
The Economic Value of Onion Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency

M. Yusuf¹, Muhammad Nursan², Tajidan Tajidan³, Muji Rahayu⁴

^{1,2,3} Agribusiness Study Program, Faculty of Agriculture, Mataram University

⁴Researcher at the National Research and Innovation Agency (BRIN)

ABSTRACT : The research aims to: (1) Analyze the economic value of land (*land rent*) for shallot farming, both as land rent and economic surplus; (2) Analyze the costs and income of shallot farming in Lambu District, Bima Regency, NTB; and (3) Knowing farmers' perceptions of shallot farming activities. The research method is an exploratory-descriptive *research method*. This research was conducted in 2 (two) locations which are centers for the development of superior shallot commodities in Lambu District, Bima Regency, NTB, namely: Rasabou Village and Lambu Village. The number of samples at each location was 15 farmer households. Data were analyzed descriptively. The results show that: (1) The economic value of land as an economic surplus (*land rent* or *economic rent* or reaches) IDR 80,510,400/ha (94.45% comes from the economic surplus of dry season shallots); while the rental price (*contact rent*) is IDR 20,00,000 (66.25% is the dry season rental value); (2). The average production cost for red onion farming is IDR 87,582,200, while the production value reaches IDR 150,375,000, - resulting in a profit of IDR 62,792,800/ha; (3) The high profits and large absorption of labor in shallot farming have resulted in the emergence/judgment of farmers and farm workers that dry season farming (shallots) is more important than the rainy season (rice or other crops).

KEYWORDS: Economic value of land, shallots, farming activities

INTRODUCTION

The strategic environment that continues to change all the time has an impact on fundamental changes in agricultural development. This change can be seen that in the past it was oriented towards production, now it is oriented towards productivity, efficiency, quality and added value. Therefore, regional development and development strategies, especially for production processes, should be oriented towards commodities that have comparative advantages. In addition, so that the goods/services produced have a high demand response and have considerable added value, the goods/services developed have high competitiveness both in local, regional, national and international markets (Bafadal, 2016).

Vegetables are a commodity that has a wide market, because this commodity is needed every day by all levels of society, both lower and upper levels of society. Therefore, as the population increases, the demand for vegetables increases. There is a tendency, as the population's income increases, the demand for vegetables increases (Anggiasari, 2016; Setiawan, 1994).

Public awareness of the importance of vegetables for fulfilling nutrition and health also causes demand for vegetables to increase every year. In fact, recently there has been a tendency in society to replace or reduce consumption of high-fat foods, especially those from animal ingredients, by switching to vegetable ingredients. One indication is vegetarianism (Nurasa and Darwis 2007; Sunarjono, H. 1997). This trend is easy to understand, because vegetables play an important role as a balance in providing *dietary* fiber, rich in various proteins, vitamins, minerals and energy which are much needed by the human body (Aditianti, 2016; Santoso, 2011).

One type of vegetable that can be developed for nutritional fulfillment and business orientation is shallots (*Allium cepa*). Shallots are a type of vegetable that has quite an important meaning, because more than 75% of types of cooking use shallots as a cooking spice, apart from that, it is also used as an ingredient in medicines and so on, and has quite high economic value. Apart from that, shallots are one of the strategic commodities in Indonesia. This is because changes in shallot prices can affect inflation (Asmara and Ardhiani 2010; Ministry of Agriculture, 2022; Valentina Theresia, *et al.*, 2016).

Red onion production centers in Indonesia include: Wates, Tegal, Madiun, Brebes, Cirebon and West Nusa Tenggara. Red onion production in Indonesia over the last five years has increased from 1,470,155 tonnes in 2017 to 1,503,436 tonnes in 2018, increasing again to 1,580,243 tonnes in 2019. Meanwhile in 2020 and 2021 it has increased quite significantly to again to 1,815,445 tons and 2,004,590 tons, with an average production of 9.76 tons/ha (Anonymous, 2022a)

The Economic Value of Onion Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency

West Nusa Tenggara (NTB) is one of the shallot production centers outside Java whose production continues to increase every year. This can be seen from the significant increase in production from 195,458 tons in 2017 to 212,885 tons in 2018. Meanwhile in 2019 it decreased to 188,255 tons, then increased again to 188,740 in 2020, and in 2021 there was a quite significant increase. to 222,620 tonnes. This increase was due to area expansion, and productivity also increased from 10.92 tons/ha in 2017 to 11.01 tons/ha in 2018, then increased again to 11.28 tons/ha in 2019. Meanwhile in In 2020, productivity decreased to 10.74 tons/ha, and increased again to 10.96 tons/ha in 2021 (BPS NTB, 2022 b).

