

**TRIGONA HONEY BEE CULTIVATION BUSINESS CONTRIBUTION (TRIGONA SP)
ON THE INCOME OF FARM HOUSEHOLDS IN PEMEPEK VILLAGE PRINGGARATA
SUB-DISTRICT CENTRAL LOMBOK REGENCY**

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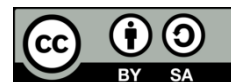
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ABSTRACT

The objectives of this research are: (1) To determine the costs and income of honey bee cultivation businesses Trigona sp In Pemepek Village, Pringgarata Sub-District, Central Lombok Regency; (2) Knowing the magnitude of the contribution of the honey bee cultivation business Trigona sp on farmer household income; (3) Knowing what obstacles are faced by honey bee cultivation businesses Trigona sp. In this research the method used is the descriptive method. Determination of the sample area was carried out using purposive sampling, while the data collection technique was carried out using a census. The research results show that: (1) Average production costs for honey bee cultivation businesses Trigona sp amounting to IDR 134,663,- per one production or IDR 403,989,- per year (3 production times). The average honey production produced is 0.11 liters per stop or 2.15 liters per production or 6.45 liters per year with a price at the farmer level of IDR 300,000, so that the average revenue is IDR 646,000 per one. times production or IDR 1,938,000 per year. And the average income of honey bee farmers is IDR 511,337 per production or IDR 1,534,011 per year. (2) Contribution of honey bee business Trigona sp to farmer household income of IDR 1,501,789,- or 14.11% of the total income of IDR 10,874,204,- per year, which comes from farming IDR 5,085,193,- or 46.76% and non-agricultural business IDR 4,255,000,- or 39.13%; (3) The main obstacles faced by honey bee business actors Trigona sp are weak financial management of honey bee cultivation businesses, reduced raw materials for bees' main consumption which are produced from various trees or plants that produce resin, nectar and pollen, reduced honey stocks, the presence of pests and diseases, low consumer confidence in the quality of honey.

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INTRODUCTION

Indonesia's Central Statistics Agency (BPS) in 2021 recorded honey production of 189,780 liters. This number jumped 269.65% compared to the previous year which produced 51,338.26 liters of honey. This data shows that honey production has fluctuated greatly in the last decade. In 2015, honey production reached the highest, reaching 697,160.61 liters. Furthermore, in 2012 production was the lowest, reaching 13,533.94 liters. In 2021, honey production based on regional position will be the largest in Java, namely 180,508 liters, Sumatra with 7,534 liters, Bali and Nusa Tenggara with 1,111 liters and Kalimantan with 627 liters.

Honey is a forest product, especially non-timber forest products (NTFPs) and has economic value and provides quite a lot of benefits. For the Indonesian people, honey is no longer foreign because it can be used as medicine and health supplement, even the food and beverage industry uses honey as an additional raw material for these food and beverage products. From an economic perspective, honey is a natural product whose economic value should be taken into account so that farmers and honey bee cultivators are currently competing to cultivate honey bees because the selling value of this honey is quite high (Syaifudin, 2020).

Honey is a thick liquid produced by bees and is often referred to as honey bee (Ichwan et al, 2016). The types of honey bees that are often found in Indonesia that produce honey products are *Apis indica*, *Apis dorsata*, *Apis mellifera* and *Trigona sp.* One of the bees that is widely cultivated by people today is *Trigona sp* or kelulut (Faiza, 2018).

The development of *Trigona sp* cultivation is starting to increase with the public's demand for things like honey and propolis. In NTB, especially in Pemepek Village, Pringgarata District, bee cultivation is starting to develop significantly, because this bee business has many advantages, one of which is that it is environmentally friendly, such as not stinging and the price of bee honey is twice that of honey bee honey. This proves that this type of bee has great potential for cultivation profitable for cultivators (Vijayakumar et al, 2013).

