan Wewiku, Kabupaten Malaka, yang ditentukan secara purposif berdasarkan potensi pengembangan produksi dan luas lahan kacang hijau. Sampel diambil secara acak sederhana sebanyak 60 responden. Metode analisis yang digunakan adalah analisis variansi, deviasi standar, dan koefisien variasi. Hasil penelitian menunjukkan bahwa (1) Kendala yang dihadapi petani kacang hijau di Daerah Transmigrasi Desa Weoe antara lain kurangnya pengetahuan tentang budidaya kacang hijau yang benar, pemahaman yang kurang tentang pengendalian hama dan penyakit, pengelolaan gulma, dan penanganan pasca panen yang kurang tepat sehingga menghasilkan benih berkualitas rendah;

(2) Pendapatan usahatani dari budidaya kacang hijau sebesar Rp. 124.194.693 dengan rata-rata pendapatan Rp. 2.069.912 per petani atau Rp. 5.222.653 per hektar; (3) Tingkat risiko produksi, risiko benih, dan risiko tenaga kerja pada usahatani kacang hijau tergolong tinggi, sedangkan risiko luas lahan dan pestisida tergolong rendah. Risiko yang terkait dengan produksi, luas lahan, benih, pestisida, dan tenaga kerja dalam budidaya kacang hijau relatif tinggi. Upaya mitigasi risiko produksi meliputi menjaga kondisi tanah dengan membersihkan lahan dan membuang tanaman yang sakit, memilih benih berkualitas tinggi atau tahan penyakit, memastikan pengelolaan bibit yang tepat, merawat tanaman dengan baik, dan membangun ketahanan mental yang kuat untuk menghadapi tantangan tak terduga, seperti potensi kerugian finansial dari kegiatan pertanian.

Kata kunci: kacang hijau, produksi, risiko

## INTRODUCTION

Indonesia is a developing country, with the majority of its population relying on the agricultural sector as a primary source of livelihood. This is supported by adequate natural resources. In fact, a large portion of land in Indonesia is used for agriculture, and employment in this sector has shown positive growth, with the agricultural labor force reaching 29.96%, or approximately 1.86 million people per year (Badan Pusat Statistik, 2022).

Government policy in agricultural development emphasizes the selection of commodities with better productivity prospects for farmers. One such commodity is green beans (Vigna radiata L.), a legume important for food supply, with high nutritional value, good taste, and the potential for various processed products (Ritan, 2018).

Green beans are considered a strategic commodity due to their drought resistance and short harvest period (55–60 days). Their strategic value lies in their ability to serve as a crop backup in case of failed harvests of previous crops like rice and corn during dry seasons. However, according to Harahap et al. (2013), the advantages of green beans are not matched by proper cultivation practices by farmers, resulting in relatively low productivity per hectare, despite high demand. Another competitive advantage is their relatively stable price, often higher than other legumes (Rusdi, 2019). Green beans have been traditionally cultivated by farmers in Wewiku Subdistrict, Malaka Regency.

Wewiku Subdistrict is a key production center for green beans in Malaka Regency. The crop is relatively easy to cultivate because it can be planted year-round and has a short harvest period. Weoe Village in Wewiku is one of the areas with potential for developing green bean farming. However, like other agricultural activities, green bean production faces various risks that can affect production success.

Green bean production by farmers has fluctuated, partly due to reduced planting areas and farmers' perception that green beans are less profitable as a main crop. These factors indirectly affect production decline (Hakim et al., 2021). Another factor contributing to reduced productivity is farmers' low understanding of production inputs, resulting in poor allocation of seeds, fertilizers, and pesticides.

The low productivity of green beans in Weoe Village affects farmers' income, which generally depends on production volume, selling price, and production costs. According to Hanggraeni (2010), agricultural production carries higher risks compared to non-agricultural enterprises because it is strongly influenced by natural factors such as climate, pests, and diseases, as well as the perishable nature of crops. In addition, agricultural risks include marketing and price fluctuations, as farmers cannot control market prices, and agricultural product prices are more volatile.

