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Analysis Of The Application Of The Nutmeg Agribusiness System In Hutumuri Country,South Leitimur District, Ambon City

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Abstrak

This study aims to identify the nutmeg agribusiness system (Myristica fragrans) in Hutumuri Country, South Leitimur District, Ambon City. The determination of the number of research samples using the Slovin formula with the number of research samples was 61 nutmeg farmers. Data collection in this study was carried out through interviews and observations at the research site. The research method used is the descriptive method. Data analysis is carried out qualitatively. The results showed that the implementation of the nutmeg agribusiness system in Hutumuri Country has not run well. This is due to several factors, namely; 1) There is no full readiness of farmers in applying modern agricultural techniques, such as prioritizing the planting of superior seeds, the use of medicines and the use of agricultural equipment that can increase nutmeg production, except the availability of production machinery for advanced products, 2) Still using traditional cultivation practices.

Keywords: Nutmeg, agribusiness system

INTRODUCTION

Nutmeg (Myristica fragrans Houtt) is one of the important plantation crops because in addition to domestic needs, it is also a potential export commodity (Leunupun et al, 2020). The Maluku Provincial Government in 2008, had previously designated nutmeg as a leading commodity because it contributed to increasing Maluku regional income, absorbing labor and regional and national economic growth. Nutmeg as one of

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the important commodities that has high economic value and multipurpose (Wenno, 2015) nutmeg needs to be developed with an integrated agribusiness system so that it can provide optimal economic benefits for farmers. Nutmeg development must be changed with the right nutmeg agribusiness system, so it is necessary for various stakeholders to be involved in the nutmeg agribusiness subsystem by involving: the Government; a) Agriculture Office, b) Trade Office, c) Cooperative Office, Higher Education Institutions, Farmer Role, Regional People's Representative Council (DPRD), Investors, Financial Institutions and Informal Institutions (Siwalette, 2020).

Nutmeg management in Maluku is still increasing every year. However, the increase in nutmeg production in Maluku is not so significant due to production practices that are still conventional with simple technology following hereditary traditions with subsystem agricultural culture (Siwalete, 2020). This certainly has an impact on the selling value of nutmeg, so it does not provide optimal economic benefits.

Hutumuri State is one of the states in South Leitimur District, Ambon Island which is also the location of nutmeg production on Ambon Island. Although nutmeg has become one of the important commodities that contribute to some nutmeg farmers in Hutumuri country, nutmeg production produced by farmers is still low and its development is still limited to primary products. Therefore, this study aims to identify the nutmeg agribusiness system in Hutumuri Country. Hutumuri State is one of the states in South Leitimur District, Ambon Island which is also the location of nutmeg production on Ambon Island. Although nutmeg has become one of the important commodities that contribute to some nutmeg farmers in Hutumuri country, nutmeg production produced by farmers is still low and its development is still limited to primary products. Therefore, this study aims to identify the nutmeg agribusiness system in Hutumuri Country.

RESEARCH METHODS

The method used in this study is a survey method, through direct observation and interviews with respondents (Tukiran, 2012). The respondents interviewed in this study were nutmeg farmers in Hutumuri Country while direct observations covered all nutmeg agribusiness system activities. Determination of the number of research samples using the slovin formula (Sugiyono, 2016). The number of farmers who cultivate nutmeg plants (population) is 154 people. Based on this amount, a fault tolerance limit of 10% is determined. Thus if using the slovin formula, then the number of research samples is:

$$n=\frac{N}{1+Ne^2} \quad \text{..... (6)}$$

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$$n=\frac{154}{1+154(10\%)^2}$$

n= 60.63 or 61 people

Information: N = Large population
n = sample size
e = fault tolerance limit

DISCUSSION

Characteristics of Nutmeg Farmers in Hutumuri Country.

Individual characteristics are generally related to age, education, number of family members. Age is one of the important factors that affect human life activities, especially things related to physical aspects (energy). BPS (2018), classifies age with three categories, namely; Unproductive age (0 – 15 years), productive age (16 – 64 years) and long age less productive (> 64 years). In addition to age, another characteristic of education is education.

Education is one of the important aspects that influence the behavior of farmers in carrying out their farming activities. This is related to the mindset of farmers in accessing information in the form of new innovations and being able to apply these innovations for their farming needs.

The next individual characteristic is the number of family members. The number of family members is also one of the factors that also affect economic living conditions in the family because it is directly related to consumption in the family, both food and non-food consumption (Todaro, 1998). The number of family members will be one of the motivations for individuals in carrying out an activity to obtain income so as to guarantee the need for consumption in the family. BkkbN (1998), divided the number of family members into 3 categories, namely; the number of family members is small (< 4 people), medium (5-7 people) and the number of large large members (> 7 people). Here are the characteristics of nutmeg farmers in Hutumuri Country.