Pemepek Village, Pringgarata District, is one of the areas that has abundant sources of honey. This can be seen from the natural potential of both plantations and forests around this village which are a source of food for *Trigona* bees. So it is very supportive to help their household economy. In 2022, the production data for *Trigona* honey bees in Pemepek Village, Pringgarata District, Central Lombok Regency is quite large, found in 3 hamlets, namely Repok Pidandang at 69.6 liters, Taman Baru at 82.8 liters and Gelogor at 41.4 liters per year, so that total honey production is 193.8 liters per year (Primary data, 2023).

The source of income for farmer households is not only from the *Trigona* bee cultivation business, but their income also comes from on-farm, off-farm and non-farm sources. Farming income (on farm) is income from farming businesses such as coffee and fruit businesses. Income outside farming (off farm) is from raising livestock, one of which is cultivating *Trigona* bees. Meanwhile, non-farm (non-farm) income is income from trading activities, civil servants or private employees such as village staff and honorary workers (Filly, 2018)

The business of cultivating *Trigona* honey bees is very easy and done simply, so the people of Pemepek village are very enthusiastic about running this bee cultivation business. This can be seen from the increase in bee cultivators in the village. In running this business, it cannot be separated from the costs of production facilities and other costs incurred by farmers to be able to produce honey as well as the obstacles/constraints faced in running this bee cultivation business. The costs that must be incurred are the costs of the bee colony/seedlings, the costs of depreciation of tools such as: stup, spoon, bowl, nylon rope, knife and rack/cage, while the obstacles/constraints in running the business are weak financial management of the honey bee cultivation business, reduced the main raw material for bees' consumption, lack of honey stocks, the presence of pests and diseases and low consumer confidence in the quality of honey. This honey bee business aims to increase the income of farming households (Pratiwi et al, 2020).

Based on the background above, the problem formulation is: 1) How much is the cost and income of the *Trigona sp* honey bee cultivation business in Pemepek Village, Pringgarata District, Central Lombok Regency?; 2) How big is the contribution of the *Trigona sp* honey bee cultivation business to the household income of farmers in Pemepek Village, Pringgarata District, Central Lombok Regency; 3) What obstacles are faced by business actors cultivating *Trigona sp* honey bees in Pemepek Village, Pringgarata District, Central Lombok Regency? Based on the problem formulation above, research was conducted entitled "The Contribution of *Trigona* Honey Bee Cultivation Business (*Trigona sp*) to Farmers' Household Income in Pemepek Village, Pringgarata District, Central Lombok Regency".

The aims of this research are: 1) To find out costs and income of the *Trigona sp* honey bee cultivation business in Pemepek Village, Pringgarata District, Central Lombok Regency; 2) To know the large contribution of the *Trigona sp* honey bee cultivation business to the household income of farmers in Pemepek Village, Pringgarata District, Central Lombok Regency; 3) To find out what

obstacles are faced by Trigona sp honey cultivation businesses in Pemepek Village, Pringgarata District, Central Lombok Regency.

METHOD

Descriptive methods were used in this research, which took place in Pemepek Village, Pringgarata District, Central Lombok Regency. This research was carried out for two months, from June to July 2023. The research sample included all Trigona honey bee cultivators in Pemepek Village, totaling 30 people. The selection of Pemepek Village as a sample area was based on the fact that to date, this village is the only area in Central Lombok that is still actively cultivating Trigona honey bees in significant numbers. This research uses primary and secondary data. Data collection was carried out by census.

1. Data analysis was carried out descriptively by referring to the income analysis tool described by Suratiyah (2006). Income analysis includes three aspects:
2. Analysis of income from the Trigona honey bee cultivation business, where costs, receipts and income are calculated using certain formulas for production costs, receipts and business income.
3. Analysis of farming income, which is also calculated by subtracting total costs from total revenues.
4. Analysis of non-farming income is calculated in the same way.

The total income of farmer households is obtained by adding up the income from these three sources. Next, the contribution of the Trigona honey bee cultivation business to household income is calculated using a special formula, with the aim of knowing the percentage contribution of the business to overall household income.