Bima Regency is one of the districts in NTB Province which is known as a center for shallot development. This fact is supported by the Decree of the Regent of Bima in 2021 concerning superior and mainstay commodities, stating that shallots are one of the superior commodities of Bima Regency. The development of shallots in this area is highly relied upon to absorb labor while improving the economy of rural communities. It is said that because apart from being able to absorb a relatively large number of workers (farming is quite intensive), the development area tends to increase significantly. For example, red onion production in 2017 was 121,917 tons with a harvest area of 11,458 ha, then in 2018 it increased to 162,402 tons with a harvest area of 13,798 ha. In 2019 and 2020, shallot production in this region decreased by 147,549 tons and 136,293 tons respectively with a harvest area of 12,479 ha and 12,028 hectares. Meanwhile in 2021 it will increase again to 152,430 tons with a harvest area of 12,960 hectares. This increase indicates that the response of farmers to expand their planting area is very large. One of the reasons is the hope of making large profits. One of the sub-districts that has developed quite extensive shallot farming in Bima Regency is Lambu Sub-district with the harvest area in 2021 reaching 3,087 ha with a production of 36,824 tonnes (Anonymous, 2022c; Anonymous 2022d).

At the beginning of its development, not many farmers wanted to do the red onion commodity in Lambu District, Bima Regency, because its management required intensive handling and required relatively high costs compared to other commodities. Apart from that, the risk of farmer failure is quite high as a result of unfavorable price fluctuations. However, in further developments, with the Bima Regency government's policy determining this commodity to be a superior commodity and the growing demand from the public and food companies that need this commodity, this has caused farmers to have a higher *gaining position* so that they can increase the value of their revenues.

In efforts to foster and develop superior commodities that are cultivated in the dry season, this will affect the economic value of the land and the behavior of farming activities in the target community. This is related to the behavior of individuals and society in the social environment itself. Thus, research on " **The Economic Value of Shallot Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency, West Nusa Tenggara Province - Indonesia** " is very necessary.

The research aims to: (1) Analyze the economic value of land (*land rent*) for shallot farming, both as land rent and economic surplus; (2) Analyze the costs and income of shallot farming in Lambu District, Bima Regency, NTB; and (3) Knowing farmers' perceptions of shallot farming activities in the dry season or rice/other crop farming activities in the rainy season

RESEARCH METHODS

This research was designed as exploratory-descriptive research (Effendi, S. And Carving, 2014; Singarimbun, 1989). Data collection was carried out through direct interviews with respondents who were guided by a list of questions that had been prepared previously. Apart from that, to complete the information obtained from respondents, *in-depth interviews were also conducted* with key information and direct factual observations at all research locations (*grounded research*).

This research was conducted in 2 (two) locations which are centers for the development of superior shallot commodities in Lambu District, Bima Regency, NTB, namely: Rasabou Village and Lambu Village. The sample population in this study was all shallot farming households in the two sample locations. Determining the number of samples at each research location, the number of samples was set at 15 farmer households, so the total sample was 30 households. The types of data used in this research include quantitative data and qualitative data. Data sources include primary data and secondary data.

The variables measured in this research are: (1) Socio-economic characteristics of farmers and demographics of shallot farming households, including: age, education level, number of family members, experience in shallot farming, as well as other socio-economic characteristics; (2) Costs and income of shallot farming. The indicators are: the amount of costs and income obtained from shallot farming activities in one production process (Rp/ha); (3) The economic value of land as an economic surplus (economic rent) and as rent for land use (contract rent), both for the dry season (shallot farming) and the rainy season (rice farming, etc.) expressed in IDR/ha; and (4) Farmers' perceptions and assessments of dry season (onion) and rainy season farming activities (rice farming and others). Data were analyzed descriptively.