In 2019, green bean production in Wewiku Subdistrict covered 563 hectares, with a productivity of 0.86 tons/ha, resulting in 489 tons of production. In 2020, the planting area decreased to 344 hectares, productivity rose slightly to 0.90 tons/ha, but production fell to 310 tons. In 2021, with a planting area of 560 hectares, productivity declined to 0.48 tons/ha, producing only 270 tons. In other words, green

bean production in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency, declined over the three-year period (2019–2021), causing price fluctuations.

At the beginning of the harvest season, green bean prices ranged from IDR 10,000–15,000 per kg, gradually increasing from December to April to IDR 20,000–25,000 per kg in local markets. Price movements are influenced by factors such as planting and harvest seasons, market supply, and demand. During peak harvest, oversupply can lower prices, while low productivity periods can increase prices due to limited availability. Local or regional demand fluctuations also impact prices. Additionally, production costs—such as for fertilizers, pesticides, and labor—can drive price changes. Prices of alternative crops, such as other legumes or staple foods, may also affect green bean prices. Continuous monitoring of market conditions can help farmers respond effectively to price changes and manage production costs efficiently.

Nationally, green bean productivity reaches 1.2 tons/ha, with experimental potential up to 1.6 tons/ha (Aziz & Bakar, 2015 in Salli, 2021). In Wewiku Subdistrict, low productivity is linked to challenges such as declining yields, rising labor wages, and increased costs of seeds, fertilizers, and pesticides each year. Price uncertainty also affects farmers' decisions regarding optimal crop maintenance. This leads to production instability, as not all farmers are willing or able to incur high costs for optimal crop care, especially when revenue cannot cover expenses.

Addressing these challenges requires improvements at the farm level and price stability. This will help ensure increased income and profits for green bean farmers and encourage more intensive farm management. These issues are particularly serious for green bean farmers in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency. Being a relatively new area, the problems are suspected to arise from several risk factors, including land size, seed quality, climate, pests and diseases, prolonged dry seasons, and farmers' limited knowledge of good cultivation techniques.

This study focuses on constraints in green bean farming, farmers' income, and the level and management of production risks in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency. Based on the background described above, the study aims to: 1) Identify the constraints faced by green bean farmers in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency, 2) Analyze the income of green bean farmers in the area, and 3) Assess the level of production risk and evaluate risk management efforts in green bean farming in Weoe Village, Wewiku Subdistrict, Malaka Regency.

## RESEARCH METHODOLOGY

### Sampling Method

The sample was taken in stages. The first stage involved selecting the research location intentionally (purposive sampling), which was in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency. This location was chosen because it is a key area for green bean cultivation development, ranks first in harvest area size in Malaka Regency, and is part of the Green Bean Planting Program (TKH).

The second stage involved selecting farmer respondents using simple random sampling, meaning that members of the sample were chosen randomly from the population without considering any population strata (Sugiyono, 2012). The sample consisted of green bean farmers who are members of farmer groups in Weoe Village. Out of 14 farmer groups, 3 groups were sampled, with each group having a different number of members. From each group, 20 farmers were randomly selected (unproportional random sampling), resulting in a total of 60 farmer respondents.

### Types and Sources of Data

The types of data in this study include qualitative and quantitative data, sourced from primary and secondary data. Qualitative data refers to descriptive information or narratives in words that explain the issues under study. Quantitative data, on the other hand, is numerical data related to the research problems (Sugiyono, 2012). The data were obtained from two sources: Primary data, which are data obtained directly from field research, and secondary data, which are data obtained from books, journals, and other relevant documentation related to this study.

**Data Collection Techniques**

The techniques used in this study include observation, interviews, and documentation studies. Observation requires the researcher to watch what people do, listen to what they say, and participate in their activities. To obtain valid data, the researcher must directly observe the field situation and actively participate in the interview process. Interviews involve face-to-face interpersonal interaction where the interviewer asks structured questions to obtain relevant answers from farmer respondents (Amiruddin & Asikin, 2014). This aligns with Meolog's definition in Sugiyono (2012), which states that an interview is a conversation aimed at obtaining information. Documentation studies are used to gain a deeper understanding of the issues under investigation. This method involves collecting documents related to the research problem. According to Faisal (1982) in Sugiyono (2012), documentation as a data source includes all secondary records such as letters, notes, speeches, diaries, photographs, clippings, newspaper articles, research results, and records of activities.