Table 1. Characteristics of Nutmeg Farmers in Hutumuri Country

Characteristics of nutmeg farmers	Category	Number (People)	Percentage (%)
Age	16-64 years (productive age)	50	81,97

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	> 64 Years (Less Productive)	11	18,03
	Total	61	100,00
Education Level	SD	12	19,67
	SMP	7	11,48
	SMA	42	68,85
	Total	61	100,00
Number of Family Members	< 4 Persons (Small Family)	12	19,67
	4-7 persons (medium family)	46	75,41
	> 7 Persons (Large Family)	3	4,92
	Total	61	100,00

Table 1 shows differences in age, education level and number of nutmeg farming family members in Hutumuri Country. Based on the age category in Table 1, most (81.67%) nutmeg farmers in Hutumuri Country are still in the productive age category. This means that in carrying out nutmeg farming activities, 81.67 percent are still supported by good physical abilities. Table 1 also shows the difference in the education level of nutmeg farmers in Hutumuri Country, which is dominated by the high school education group (70%). This means that in carrying out nutmeg farming activities, nutmeg farmers in Hutumuri Country have a different mindset.

Likewise, the next characteristic of nutmeg farmers in Hutumuri Country is the number of family members, where there are differences in the number of family members. This certainly provides its own motivation for farmers to work.

Land Area

Land area is a factor that greatly determines the amount of production to be obtained. The greater the area of land managed, the greater the production obtained assuming other factors are sufficient. Hernanto in Perdana (2016), divides land area into 3 categories, namely narrow land area (< 0.5 ha), medium land area (0.5-2.0 ha) and large land area (> 2.0 ha).Lahan usahatani pala oleh petani di Negeri Hutumuri merupakan lahan warisan orang tua atau lahan yang dikelola secara turun temurun.

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The following is the area of nutmeg land managed by nutmeg farmers in Hutumuri Country.

Table 2. Land Area of Nutmeg Farming in Hutumuri Country

Land Size (Ha)	Number (People)	Percentage (%)
< 0.5 (Narrow)	37	60,66
0.5-2.0 (Medium)	24	30,34
Sum	61	100,00

Source: Primary Data Analysis, 2022 (processed)

Based on the results of research in the field, the broad category of nutmeg farmers in Hutumuri State has a relatively narrow agricultural land area (<0.5 ha) and medium-sized land (0.5 – 2.0 ha). However, most of the nutmeg farming land in Hutumuri Country is classified as narrow land (60.66%).

Upstream Subsystem

The nutmeg farming system in Hutumuri State is still carried out naturally even though some production facilities such as fertilizers and pesticides can be obtained from making purchases at agricultural stores in Ambon City, and obtained from related agencies through the assistance obtained (seeds, fertilizers and pesticides). Nutmeg seeds used by nutmeg farmers in Hutumuri Country today are generally still seeds from their own captivity although some have used the type of nutmeg seeds purchased (Banda nutmeg).

Nutmeg seeds used by nutmeg farmers in Hutumuri Country through the results of captive breeding and self-seeding are usually selected from nutmeg plants that are considered productive by nutmeg farmers. How to sow seeds by nutmeg farmers in Hutumuri Country, namely; 1) put the seeds from the selected nutmeg into water (seeds that have been cleaned by scraping until brownish black) until the seeds germinate to produce shoots, 2) seeds that have produced shoots (approximately one week) then transferred the polybag that has been provided and contains a mixture of black soil + sand), 3) then wait until the size of the seedlings reaches 50 cm before planting.

Cultivation/Farming Subsystem

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The cultivation subsystem carried out by farmers in Hutumuri Country is still fairly simple, it can be seen from the use of agricultural tools such as axes,

Land Processing

The land processing system for planting nutmeg plants in Hutumuri Country is generally the same as the new land clearing that occurred in Maluku, namely using a slash-and-burn system. Forests that have been cut down are then burned to clear land from felled trees. After that, nutmeg plants and several other types of food crops were planted. Furthermore, making planting holes with a hole diameter of ±70 cm and a distance between plants of 8m x 8m. This planting distance usually applies to land that is still empty, but for land in which other crops such as cocoa, langsat, duku and others have been overgrown, the distance is adjusted to existing plants in the location that will be used in planting new nutmeg seedlings.

Planting

Nutmeg planting in Hutumuri Country in recent years is the Banda nutmeg type. Especially planting nutmeg seeds in areas of land that have also been planted with other plantings (dusung system), is carried out by cutting down nutmeg plants and other crops that are no longer productive and replaced with new nutmeg plant seeds. However, planting is only done in small quantities and does not pay attention to the distance between plants. This happens when nutmeg farmers in Hutumuri Country want to plant on land that has been overgrown with several local nutmeg plants and other crops that grow in the area (dusung system).