RESULTS AND DISCUSSION

Pemepek Village is an area that has a variety of natural potential which is very suitable for developing honey bee cultivation business activities. As an agricultural village, most of its area is plantation and agricultural areas, namely 869.01 Ha of plantation land, 148.7 Ha of rice fields, and 100.75 Ha of green or forest areas. This geographical condition is very good as a provider of bee food which is one of the factors for increasing honey production.

Apart from the need for feed, the success of honey bee cultivation business activities cannot be separated from the production costs incurred by the honey bee farmer, to produce honey for one year. The costs incurred by honey beekeepers include variable costs and fixed costs. Variable costs consist of production facilities, namely colonies and bottles, while fixed costs include depreciation costs for tools, namely stups, spoons, nylon ropes, knives, filters, bowls and racks/cages. The resulting production or output is honey. The honey is sold, so that the proceeds from the sale can generate income for honey beekeepers.

In 2022, the production data for Trigona honey bees in Pemepek Village, Pringgarata District, Central Lombok Regency is quite large, found in 3 hamlets, namely Repok Pidandang at 69.6 liters, Taman Baru at 82.8 liters and Gelogor at 41.4 liters per year, so that total honey production is 193.8 liters per year (Primary data, 2023).

Bee production depends on the amount of food available which comes from plants that produce resin, nectar and pollen. If the availability of food is abundant, honey production increases, and vice versa, so this affects the income obtained by honey beekeepers in Pemepek Village, Pringgarata District, Central Lombok Regency. PFarmers' income does not only come from bee cultivation business activities, but other sources of income come from various sources such as: coffee and fruit farming, non-agricultural farming income such as raising livestock, one of which is kelulut honey bees and income outside of farming such as work as a laborer. honorary workers, traders and village staff.

The results of income and expenditure from honey bee cultivation activities are analyzed so that the amount of income from the honey bee business, the amount of income from results outside the honey bee business and the large contribution of the honey bee business to the farmer's household income are visible. In this research, obstacles or obstacles experienced in running a honey business were also identified in order to provide advice to other honey farmers in the honey cultivation business. For more details, see the description below:

Analysis of Production Costs and Income originating from the Trigona sp honey bee cultivation business in Pemepek Village, Pringgarata District, Central Lombok Regency

The average production costs and income generated from the Trigona sp honey bee cultivation business in Pemepek Village, Pringgarata subdistrict, Central Lombok Regency can be seen in table 2 below:

Table 2. Average production costs and business income for cultivating Trigona sp honey bees in one year in Pemepek Village, Pringgarata District, Central Lombok Regency

No	Fee Type	Physical Amount	Value (Rp/Production Process)	Value (Rp/Year)
1	Variable Costs (Rp)			
	Production Costs			
	- Colonies / Seedlings	20	95,000,-	285,000,-
	- Bottle (Seeds)	4	9,583,-	28,750,-
	Total		104,583,-	313,750,-
2	Fixed Costs (Rp)			
	Tool Depreciation			
	- Stup	20	16,359,-	49,077,-
	- Spoon	1,2	488,-	1,464,-
	- Nylon Rope	14	2,732,-	8,198,-
	- Knife	1.13	592,-	1,775,-
	- Filter	1,2	811,-	2,433,-
	- Mug	1.13	458,-	1,374,-
	- Shelf	1	8,689,-	25,918,-
	Total		30,080,-	90,239,-
	Total production costs		134,662,-	403,989,-
3	Honey Production (Liters)	0.11	2.15	6.45
4	Honey Price (Rp)		300,000,-	300,000,-
5	Revenue (Rp)		646,000,-	1,938,000,-
6	Income (Rp)		511,337,-	1,534,011,-

Source: Primary data processed, 2023

Based on the table above, it shows that the average production cost of the Trigona sp honey bee cultivation business is IDR 134,662 per production or IDR 403,989 per year. Production is carried out 3 times a year. These production costs consist of variable costs and fixed costs. The average variable cost is IDR 104,583 per production or IDR 313,750 per year, which consists of input costs, namely colony and bottle costs. The average colony cost is IDR 95,000 per production or IDR 285,000 per year and the bottle cost is IDR 9,583 per production or IDR 28,749 per year. Meanwhile, the average fixed costs are IDR 30,080 per production or IDR 90,239 per year, which consists of depreciation costs for tools such as: spoons, spoons, nylon ropes, knives, filters, bowls and racks/cages.