RESULTS AND DISCUSSION

Economic Value of Land

The research results show that the large economic value of land, either as rent (*contract rent*) or economic surplus (*land rent*); the dry season (onion farming activities) is much higher than the rainy season (rice farming) or other commodities). It is said that

The Economic Value of Onion Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency

because most of the economic value of the land comes from the dry season (shallot farming). In detail the economic value of the land is presented in Table 1 below.

Table 1. Economic Value of Land Detailed per Planting Season in Lambu District, Bima Regency, 2022

No.	Planting Season/Commodities	Economic Value of Land			
		Rent Contract		Economic Surplus	
		(Rp/ha)	(%)	(Rp/ha)	(%)
1.	Rainy Season (Paddy)	13,250,000	66.25	76,042,800	94.45
2.	Dry Season (Shallots)	6,750,000	33.75	4,467,600	5.55
Total 1 year		20,00,000	100.00	80,510,400	100.00

Source: Primary data processed

The amount of land rental value (*contract rent*) at the research location varies from one region to another depending on the location and type of land/fertility. The research results show that the land rental value/price (*contract rent*) ranges from IDR 6 million – IDR 16 million per hectare per year. This land can be planted/cultivated 2 – 3 times planting (MT) each year with a cropping pattern of secondary crops or rice – secondary crops – secondary crops. Meanwhile, farmers who cultivate shallots generally plant twice a year, namely rice (rainy season) and shallot planting (dry season). Meanwhile for shallot farming the dry season (6 months). The rental value/price ranges from IDR 9 million – IDR 20 million per hectare. The high land rental price (*contract rent*) for this dry season occurs as a result of the large expectations (expectations) of the level of profit that will be obtained from shallot farming activities. According to farmers, the expectation of a fairly high level of profit is reasonable and based on rational economic considerations; because normally the profit level of shallot farming is much higher than other crops. It is proven from the research results (Table 2) that the profits from shallot farming reach IDR 62,792,800 per ha. This finding is supported by the results of research by Anisa, *et al.*, (2023) which shows that the net profit of shallot farming in Bima Regency ranges from IDR 60 – IDR 65 million per hectare. Meanwhile, net profits from corn and peanut farming are respectively IDR 13.5 million and IDR 23.2 million for each hectare.

The economic value of shallot farming land as an economic surplus (*land rent*) reaches 3 (three) times the value of the price/rental price (*contract rent*). The size of this economic surplus, apart from depending on the fertility and location of the land concerned, is also influenced by the ability to manage farming. This large difference in economic value provides an economic incentive for farmers to develop shallot farming even though the farming costs and risk of failure are quite high. This is reflected in the area of shallot development which continues to increase from year to year; especially in the 2000s and peaked in 2018 with an area of 13,798 ha. Furthermore, after 2018, the area under development of shallots in Bima Regency tends to decrease. However, this commodity still dominates land use. For example, in 2022, of the 4,273.34 ha of available rice fields, 3,087 ha (72.24%) will be used for the development of shallots which are spread throughout almost the entire Lambu sub-district, Bima Regency.

In subsequent developments, the development of shallots will have impacts and implications both at the micro level for farmers and shallot farming itself as well as for other farming activities and the socio-economic life of the community as a whole. These impacts and implications include:

1. Competition in the use and rental of land for shallot development requires a relatively large area (± 0.25 ha for each farming unit); even though farmers' ownership is generally relatively small (not land-limited) so that to develop shallots they have to rent someone else's property. On the other hand. The number of developing farms is quite large with quite large development areas, so there is competition in land use and rental. This situation has implications for high land rental prices (*contract rent*) which will ultimately increase production costs. Apart from that, the high rental value of land for shallots can also result in a lack of motivation (disincentive) for farmers to cultivate other crops; because economically rationally it is more profitable to rent out land to plant shallots compared to cultivating rice, corn or other secondary crops. In terms of supply (*supply side*), this situation will certainly disrupt the continuity of production and availability of food stocks (especially in Lambu District, Bima Regency). However, from a macro perspective, income will be better considering that regional revenues will be greater.
2. Competition in the use of labor. The management of shallot farming is relatively intensive compared to other crops, so it requires quite a large workforce (an average of 385 HOK per ha). Apart from being relatively large in number, farmers need an outpouring of labor at relatively the same time so that competition occurs and obtains and uses labor. As a result, labor costs tend to increase, which ultimately affects the production costs. This situation certainly affects the availability and cost of labor for other farming activities and activities. Economically, this is quite good because it can open up quite extensive and significant employment opportunities, so from a macro perspective this will be able to stimulate the regional economy by increasing people's purchasing power.
3. Limited access to formal financial institutions/capital and the relatively large costs of onion farming encourage the growth and development of non-formal financial institutions (money transfers) in various types and forms of transactions.

The Economic Value of Onion Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency

- The relatively high profits obtained from farming and the large number of jobs available can increase the purchasing power and consumer behavior of society in general so that at a macro level this can trigger the development and growth of other economic sectors (*primary movers* of the regional economy). In other words, shallot farming can be said to be the economic basis of Lambu District and Bima Regency in general.
- Uncertainty and the risk of farming failure are quite high considering the many stages of activities that must be carried out at relatively large costs so that the element of speculation is quite high. In this case, if failure occurs, then: (a) to pay loans to money lenders, farmers are forced to sell the assets they own so that many change their status to become landless farmers (farm laborers); (b) if you are forced to be unable to pay, it often causes social and family relationships to become increasingly strained and disharmonious.
- The production orientation of shallot farming tends to be entirely commercial so that decision making is always based on rational economic considerations (including the use and wages of labor). This situation can trigger an increasingly waning sense of community and mutual cooperation in farming activities.

Analysis of Costs and Income of Shallot Farming

Analysis of the costs and income of shallot farming in Lambu District, Bima Regency is presented in Table 2 below.

Table 2. Cost and Income Analysis of Shallot Farming in Lambu District, Bima Regency in 2022

No.	Component Analysis	Average Value (Rp/ha)
1	Production cost	
	Variable Costs	
	Seeds/seedlings	34,800,000
	Fertilizer	2,525,000
	Drugs	7,640,000
	Labor	28,875,000
	Other costs	245,000
	Fixed cost	
	1). Tool shrinkage	230,500
	2). Land tax	16,700
	Total Production Costs (a+b)	74,332,200
2.	Economic Surplus (land rent) =(6-1)	76,042,800
3.	Land Rent (Contract Rent)	13,250,000
4.	Total farming costs (1+3)	87,582,200
5.	Production (Kg/ha)	10,025
6.	Production Value (Rp/ha)	150,375,000
7.	Farming Profits (6 – 4)	62,792,800

Source: Primary data processed

The largest component of production costs in shallot farming is seed costs (46.81%). The large component of production costs for seeds is due to the relatively large number of seeds, namely an average of 1.16 tons/ha, with a seed price of IDR 30,000/kg. This fact indicates that shallots are a plant that requires quite a lot of seeds compared to other plants such as rice which requires \pm 40-50 kg/ha of seeds, corn 12-15 kg/ha, and peanuts, 30 – 40 kg/ha. The second largest component of production costs after seeds is labor costs, which are 38.84% of total production costs. This large expenditure on labor is due to the fact that shallot plants require quite intensive management. Apart from the many activity stages, the use of labor for maintenance activities must be carried out continuously, from land preparation and processing, planting to harvest and post-harvest. As an illustration, processing land and making beds takes \pm 3-6 days, then weeding (3 – 5 days), planting (1-2 days), and watering are carried out continuously from the beginning of planting until just before harvest. The number of seed tubers needed is 1-1.2 tons/ha with medium tuber size (5-10 g) and 2-3 months old from harvest. The planting distance used is 20 cm x 15 cm. Meanwhile, watering is done once a day in the morning or evening from planting until the time of harvest. Fertilizer application includes basic fertilizer: 300 kg SP-36/ha, 60 kg KCl/ha and 320 kg NPK spread and mixed thoroughly with the soil, 7 days before planting. Follow-up fertilizer in the form of 180 kg Urea/ha, applied at 10-15 days after planting (DAT) and at 30-35 days after planting (DAT) is 160 kg Urea/ha. Weeding is done 2-3 times during one growing season, especially at 2 weeks after planting. Pest and plant disease control is carried out if there are indications of pest and disease attacks. Control is carried out chemically or manually. Harvesting is done after the shallot plants are 3 months old or if most (> 80%) of the plant leaves have fallen. The leaves (70-80%) are pale yellow, the tubers are fully formed