**Data Analysis Methods**

1. First objective: To identify the constraints faced by green bean farmers in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency, descriptive analysis was employed.
2. Second objective: To determine the income of green bean farmers in the area, analysis was conducted using formulas for total cost, revenue, and income.
3. Third objective: To assess the level and magnitude of production risk faced by green bean farmers, the study used variance analysis, standard deviation, and coefficient of variation.

## RESULTS AND DISCUSSION

**Constraints Faced by Farmers in Green Bean Farming**

The food security program implemented through increased food production in Weoe Village, Wewiku Subdistrict, includes green beans as one of its key commodities. The varieties used in Weoe Village are Vima 1 and local varieties. Other crops cultivated in the area include corn, rice, and cassava.

Green beans are one of the legume commodities that hold significant value for the local community, both in terms of economic value and nutritional content. The objective of green bean farming is not only for personal consumption but also for donations, seeds, and sale, to generate income and profit. The magnitude of profit from farming depends heavily on the efficiency of resource use. When farmers optimize input use, they can minimize production costs and maximize profits.

Green bean farming is thus considered a vital livelihood activity. However, based on field observations and interviews, several constraints were identified in the cultivation and development process of this commodity. These constraints include the following:

**Planting Constraints**

Green bean planting in Weoe Village is generally done in December and January, using simple methods such as making planting holes with a dibble stick. The holes are typically 2–3 cm deep, depending on the tool used, and spacing is irregular, as farmers do not follow the recommended spacing of ± 40 cm x 10 cm or 20 cm x 20 cm, instead planting 2–3 seeds per hole. The improper planting pattern and spacing increase the risk of production failure. In some cases, farmers simply

broadcast the seeds to save on labor. Irregular spacing leads to overcrowded plants, making weeding more difficult. According to Ahmad et al. (2004), planting distances that are too close can cause leaf shading, limiting light exposure and adversely affecting plant growth and production.

**Weed Infestation**

Weeds are undesirable plants that compete with cultivated green beans for nutrients, water, and sunlight, ultimately disrupting plant growth. The competition between weeds and green beans reflects the natural interaction between plant species competing for limited resources, which can reduce yield quantity and quality. This increases the risk of production loss. Zimdhal (2007), as cited in Irwansyah (2024), also emphasized that weeds can lower the yield of green beans through competition for nutrients, sunlight, water, $CO_2$, and space. Weed competition, especially in the early stages of plant growth, can significantly harm development and yield.

**Pest and Disease Attacks**

One of the common challenges faced by green bean farmers is pest attacks. Green beans are vulnerable to numerous pests and diseases caused by fungi, bacteria, viruses, and other pathogens. A major pest identified in this study is thrips. Thrips attacks can inhibit plant growth, cause flower drop, and reduce yields. A common symptom is wrinkled or curled leaves, often mistaken for viral infection. Lawalata (2017), in Bawarta et al. (2022), found that pest attacks and unpredictable weather significantly influence production risks, with a significance level of 0.000. Heavy rainfall can also damage crops, causing plants to collapse, making them easy targets for rodents. Additionally, free-roaming livestock such as chickens from nearby homes often consume green beans, compounding the farmers' losses.

**Post-Harvest Constraints**

One of the post-harvest problems is improper storage due to inadequate facilities, leading to a shortage of quality seeds when the next planting season arrives. Seed quality plays a crucial role in minimizing production risk. Seeds that are stored improperly or for too long tend to lose viability, resulting in poor crop establishment.

To prevent this, proper storage facilities or extension services are needed to train farmers on proper seed storage techniques. According to Pasaribu (2018), maintaining seed quality requires an environment suitable for seed preservation. Agus, as cited in Pasaribu (2018), stated that green bean seeds should ideally be stored in warehouses to maintain both quality and quantity.