Then the average production resulting from the Trigona sp honey bee cultivation business is 0.11 liters per stop or 2.15 liters per production or 6.45 liters per year, with a price at the farmer level of IDR 300,000 per liter, so that the total revenue obtained is IDR 646,000 per production or IDR 1,938,000 per year. Meanwhile, total income is IDR 511,337 per production or IDR 1,534,011 per year.

A. Analysis of Production Costs and Income from Farming in Pemepek Village, Pringgarata District, Central Lombok Regency

The average production costs and income generated from farming in Pemepek Village, Pringgarata District, Central Lombok Regency can be seen in table 3 below:

Table 3. Average Production Costs and Income from Farming in one Year in Pemepek Village, Pringgarata District, Central Lombok Regency

No	Description	Farming	
		Coffee	Rambutan+Mangosteen+Avocado

1	Cultivated Land Area (Ha)	0.22	0.22
2	Variable Costs (Rp) Production Facilities	94,118,-	112,500,-
	Total	94,118,-	112,500,-
3	Fixed Costs (Rp) a. Tool Depreciation b. Land Tax	15,684,- 45,588,-	17,467,- 44,450,-
	Total	61,272,-	61,917,-
	Total Production Cost (Rp)	155,390,-	174,417,-
4	Production		
	a. Coffee (Kg) b. Rambutan (Kg) c. Mangosteen (Kg) d. Avocado (Kg)	81.2	87 52 134
5	Price a. Coffee (Rp/Kg) b. Rambutan (Rp/Kg) c. Mangosteen (Rp/Kg) d. Avocados (Rp/Kg)	30,000,-	10,000,- 35,000,- 8,000,-
6	Revenue (Rp) a. Coffee (Rp/Kg) b. Rambutan (Rp/Kg) c. Mangosteen (Rp/Kg) d. Avocados (Rp/Kg)	2,436,000,-	87,000,- 1,820,000,- 1,072,000,-
	Amount of Receipt (Rp)	2,436,000,-	2,979,000,-
	Total Receipts	5. 415,000,-	
7	Income (Rp) Total Income (Rp)	2,280,610,-	2,804,583,-
	Total Income (Rp)	5,085,193.-	

Source: Primary data processed, 2023

Based on the table above, it shows that: The average production cost of coffee farming is IDR 155,390 per year, which consists of variable costs, namely the cost of fertilizer alone, IDR 94,118 per year and fixed costs, namely the depreciation costs for tools such as machetes and sickles, IDR 15,684. ,- per year and land tax costs of IDR 45,588,- per year. Meanwhile, the average production costs for fruit farming are IDR 174,417 per year, which consists of variable costs, namely fertilizer, IDR 112,500 per year and fixed costs, namely the depreciation costs for tools such as machetes and sickles, IDR 17,467 per year and land tax costs IDR 44,450 per year.

Then the average production produced from coffee farming is 81.2 kg per year at a price of IDR 30,000 per kg, so the total income is IDR 2,436,000 per year, after deducting the total production costs of IDR 155,390 per year. year, the total coffee income is IDR 2,280,610 per year. Meanwhile, the average production of fruit farms such as Rambutan is 87 kg per year at a price of IDR 10,000

per kg, Mangosteen is 52 kg per year at a price of IDR 35,000 per kg and Avocado is 134 kg per year at a price of IDR 8,000. ,- per kg. So that the total income from fruit farming is IDR 2,979,000 per year. After deducting the total production costs of IDR 174,417,-, the total income from fruit farming is IDR 5,085,193,- per year. So the total income from respondents' farming businesses in Pemepek Village, Pringgarata District is IDR 5,415,000 per year from the total income from coffee and fruit farming.