The Economic Value of Onion Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency

and compact, some of the tubers are visible on the soil surface, and the tubers are dark red/purplish red and have a distinctive smell. Post-harvest handling includes: drying: drying the tubers in the sun for 7-14 days, turning: every 2-3 days when the tuber weight loss reaches 25-40% with a water content of 80-84%. Consumable shallots are packaged in sacks measuring between 50-100 kg. All of this requires a relatively large workforce. The research results show that the number of workers needed for shallot farming, from land preparation to harvest and post-harvest) is an average of 385 HOK/ha, with a wage rate of IDR 75,000/HOK. Based on this amount of need, if the entire potential land area in Lambu District, Bima Regency (4,273.34 ha) is used for the development of shallot farming, then it is certain that there will be a shortage of workers so they will have to be brought in from outside Lambu District.

Other major expenses besides seeds and labor are the costs of purchasing medicines and fertilizer. The average costs incurred for purchasing medicines and fertilizers were IDR 7,640,000 (10.28%) and IDR 2,525,000 (3.40%) respectively. The large costs of purchasing medicines are due to the fact that shallot plants in this region are often attacked by pests and diseases, especially onion caterpillars/armyworms (*Spodoptera* spp) and *Phytophthora* sp. dieback, as well as *Alternaria* sp purple spot. This of course requires relatively large costs. Likewise for fertilizer, where onion plants need quite a lot of fertilizer, especially basic fertilizer SP36, NPK, KCl and urea. Other costs incurred by farmers include fuel costs for irrigation amounting to IDR 250,000/ha (0.34%)

Meanwhile, the smallest production costs are fixed costs in the form of equipment depreciation and land tax, namely IDR 247,200/ha (0.33%). Post-harvest handling does not require a lot of costs, namely. Along with intensive management, the production costs required for shallot farming activities are quite large compared to other farming businesses.

However, this does not dampen the interest of farmers in this region to develop it. This indicates that shallot plants have become a popular crop for farmers in Lambu District in particular and Bima District in general.

The average production of shallots in Lambu District, Bima Regency is 10,025 kg/ha, with an average price at the farmer level of IDR 15,000/kg, resulting in a production value of IDR 150,375,000/ha. After deducting production costs of IDR 87,582,200, the production value results in a profit of IDR 62,792,800 /ha/planting season. The high profits and large absorption of labor in shallot farming have resulted in the emergence/judgment of farmers and farm workers that dry season farming (shallots) is more important than rainy season farming (rice or other crops). The farmer's decision to develop shallot farming in this area is quite rational economically because it can provide quite high profits.

Farmers' Perceptions and Assessments of Red Onion Farming Activities in the Dry Season

The level of profit from onion farming is much higher compared to other crops, resulting in farmers competing to develop it. Often farmers only imagine high profits without considering the marketing aspects. This influences the mindset and perception of farmers and farm workers regarding farming activities in general. The research results show that among farmers and farm workers there has been a shift in perceptions regarding main farming activities. Initially, farmers and farm workers thought that the main activity of farming was planting rice during the rainy season. With the development of shallots which promise a much higher level of profit and a higher level of employment at higher costs, this assessment has changed. All respondents (100%) considered that cultivating shallots in the dry season was perceived as the main farming activity compared to cultivating rice or other commodities in the rainy season. The reason is, apart from being able to provide higher profits, its management is more intensive with relatively large labor and costs.

In line with this, farmers are more enthusiastic and look forward to the arrival of the dry season (for farming shallots) compared to the rainy season (for cultivating rice or other commodities). Moreover, farming rice and other commodities in the rainy season is considered a side activity and is done only to utilize the land, while waiting for the dry season to arrive.

