
Economic Recovery Model in the Time of Pandemic COVID 19 a Case Study in Lombok West Nusatenggara Indonesia

Kholil^{1*} and Nafiah Ariani²

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ABSTRACT

Covid 19 pandemic has a very serious impact to all productive activities of the people especially in Lombok West Nusatenggara, because the people have not recovered from the earthquake on July 2018, they have to face the pandemic covid since march 2020. Trygona honey is a leading home industry in accordance with the natural and cultural potential of the community, but it has not been fully developed for the economic recovery of the community during the COVID-19 pandemic.

The purpose of this research is to develop the most appropriate strategy of commercialization of trygona honey to ensure sustainability in the time of covid 19 pandemic, that can be used as a model for economic recovery in Indonesia. The analytical methods used are SAST (Strategic Assumption Surfacing and Testing), and AHP (Analytical Hierarchy Process). The results of study showed that trygona honey home industry was not affected by pandemic covid 19, the demand is actually increasing due to people's awareness of their health. This honey has a very complete nutritional content, which can be used to increase immunity against of COVID-19. There are three main problems that were faced by the trigona bee farmers to develop their business: Trigona seeds, cultivation technology, and business management. The best strategy to increase their business and income is cultivation system technology and providing added value through packaging and labeling. The most appropriate commercialization strategy to increase farmer's income and ensuring sustainability of the business is involving BUMDES as an interconnectivity institution between trygona honey producers with the market.

Keywords: Home industry; Trygona honey; pandemic COVID 19; added value; sustainability.

1. INTRODUCTION

Geographically Indonesia is one of the country with the highest natural disaster, because it's located on three plates : Indo Australia in the south, Pacific Ocean in the east and Eurasia in the north. One of the most frequent disaster is earthquake [1]. An earthquake is a natural disaster that cannot be predicted when it will occur, what time and where it will occur. Estimates of earthquake are only the magnitude and region such as in Java, Sumatra, etc. (BNPB 2015). Earthquake is also defined as shocks that occur on the surface of the earth caused by collisions between earth plates, active faults, volcanic activity or stone collapse (BNPB 2011), which impact on the destruction of various buildings, economic facilities and infrastructure, loss of life and environmental degradation [2,3,4]. There are several reasons why earthquake happens, namely: (1) the release of energy due to the shift of the earth's plate; (2) the motion of the earth's plates that are mutually distant. This will form a new plate between both of them which will be pressed causing the new plate to move downward. Therefore, it will produce an energy with tremendous strength which is the main cause of vibrations or shocks on the surface of the earth called an earthquake; (3) motion of the earth's plates that are approaching each other. The movement of the plates that come close together will form a new mountain which

¹Faculty of Engineering, Sahid University, Jakarta, Indonesia.

²Faculty of Economic Business, Sahid University, Jakarta, Indonesia.

*Corresponding author: E-mail: kholilppm@gmail.com;

triggers an earthquake; and (4) because of the movement of magma developing a very large gas pressure in the crater blockage and causes an earthquake. There are 3 forms of earthquakes, namely: (a) tectonics, caused by the shifting of the soil plate due to convection currents that occur on earth; (b) volcanic, caused by the movement of magma, usually on volcanoes, followed by volcanic eruptions; and (c) artificial, caused by human actions such as nuclear accidents or dynamite.

The impacts of earthquakes in the developed and developing countries are different. In Japan, an earthquake-prone country, for example, Fukushima earthquake (2016 and 2011) and Kobe earthquake (1995) had very powerful impact but did not cause damage and loss as what happened in Indonesia such as Aceh (2004), Nias (2005), Jogja (2006), Padang (2007), North Sulawesi (2008), Tasikmalaya (2009), and Mentawai (2010) which caused damages to infrastructure, houses and economic centers as well as enormous human casualties. Adnan et al. (2015) and BNPB (National Disaster Management Agency) [5] state that earthquakes can cause damage to infrastructure facilities, public facilities, places of worship, destruction of economic facilities, and human casualties. In addition, earthquake can also cause mental depression, fear of an earthquake, difficult to forget the event of echo and fear of entering the house [6, 7,8-10,11] (WHO 2013; and Ando 2011).

The tremendous earthquake in Lombok in July and August 2018 has caused great loss not only in form of economic facilities and houses, but also a lot of human casualties, reaching more than 4,500 deaths, and 10,239 people lost their houses. The total economic loss was estimated to reach IDR 5.4 trillion [12,13, 14,15,16,17]. One of the regions experiencing the most serious impact was North Lombok. Due to the damage of economic facilities, most of the productive activities of the community, such as trigona farming, coconut sugar production, and bamboo handicrafts, stopped (2) that would harm the sustainability of regional development.