Additionally, drying and shelling pose further challenges. Green beans have high moisture content, requiring longer drying times. The tough seed coat also makes manual shelling difficult and time-consuming. Providing mechanical shellers would reduce this burden. The local government should ideally facilitate access to such tools—grant applications could be submitted to relevant authorities to obtain these facilities.

**Use of Production Inputs in Green Bean Farming**

**Land Area**

The size of the land used for green bean farming activities naturally affects the level of production obtained, provided it is managed properly. The larger the land area, the more time and effort is required, and the higher the expected production. The total land cultivated is 23.78 hectares, with an average landholding of 0.40 hectares per farmer.

**Production Costs**

Production costs refer to the expenses incurred by farmers, expressed in Indonesian Rupiah. The production costs in green bean farming in Weoe Village consist of fixed costs and variable costs, detailed as follows:

**1. Fixed Costs**

Fixed costs are costs that remain unchanged and do not depend on the level of production. In this study, the fixed costs for green bean farming include land tax and equipment depreciation. The total fixed costs incurred by farmers in green bean farming in Weoe Village in 2023 amounted to IDR

6,724,450, with an average of IDR 112,074 per farmer and IDR 282,778 per hectare. The breakdown is as follows:

**a. Land Tax**

Land tax is a levy on land and buildings imposed due to the benefits or socioeconomic status gained by individuals or entities holding rights over them. The total land tax paid by green bean farmers in Weoe Village was IDR 734,850, averaging IDR 12,247 per farmer and IDR 30,902 per hectare.

**b. Equipment Depreciation**

Depreciation is the process of calculating the value of assets over their useful life. Depreciation costs are incurred by farmers for the purchase of farming tools, including:

1. **Hoe Depreciation**
    - Total: IDR 405,600 (92 units)
    - Average: IDR 6,760
    - Per hectare: IDR 17,056
2. **Machete Depreciation**
    - Total: IDR 1,112,000 (104 units)
    - Average: IDR 18,533
    - Per hectare: IDR 46,762
3. **Sack Depreciation**
    - Total: IDR 713,000 (1,193 units)
    - Average: IDR 11,883
    - Per hectare: IDR 29,983
4. **Planting Stick (Tajak) Depreciation**
    - Total: IDR 464,000 (171 units)
    - Average: IDR 7,733
    - Per hectare: IDR 19,512
5. **Rope Depreciation**
    - Total: IDR 1,845,000 (64 units)
    - Average: IDR 30,750
    - Per hectare: IDR 77,586
6. **Hand Sprayer Depreciation**
    - Total: IDR 830,000 (61 units)
    - Average: IDR 13,833
    - Per hectare: IDR 34,903
7. **Sickle Depreciation**
    - Total: IDR 620,000 (62 units)
    - Average: IDR 10,333
    - Per hectare: IDR 26,072
    -

**2. Variable Costs**

Variable costs are those that vary depending on the level of production. The variable costs incurred by green bean farmers in Weoe Village include labor, seeds, and pesticides. The total variable cost is IDR 66,680,857, with a total land area of 23.78 hectares and 60 farmer respondents. The breakdown is as follows:

**1) Labor Costs**

Labor costs are the expenses incurred by farmers to hire others to help with farming activities. The total labor cost incurred by green bean farmers in Weoe Village is IDR 54,266,857 for 6,438 laborers working across 23.78 hectares. Laborers work 7 hours per day. Family labor usage averages 26.69 person-days per farmer or 67.34 person-days per hectare. Hired labor usage averages 16.95 person-days per farmer or 42.77 person-days per hectare.

These numbers exceed the recommended labor input for intensive green bean farming, which is 40 person-days per hectare (Ministry of Agriculture, 2017). Excessive labor input may reduce profitability due to overutilization compared to land managed.

- Average labor cost per farmer: IDR 904,448
- Per hectare: IDR 2,282,038

**2) Seed Costs**

Seed costs refer to the expenses for green bean seeds. The total seed cost incurred by farmers is IDR 3,995,000 for 23.78 hectares.