B. Analysis of Income from the Non-Agricultural Sector in Pemepek Village, Pringgarata District, Central Lombok Regency

Farmers' income from the non-agricultural sector comes from various sources such as working as traders, honorary workers and village staff. The average income of farmers from the non-agricultural sector is explained in table 3 below:

Table 3. Average Income of Farmers from the Non-Agricultural Sector in One Year in Pemepek Village, Pringgarata District in 2022

No	Source of Income	Amount	Total Income Per year (Rp)
1	Trader	6	1,090,000,-
2	Honorary	8	915,000,-
3	Village Staff	2	2,250,000,-
	Total income	16	4,255,000,-

Source: Primary data processed, 2023

Based on the table above, the average income of farmers from the non-agricultural sector in one year is IDR 4,255,000,-, which consists of income as a trader of IDR 1,090,000,- per year, as an honorary worker of IDR 915,000,- per year and as village staff amounting to IDR 2,250,000 per year. So of the 30 respondents, only 16 people had income from the non-agricultural sector, while 14 people had no income outside agriculture.

C. Contribution of Trigona Honey Bee Cultivation Business to Farmers' Household Income in Pemepek Village, Pringgarata District, Central Lombok Regency

The business contribution referred to in this research is the contribution of the Trigona honey bee business to the farmer's household income obtained by all household members from honey bee cultivation, farming and businesses outside the farming sector obtained by mothers, fathers, children and members. others who live in the same house and eat on the same budget. For more details, see the table below:

Table. 4 Contributions of Trigona Honey Bee Cultivation Business to Farmers' Household Income in Pemepek Village, Pringgarata District

No	Source of Income	Total Annual Income (Rp)	Contribution (%)
1.	Trigona Honey Bee Cultivation Business	1,534,011,-	14,11
2.	Farming (Coffee and Fruit)	5,085,193,-	46.76
3.	Businesses outside Agriculture	4,255,000,-	39.13
	Total	10,874,204	100

Source: Primary data processed, 2023

The table above shows that the average total income of farmer households in Pemepek Village, Pringgarata District, Central Lombok Regency is IDR 10,874,204 per year. The contribution of Trigona sp honey bee cultivation business income to farmer household income is IDR 1,534,011,- per year or 14.11%, then income from farming (Coffee and Fruit) is IDR 5,085,193,- per year or 46.76% and income from outside the agricultural business of IDR 4,255,000 per year or 39.13%.

The Trigona honey bee business is a side business, but if managed well it will produce a large contribution to the farmer's household income. This cultivation business is still carried out on a small scale or household business by utilizing home yard land and using simple equipment.

D. Obstacles Faced by Trigona Honey Farmers in Pemepek Village in Pringgarata District, Central Lombok Regency

In running a bee cultivation business, there are still many obstacles faced by honey bee cultivators which will be explained through Swot analysis. SWOT analysis is the systematic identification of various factors to formulate a strategy for a business. This analysis is based on logic that can maximize strengths and opportunities, but simultaneously minimize weaknesses and threats. For more details, see the table below:

Table 5. Obstacles faced by Trigona Honey Bee Business Farmers in Pemepek Village, Pringgarata District, Central Lomnok Regency.

No	Strength (Strenghts)	No	Weaknesses
1.	The easy business of cultivating honey bees	1.	Weak financial management of the Honey Bee cultivation business
2.	Abundant potential for bee food plants	2.	The reduction in the main raw material for bees' consumption is produced from various trees or plants that produce resin, nectar and pollen
Opportunities		Threats (Treaths)	
1.	Consumer demand for honey is increasing	1.	Lack of honey stock
2.	High community motivation to carry out cultivation businesses	2.	The presence of pests and diseases
3.	Coaching/training from related agencies	3.	Low consumer confidence in the quality of honey

Source: Primary data processed in 2023

Based on the table above, the obstacles faced by bee farmers can be explained as follows:

Strength Factors

These strength factors include: Easy Honey Bee Cultivation Business and Abundant Potential for Bee Feed Plants. Cultivating honey bees is very easy because these bees do not sting, the equipment is simple and the production costs are quite cheap. This is in line with his opinion Erwin, 2014 and Abundant Potential for Bee Food Plants, where the important food for bees is nectar, pollen and pollen produced by various trees/plants. In Pemepek village there are various types of plants or trees that have great potential as bee food.