In this regard, all respondents (100%) stated that the main source of household income that is relied upon to meet needs (especially non-food needs) is expected to come from shallot farming.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

Based on the results and discussion, the following conclusions can be drawn: (1) The economic value of the land used for shallot farming is mostly derived from the results of dry season shallot farming. The economic value of land (as an economic surplus (*land rent* or *economic rent* or reaches) IDR 80,510,400/ha (94.45% comes from the economic surplus of dry season shallots); while as a rental value/price (contact rent) it is IDR 20,00,000,- (66.25% is the dry season rental value); (2). The average production cost incurred for shallot farming is IDR 87,582,200, while the production value reaches IDR 150,375,000, - so obtained a profit of IDR 62,792,800/ha; (3) The high profits and large absorption of labor in shallot farming have resulted in the emergence of the opinion/judgment of farmers and farm workers that dry season farming (shallots) is more important than the rainy season (rice or crops). other).

SUGGESTION

Based on the results of the analysis and discussion above as well as findings in the field, it can be suggested that although the profit

The Economic Value of Onion Farming Land and Its Impact on Farming Activities in Lambu District, Bima Regency

level of shallot farming is relatively high compared to other commodities, farmers are expected to be able to manage financing (including land rental and labor costs) efficiently based on rational economic considerations. . Apart from that, to ensure certainty of marketing of their products, farmers should partner with companies.

REFERENCES

- 1) Aditianti, A., Prihatini, S., & Hermina, H. 2016. Individual Knowledge, Attitudes and Behavior Regarding Various Foods as One of the Indicators of Nutrition Aware Families (KADARZI). *Health Research Bulletin* : 44(2) 117-126.
- 2) Anggiasari, Made N, Indriani, Endaryanto Y, and Teguhet. 2016. Attitudes and Decision Making to Purchase Organic Vegetables by Consumers in Bandar Lampung City. *Jia*, 4(4), 391–397.
- 3) Anonymous, 2022a. *Agricultural Statistics 2022*. Center for Agricultural Data and Information Systems, Ministry of Agriculture, Republic of Indonesia. Jakarta.
- 4) Anonymous, 2022b. *West Nusa Tenggara in Figures 2022*. BPS, NTB. Mataram.
- 5) Anonymous, 2022c. *Bima Regency in Figures 2023*. BPS, NTB. Mataram.
- 6) Anonymous, 2022d. *Lambu Criticism in Figures 2022*. BPS, NTB. Mataram.
- 7) Asmara R, Ardhiani R. 2010. Market integration in the shallot marketing system. *AGRISE* 10(3): 164-176
- 8) Bafadal, Azhar. 2016 *Agricultural Base Sector Analysis for Regional Economic Development*. *Agriplus* 24(2): 34-45.
- 9) Effendi, S. And Carving. 2014. *MethodStudy Survey* . LP3S. Jakarta.
- 10) Ministry of Agriculture. 2022. *Information Book on Vegetables and Medicinal Plants*. Directorate General of Horticulture Directorate of Cultivation and Post-Harvest of Vegetables and Medicinal Plants.
- 11) Nurasa T , Darwis V. 2007. Analysis of Agriculture and Marketing Margin Performance of Red Onions in Brebes Regency . *Agrosia Act Journal* 10(1): 40-48.
- 12) Santoso, A. (2011). Dietary Fiber and its Benefits for Health . *Magistra Journal*, 23(75), 35-40.
- 13) Setiawan. AI 1994. *High Level Vegetables*. Self-help distributor. Jakarta
- 14) Singarimbun, M. Sofian Effendi. 1989 . *Method. Survey Research*. LP3ES, Jakarta .
- 15) Sunaryono, Hendro, 1997. *Keys to Cultivating Important Vegetables in Indonesia*. Prints V. Bandung: Sinar Baru Algesindo.
- 16) Valentina Theresia, Anna Fariyanti, Netti Tinaprilla, 2016. Analysis of Farmers' Perceptions of the Use of Local and Imported Shallot Seeds in Cirebon Regency, West Java. *Extension Journal*, March 2016 Vol. 12 No. 1.