Weeding

Weeding is carried out several months before nutmeg plants begin to produce signs of flowering. But during the flowering period of the nutmeg,Weeding is more often carried out with a frequency of once every 2-3 weeks. It also depends on the growth of weeds around nutmeg trees.

Embroidery

The embroidery of nutmeg plants carried out by nutmeg farmers in Hutumuri Country is based on several considerations, namely; plants can no longer live (based on visual observation) and embroidery or replant or replace new nutmeg plants with nutmeg

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plants that during productive age do not produce results, or have a production amount that is too low according to nutmeg farmers in Hutumuri Country.

Pest and Disease Control

Pest and Disease Control Pest and disease control carried out by nutmeg farmers in Hutumuri Country is more traditional in nature. This is because there has been no courage of nutmeg farmers in Hutumuri Country in trying or practicing the use of the latest medicines recommended for use by the Ambon City Agriculture Office. Most nutmeg farmers in Hutumuri Country prefer to use mechanical control as a form of traditional practice to control pests and diseases in plants. For example, smoking practices around nutmeg plants are considered to repel pests that damage nutmeg.

Harvest

Harvesting was carried out by nutmeg farmers at the research location by observing the development of nutmeg (physical appearance). If it is considered suitable for harvesting, it will be harvested immediately. Usually to avoid fruit damage, nutmeg farmers in Hutumuri Country choose to harvest nutmeg by picking from nutmeg trees (not waiting for nutmeg to fall).

Post-harvest

1. Sorting

After the nutmeg has been collected, then the separation (sortation) of nutmeg that has good nutmeg meat quality will be carried out. This is done to be able to sell nutmeg flesh.

2. Sun-drying

Nutmeg seeds that have been separated from nutmeg meat are then dried in the sun or dried with nutmeg mace before being sold. The drying process ranges from 2-3 days. However, this depends on how hot and long the sun lasts.

3. Packaging

After drying, the seeds are then packed in sacks while nutmeg mace is packed in plastic bags before being sold.

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Downstream Subsiatem (Agro-industrial and Tataniaga Subsystems)
Nutmeg Processing in Hutumuri Country

Nutmeg processing technology innovation is the household industry (home industry) or small-scale industry. Processing of primary products of nutmeg (nutmeg flesh) which is managed as a juice drink and other products, namely candied nutmeg. Nevertheless. The processing of these two products is still quite limited because of the unavailability of tools or containers to collect nutmeg harvested in large quantities. The availability of nutmeg tataniaga/distribution services in the form of primary products has been available for a long time, including in Hutumuri Country, especially sales in the form of primary products (seeds and mace), although the price is still quite cheap according to respondents. The availability of primary product trading services, in this case, is the involvement of collecting traders at the sub-district and city levels. While availability for the purchase of nutmeg meat has also been available such as the Nutmeg Juice processing industry in Toisapu Country, but still in limited quantities.

Marketing Channels

Based on the results of marketing channel analysis, there are three types of nutmeg marketing channels (nutmeg seeds and mace), namely; 1) farmers → collecting traders at the sub-district level, 2) farmers → collecting traders at the district / city level) and 3) farmers → collecting traders at the sub-district level → collecting traders at the district / city level. The following is a picture of the marketing channel for nutmeg seeds and mace at the research location.

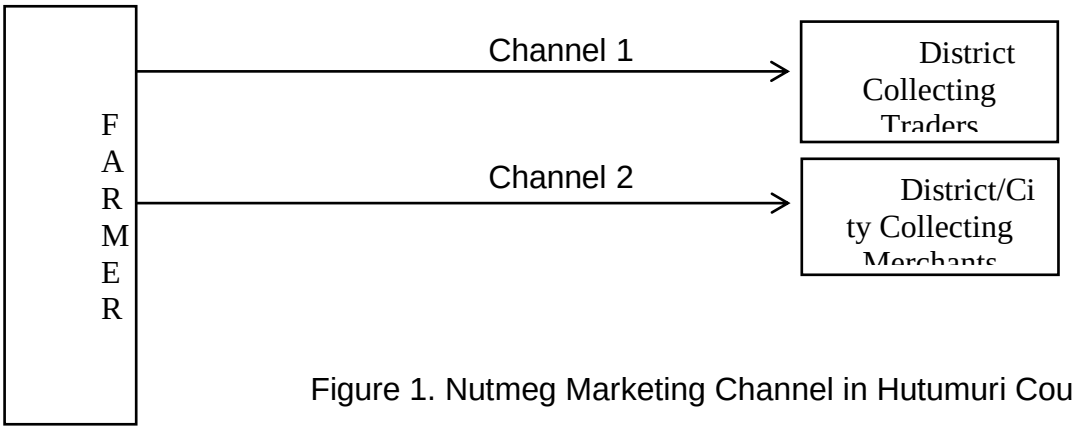


Figure 1. Nutmeg Marketing Channel in Hutumuri Country

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Based on figure 1, farmers have two options, namely they can sell to sub-district level collectors (marketing channel 1) or can sell directly to district/city level collectors (channel 2). This will depend on how much profit farmers get based on the selling price obtained. However, respondents mostly chose to go directly to district/city level collecting traders in the City with the consideration that the price obtained was more profitable.