The pressure on community economy got harder especially during Covid-19 pandemic, Government policies on Large-Scale Social Distancing (PSBB) including social distancing and activity restriction highly affected community activities. Nationally, Covid-19 had affected economic growth into negative 5.2% and made SMEs suffer from the impact so they had to be closed [18].

North Lombok and East Lombok region are the highly potential regions as tourism destination. There are various natural attractions in the regions, among others Tiga Gili consisting of Gili Trawangan, Gili Meno, and Gili Air; Mount Rinjani, Sendang Gile Waterfall, Tiu Kelep Waterfall, and so on. North Lombok suffered from the most serious impact of the disaster on 28 July and 5 August, so most of the economic activities of the community stopped. Therefore, it required development of community productive activities suitable with potential excellences and community culture so they could recover soon [19, 20-23, 24].

Economic growth, especially in North Lombok, experienced a very serious slowdown after earthquake, especially in the time of Covid 19. Various real sectors of society, especially those based on agriculture, home industries such as the manufacture of coconut sugar, creative industries (handicrafts), clove oil refining, etc., which previously became the mainstay of people's livelihoods could not operate because of the damage of infrastructure facilities and the difficulty in getting raw materials. This will greatly disrupt the sustainability of regional development in general and the development of human resources in particular (education and health) in the future, so that the sustainability of people's lives is threatened [25,26,27].

Home Industry is one of the most productive activities which involving many people that integrated with household activities [28] (Kholil, Nugroho Sukamdani and Kohar Sulistyadi, 2016).

One of the strategies to restore the socio-economic conditions of the community is to build productive community activities based on superior natural resources and by the local community's culture so that sustainability can be more guaranteed. Trigona honey is a home industry developed by almost 70% of the people of North Lombok.

Economic recovery in North Lombok had to be done through productive activities involving as many people as possible. One of them was the development of home industry based on excellent

resources. Trigona farming and coconut sugar production were the most potential home industries, suitable with the objective condition of the community [29,30]. One of the strategies to restore the socio-economic conditions of the community is to build productive community activities based on superior natural resources and by the local community's culture so that sustainability can be more guaranteed. Trigona honey is the appropriate home industry that developed by almost 70% of the people of North Lombok [29,19,31].

The main problem faced by Trigona beekeepers is the "supply chain," which has not been well organized and built so that the beekeepers have not received a fair price. There is not yet a model to help the marketing process of products that provide better profits for beekeepers. Besides that, beekeepers tend to sell individually, directly, without going through an institution that can protect the interests of beekeepers so that their bargaining position is better. Not a few beekeepers are tied to collectors because loans bind them, so they have no other choice but to sell them at relatively cheaper prices. Another thing that makes trigona beekeepers unimproved is the human resources with no management skills to manage a business. There is no any treatment in cultivation system, there is no any treatment whatsoever in the bee cultivation system, seedlings are taken from the forest and only put in a box beside their house. In addition, these home-based industry actors consider their activities to be just a sideline, that is, not the primary activity to support the family economy even though they have excellent potential, especially in this era of the COVID-19 pandemic.

Trigona honey is the honey produced by trigona (*klanceng*), in Malaysia it is also called as *kelulut*. They are a type of small bees producing propolis known to be highly beneficial for human health. The excellence of this type of bees compared to the other types is because they live freely in forests in colonies consisting of 2,000 to 3,000 bees each. Trigona bee is a type of bee which is small and very active in utilizing various types of flower nectar. These bees are able to enter even tiny flowers that cannot be done by ordinary bees.

The trygona honey produced by trigona bees contains a lot of nutrition obtained from combination of various types of nectar. While trigona honey also proves to be a type of high-quality honey. Trigona bees are easy to take care, they do not sting, and they do not need special feed because they eat the nectar of flowers growing around them. Trigona bees have many potentials to cultivate. In addition to their simplicity, they enhance welfare and are also friendly to humans. The cultivation system is only carried out on the side of the house or placed at the back of the house without special facilities. Trygona bees are only placed in boxes (stups) which are usually 32 x 15x 20 cm, the owner also does not provide special feed [32,33].

The main problems faced by trigona bee farmers were the extremely simple way of farming, the limited access to market, and the limited value addition. In addition, the people did not know clearly what medical contents and benefits were and how to execute the business process to increase the value that might increase their income. Therefore, it needed to develop a good and sustainable cultivation model to increase production and it required clinical tests to investigate its medical benefits, and it is necessary to build a business model that can provide fair benefits to all parties involved . This study aimed to investigate the medical contents and benefits of trigona honey and also to design a business model that could increase the income of trigona bee farmers.