- Average seed cost: IDR 66,583 for 4.07 kg
- Per hectare: IDR 167,998 for 10.26 kg
- Total seeds used: 244 kg

The seed usage per hectare (10.26 kg) is considered low, potentially increasing the risk of low productivity. According to Balitkabi (2018) in Faiz and Fauziyah (2021), the recommended seed requirement is 20 kg/ha. Therefore, seed use in the study area can be increased to improve yields, even if farmers are not yet using superior varieties.

**3) Pesticide Costs**

Pesticide costs are incurred for purchasing pest control substances. Most farmers in Weoe Village use liquid pesticides.

- Total pesticide cost per season: IDR 8,419,000 (23.78 ha)
- Average pesticide cost: IDR 140,317 for 1.41 liters
- Per hectare: IDR 354,037 for 3.57 liters
- Total pesticide volume used: 85 liters

Based on the Ministry of Agriculture (2017), the recommended usage is 2–3 ml/liter of water, with a spraying volume of 5,000 liters/ha. Thus, the pesticide use in this study is considered insufficient, potentially increasing the risk of production losses.

**Green Bean Farming Output**

The total production obtained by the 60 farmer respondents in Weoe Village was 20,800 kg, with an average yield of 347 kg per farmer and 875 kg per hectare.

**Revenue**

Revenue is the monetary value received by farmers from selling their farm products. Revenue is calculated by multiplying the quantity of production by the selling price.

- Total revenue for one production cycle: IDR 197,600,000
- Average revenue per farmer: IDR 3,293,333
- Per hectare: IDR 8,309,504

**Income**

Income is an important indicator of community welfare, reflecting economic progress. Pangadaheng (2012) defines income as revenue minus the costs incurred for farming activities.

- Total income for one production cycle: IDR 124,194,693
- Average income per farmer: IDR 2,069,912
- Per hectare: IDR 5,222,653

This finding differs from a study by Wulandari et al. (2021), where green bean farmers in Gunung Sari Village earned a total income of IDR 244,738,000, with an average income per farmer of IDR 6,118,450 or IDR 15,476,250 per hectare. These results are lower than the income reported in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency. This discrepancy is likely due to other variables not examined in this study, such as soil fertility, fertilizer usage, pesticide types, and more.

**Analysis of Production Risk Levels in Mung Bean Farming**

Mung bean farming in Weoe Village faces various levels of production risk that present challenges for farmers. Therefore, these production risks need to be analyzed using variance, standard deviation, and coefficient of variation (CV). According to Fauziah (2016), the decision criteria are:

If CV < 0.5 = Low risk

If CV > 0.5 = High risk

a) Production Risk Level

The production risk level of mung beans in the Transmigration Area of Weoe Village, Wewiku Subdistrict, Malaka Regency is categorized as high, with a variance of 43,423.16667 and a standard deviation of 208.3822609. The coefficient of variation, obtained by dividing the standard deviation by the average production, is 0.60. Since this is greater than 0.5, it indicates that the production risk level is high.

b) Land Area Risk Level

The land area risk level for mung bean farming in the Transmigration Area of Weoe Village is low, with a variance of 0.1128 and a standard deviation of 0.3359. The coefficient of variation, obtained by dividing the standard deviation by the average land area, is 0.28. Since this is less than 0.5, it indicates a low risk level related to land area in mung bean production.

The larger the area being cultivated, the higher the potential farming risks. Large plots require more human resources to manage effectively. Inefficient supervision may lead to increased production risks.

c) Seed Risk Level

The seed risk level in mung bean farming in the Transmigration Area of Weoe Village is still considered high, with a variance of 8.3289 and a standard deviation of 2.8860. The coefficient of variation, calculated by dividing the standard deviation by the average amount of seed used, is 0.71. Since this exceeds 0.5, it indicates a high seed risk.

Seeds are one of the key inputs in mung bean production, as their quantity significantly affects the final yield. The recommended seed amount per hectare is 25 kg, while research shows that farmers in Weoe Village use only 10.26 kg per hectare—which is far below the recommended amount. This contributes to increased risk in mung bean farming. According to Balitkabi (2018) in Faiz and Fauziah (2021), the recommended seed amount is 20 kg per hectare.

d) Pesticide Risk Level

The pesticide risk level in the Transmigration Area of Weoe Village is categorized as low, with a variance of 0.309766667 and a standard deviation of 0.556566857. The coefficient of variation, calculated by dividing the standard deviation by the average amount of pesticide used, is 0.39. Since this is less than 0.5, it indicates a low level of pesticide risk in mung bean production.