Support Services Subsystem

The development of nutmeg in Hutumuri State is mostly limited to the sale of primary products (nutmeg meat, nutmeg seeds and mace nutmeg) so that it requires more extension services to help the development of superior nutmeg commodities. While other services such as financial services are also available, but have not been utilized to open further product development of nutmeg primary products. This needs to be supported by cooperation at the institutional level of nutmeg farmers, so that it can ensure the development of medium and large-scale nutmeg industries by utilizing the availability of financial services (banks). Sustainability of the Nutmeg Agribusiness System in Hutumuri Country

Upstream System (Cultivation Aspect/Farming Aspect)

Nutmeg farming in Hutumuri Country is still carried out using traditional methods. Traditional practices in nutmeg cultivation in Hutumuri Country include still maintaining the use of local nutmeg seeds that are less productive, maintenance such as cleaning that is only done at certain times (before the flowering process) and harvesting practices carried out by picking nutmeg (usually done before nutmeg is fully ripe to be picked / harvested). These things certainly have a great impact on the productivity of nutmeg produced in Hutumuri Country. Therefore, there is a need for intervention from the authorities (agricultural extension workers) in conducting socialization activities and assistance in the field in order to change the mindset of farmers so that it can lead to a more productive nutmeg farming system.

Downstream Subsystem

The development of nutmeg in Hutumuri Country is still limited to the home-scale processing industry. In addition, the processing capacity of nutmeg advanced products in Hutumuri Country is only in the form of candied nutmeg and nutmeg juice, the amount of production is still very limited and production is still seasonal. This certainly has not been able to provide maximum and sustainable benefits. Therefore, more adequate

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technological support is needed to overcome the problem of developing nutmeg (nutmeg agroindustry) that is more competitive and sustainable.

Subsystem of Supporting Institutions

The problem of nutmeg agribusiness development in Hutumuri Country is also caused by the absence of supporting institutions in nutmeg processing in Hutumuri Country, in this case, especially financial services. One of the causes of the absence of advanced processing industries, especially for nutmeg seeds and mace, is due to the unavailability of supporting technology (primary product processing technology), which is also due to the unavailability of adequate business capital to obtain the required technology. Thus, cooperation needs to be carried out with related institutions to obtain financial assistance in order to create a nutmeg seed and mace processing industry.

CONCLUSION

The implementation of nutmeg agribusiness in Hutumuri Country has not gone well. This is due to several factors, namely; 1) there is no full readiness of farmers in applying modern agricultural techniques, such as prioritizing the planting of superior seeds, the use of medicines and the use of agricultural equipment that can increase nutmeg production, except for the availability of production machinery for advanced products, 2) still using traditional cultivation practices and 3) the development of nutmeg derivative products has not been carried out (only limited to the production and sale of nutmeg commodities in primary form), 4) the marketing system of nutmeg farmers in Hutumuri Country is still in the form of primary products, 5) there is no relationship with the cooperation built by supporting institutions in supporting nutmeg production activities in order to further increase farmers' income

REFERENCES

BKKBN. 1998. National Family Planning Movement. Jakarta : BKKBN

BPS, 2018. Profile of Poverty in Maluku. Central Statistical Agency of Maluku Province.

Leunupun, S., Turukay, M., Tuhumury, M. T. F. 2020. Nutmeg Development Strategy in Central Maluku District (Case Study in Seith, Lilibooi and Hatu States). Journal of Agriocean Research, 7 (2) : 92-102

Siwalette, D. J. 2020. Production Potential and Design of Nutmeg Agribusiness System in Maluku Province. Proceedings of the 2020 National Seminar on Agribusiness, Faculty of Agriculture, Khairun University, pp 13-20

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Sugiyono. 2016. Qualitative, quantitative, and R&D compliance methods Bandung: Alfabeta

Todaro, Michael P., 1998 Economic Development in the Third World, Sixth Edition Jakarta: Erlangga

Tukiran, 2012. Survey Research Methods. Jakarta : LP3ES. 319 p.

Wenno, N. F. 2015. Prospects of Nutmeg Agroindustry in Coastal Areas (A Study in the Framework of Community Empowerment in Seith Village, Leihitu District, Central Maluku Regency). Journal of Population and Human Resource Development, XI (2) : 88 - 94

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