Opportunity Factors

These opportunity factors include: 1) Consumer demand for honey is increasing, where the Trigona honey product is already well-known among the public, because it is believed to have many benefits, so the demand for this honey is increasing. This is in line with the opinion of Raharja & Manurung, 2008, that demand is consumers' desire for a product at a price level in a certain period. 2) High Community Motivation for Trigona Cultivation Business Most respondents are very enthusiastic about cultivating honey bees, because of the abundant potential for bee food. According to Usman, 2013, motivation is an encouragement for someone to carry out an activity or business. 3) Coaching/Extension where knowledge/skills in the honey bee business are very important.

Weaknesses

These factors include: 1) Weak Financial Management of the Trigona Honey Bee Cultivation Business. Based on the results of interviews, honey bee cultivators in Pemepek village have not focused on financial planning, they often give out honey products for free so there is no financial calculation. In a business, management or financial planning is very important to improve a business.

2) Reduced raw materials for bees' main consumption, which are produced from various trees or plants that produce resin, nectar and pollen. As people's needs continue to increase, both for daily needs and for building materials, cutting down trees or plants that produce the main raw materials for consumption cannot be avoided. For this reason, honey beekeepers need to plant trees or plants that are the main raw material for bees' consumption, such as trees, plants or flowers around their yard, so that the bees' feed remains sufficient.

Threats

These factors are: 1) Lack of Honey Stock; Based on the results of interviews, some breeders prefer to sell bee colonies rather than honey, resulting in reduced honey products produced. This happens because they want faster results. The solution is that breeders no longer sell colonies, so that bee production increases. 2) Presence of Pests and Diseases; Even though cultivating trigona bees is very easy, pests and diseases such as lizards, wasps, ants and fungi still exist. For this reason, cultivators must be active in maintenance by cleaning the stump twice a week and providing insect medicine if necessary; 3) Low Consumer Confidence in the Quality of Honey, from respondents' statements, many consumers doubt the authenticity of this bee honey, because of its blacker color and sour taste. This happens due to weather factors and the honey has only just been harvested so that the honey is mixed with pollen. According to Winarno, 2005 the quality of honey is a very important consideration for consumers.

CONCLUSION

Based on the results and discussion, the following conclusions can be drawn: 1) The average production cost of the Trigona honey bee cultivation business in Pemepek Village, Pringgarata District, Central Lombok Regency is IDR 134,663 per production or 403,989 per year (3 harvests). The average honey production produced by honey bee business farmers is 0.11 liters per batch or 2.15 liters per production or 6.45 liters per year with a price at the farmer level of IDR 300,000, so that the average total revenue is IDR 646,000. ,- per production or IDR 1,938,000 per year. Meanwhile, the average income of honey bee farmers is IDR 511,337 per production or IDR 1,534,011 per year; 2) Meanwhile, the contribution of the Trigona honey bee cultivation business to the household income of farmers in Pemepak Village, Pringgarata District is IDR 1,534,011,- or 14.11% per year. of total household income of Rp. 10,874,204,- per year; 3) Based on the results of interviews with farmers in the Trigona honey bee cultivation business, there are several obstacles experienced by farmers, including: weak financial management of the honey bee cultivation business, a reduction in the main raw material for bee consumption which is produced from various trees or plants that produce resin, nectar and pollen. , lack of honey stock, the presence of pests and diseases and low consumer confidence in the quality of honey.

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