Pesticides are essential to prevent and control pests, diseases, and weeds in crop areas. For high yields, crops must be free from various types of weeds and other disturbances. The study found that most farmers do not use pesticides, leading to poor crop maintenance and consequently, low mung bean yields. According to the Ministry of Agriculture of the Republic of Indonesia (2017), the recommended dosage is 2–3 ml/liter of water with a spray volume of 5,000 liters per hectare. In contrast, pesticide usage in the study area was only 3.57 liters per hectare, which is still insufficient and may contribute to lower yields. However, the overall pesticide risk is considered low.

e) Labor Risk Level

The labor risk level in the Transmigration Area of Weoe Village is categorized as high, with a variance of 35.9106 and a standard deviation of 5.9925. The coefficient of variation, obtained by dividing the standard deviation by the average labor input, is 3.47, which is greater than 0.5, indicating a high labor risk level in mung bean production.

There are 6,438 laborers working on a total cultivated area of 23.78 hectares. These laborers work 7 hours per day. In mung bean farming, family labor is used for 26.69 workdays per farmer or 67.34 workdays per hectare, while non-family labor is used for an average of 16.95 workdays per farmer or 42.77 workdays per hectare. Therefore, labor use in this study is higher than the recommended figure from the Ministry of Agriculture of the Republic of Indonesia (2017), which is 40 workdays per hectare. This indicates that the use of labor is excessive and poses a high risk.

**Production Risk Management Efforts in Mung Bean Farming**

Proper management of production risks in mung bean farming can help farmers maximize their farming activities and obtain better profits. Based on interviews and field observations, the following are efforts made by farmers (respondents) to manage production risks in mung bean farming:

- Paying attention to soil conditions, by clearing the land and removing crops infected by pests or diseases to prevent their spread.
- Selecting quality seeds, preferably disease-resistant varieties, and conducting proper seeding practices.
- Maintaining crops, such as removing weeds, applying chemical substances at recommended dosages, and performing routine maintenance.
- Mental preparation: Before starting or continuing mung bean cultivation in the Transmigration Area of Weoe Village, it is crucial for farmers to be mentally prepared to deal with unforeseen circumstances or events beyond their control—such as potential losses from the farming

activities. This mental readiness is essential for facing the realities of mung bean farming in the research area.

The mung bean production yield in the Transmigration Area of Weoe Village is 875 kg per hectare.

## CONCLUSION AND RECOMENDATION

### Conclusion

Based on the discussion presented earlier, the following conclusions can be drawn:

1. The constraints faced by mung bean farmers in Weoe Village include a lack of adequate knowledge about proper mung bean cultivation methods, which results in poor planting patterns, insufficient understanding of how to control pests, diseases, and weeds, as well as improper post-harvest handling methods that affect the quality of seeds or planting material.
2. The total income of mung bean farmers in Weoe Village is IDR 124,194,693, with an average of IDR 2,069,912 per farmer or IDR 5,222,653 per hectare.
3. The levels of production risk, seed risk, and labor risk in mung bean farming in Weoe Village are considered high, while the land area risk and pesticide risk are considered low.

The efforts made by farmers to overcome production risks include observing soil conditions, selecting seeds or using disease-resistant varieties, proper seeding practices, plant maintenance, and mental preparedness to deal with unexpected situations, such as potential losses that commonly arise in agricultural activities.

### Recomendation

Based on the conclusions above, the following suggestions are offered from the results of this study:

1. For local government: It is recommended to carry out agricultural extension services for mung bean farmers in the research area to improve their knowledge of mung bean cultivation.
2. For mung bean farmers: It is necessary to further optimize the use of production inputs in order to improve mung bean farm productivity and maximize the resulting income.
3. For future researchers: It is recommended to include additional variables beyond those used in this study when conducting similar research.

## REFERENCES


Andayani, S. A. 2018. *Faktor-Faktor yang Mempengaruhi Produksi Cabai Merah.* Mimbar Agribisnis: Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis.

Badan Pusat Statistik. 2022. *Jumlah Angkatan Kerja di Indonesia.* Jakarta Pusat

Bawarta, I. G. A. A., Yasa, I. M. W., & Arisena, G. M. K. 2022. *Analisis Risiko Produksi Usahatani Bawang Merah.* Benchmark, 3(1), 33-42.

Della, Ken. 2006. *Pengaruh Pengolahan Faktor Internal Usahatani terhadap Produktivitas Lada.* Balai Pengkajian Teknologi Pertanian

Faiz, A. W., & Fauziah, E. 2021. *Efisiensi Ekonomi Usahatani Kacang Hijau di Desa Tanjungharjo Kecamatan Kapas Kabupaten Bojonegoro.* AGRISCIENCE, 1(3), 573-585.

Fauziah, M. 2016. *Pendapatan Risiko dan Efisiensi Ekonomi Usahatani Bawang Merah di Kabupaten Bantul.* Jurnal AGRARIS, 2 (2) :107-117. https://doi.org/10.18196/agr.2231

Ghozali, M. R., & Wibowo, R. 2019. *Analisis Risiko Produksi Usahatani Bawang Merah di Desa Petak Kecamatan Bagor Kabupaten Nganjuk.* Jurnal Ekonomi Pertanian Dan Agribisnis, 3(2), 294-310

Hakim, L dan Suyamto. 2012. *Korelasi Antar-Karakter Dan Sidik Lintas Antara Komponen Hasil Dengan Hasil Biji Kacang Hijau (Vigna Radiata (L) Wilczek).* Berita Biologi

Harahap, F.D.S., Yetti dan A. Husna. 2013. *Alternatif Budidaya Tanaman Kacang Hijau (Phaseolus radiautus L.) Secara Organik.* JOM Faperta UR. (5) 1–12.

Irwansyah, D. 2024. *Periode Kritis Tanaman Kacang Hijau Terhadap Kompetisi Dengan Gulma (Doctoral Dissertation, Universitas Malikussaleh).*

Kusumawardhan. 2002. *Analisis Determinan Pendapatan Berfaktor Resiko Pada Usahatani Kentang di Desa Masalle kecamatan Masalle Kabupaten Enrekang.* Skripsi. Fakultas Pertanian. Universitas Muhammadiyah, Makassar

Pasaribu, S. 2018. *Uji Efektivitas Biopestisida Daun Gamal Terhadap Callosobruchus Chinensis L. Pada Penyimpanan Benih Kacang Hijau.* Skripsi Thesis, Universitas Mercu Buana Yogyakarta.

Ritan, M.P.L., K. Fidelis dan N.P.L. Alfetri. 2018. *Pendapatan dan Faktor-Faktor yang Mempengaruhi Produksi Usahatani Kacang Hijau di Desa Nunkurus Kecamatan Kupang Timur Kabupaten Kupang.* Jurnal Media Komunikasi Agribisnis, 7(2). 134-139

Rosyidi. 2006. *Pengantar Teori Ekonomi.* Jakarta: PT. Raja Grafindo Persada.

Rusdi. 2019. *Analisis Kelayakan Usahatani Kacang Hijau Lahan Kering di Desa Bonto Ujung Kecamatan Tarowang Kabupaten Jeneponto.* Skripsi. Fakultas Pertanian, Univeristas Muhammadiyah Makassar

Salli, M. K., Lewar, Y., & Masria, M. 2021. *Kajian Intersepsi Cahaya Matahari Terhadap Pertumbuhan Tanaman Kacang Hijau (Phaseolus radiata L.) Varietas Lokal Sabu Pada Jarak Tanam Dan Pupuk Cair Yang Berbeda.* Partner, 26(1), 1512-1521

Soekartawi. 2002. *Analisis Usahatani. Universitas Indonesia.* Jakarta

Sugiyono. 2012. *Memahami Metode Penelitian Kuantitatif dan Kualitatif.* Bandung: Alfabeta