2. LITERATURE REVIEW

Geographically, Indonesia is located in the intersection of the earth's tectonic plates, namely Indo-Australia, Eurasia, and Pacific plates, which can produce accumulation of energy with certain threshold when they collide and can cause earthquake. Additionally, in Indonesia there are around 150 active volcanoes, so Indonesia is one of the countries with the highest risk of natural disasters [2]. The impact of natural disaster is very serious, not only destruction of facilities and infrastructure, but also destruction of economic facilities and human casualties [34,12,13]. Destruction of infrastructure and environment affect the toughness of economic development of a region. Almost in every region experiencing natural disaster, the caused impacts are very complex, not only economic loss, but also a lot of human casualties, loss of productive activities of the community that caused slowdown of economic growth, increase of poverty and unemployment. The ability of a community in responding to

a disaster determines the economic toughness of a region [2]. Therefore, the efforts to make the community tough in facing a disaster become crucial. To make the community tough in facing a disaster can include some ways: to make the economic foundation tough with skills based on competencies and excellent resources and to prepare psychologically so they do not feel down when they face a disaster [35,36,37,38]. The impact of the earthquake in Lombok 2018 is getting heavier, due to the COVID-19 pandemic since March 2020. Peoples who have started to recover their productive activities have stopped because they have to follow very strict health protocol policies, no activities and they have to stay at home.

Community involvement or public participation in social and economic recovery is very necessary. Participation gives meaning to the emergence of involvement in an activity, while local community participation in development means the participation of the community consciously in development (Simatupang, 2001). Bintoro (1995) states that development in all respects will succeed if the community is involved; participation also means community involvement not only in the implementation of development but also in the identification of community potential, policy formulation, and evaluation [39]. There are several factors that influence community participation, such as knowledge, opportunity, encouragement, value of benefits from activities and appreciation, and the existence of support (Putman in [40,41,42]).

To encourage public participation, recovery activities must be able to touch and be felt by the community. One aspect that can be felt by the community is economic recovery through the development of home industry. Home industry is a productive activity carried out by women. Characterized by the location of activities is integrated with their homes. Smit [43] states that the role of women in home industry development is crucial. Meanwhile, Kholil et al. [44] state that the role of women through the home industry is very large in supporting the family economy, to support the sustainability of studies, health and family harmony. Home industry development often faces problems such as: (1) limited capital, (2) untrained workforce; (3) low technology, and (4) limited market coverage. However, home industry has a very large role in improving people's welfare and providing employment [45] (Sunarso 2010). To ensure business continuity, the development of home industry must be based on local superior potential [46,45]. Prayitno [47] states that the government must pay attention to activities that are able to absorb labor, especially women, in the countryside. To ensure the sustainability of development and economic growth, the social and economic recovery of post-earthquake areas in accordance with objective conditions becomes very important [48].

Home industry has proven a very large role in supporting the family's economy, and Trigona honey bee farming is one that is well known to many peoples in North Lombok, more than 60% of the peoples involved [49,29,30,32]. so it is necessary to increase the scale of business to improve people's income, and the economic and social activities of the community recover quickly. Trigona bee farming has been done by most of the community in North Maluku. Trigona is a species of social insects that live in groups forming colonies of 2,000 to 3,000 bees each. Moreover, they are very social and human-friendly and they live freely in forests. This kind of bees consists of 500 species classified into 5 kinds, namely: *melipona*, *trigona*, *meliponula*, *dectylurina*, and *lestrymelitta*. In Indonesia, 37 species are identified, 2 of them are in Lombok, namely *trigona sapiens* and *trigona clypearis* [50] (*Trigona* honey contains complex and complete nutrients, such as vitamins: (B1), riboflavin (B2), (B3), ascorbic acid (C), (B5), pyridoxin (B6), niacin, pantothenic acid, biotin, folic acid, and vitamin K; glucose, fructose, copper, zinc, and iodine [51,49]. The benefits of trigona honey include (1) source of energy, (2) source of nutrition, (3) anti-allergy, (4) overcoming anemia, (5) increasing body vitality, (6) preventing flu, stomach acid, typhoid, (7) increasing endurance, (8) preventing depression, (9) preventing hypertension, and (10) helping testosterone production [51,33].

The honey had benefits to improve body immunity, to control blood pressure, to accelerate recovery when wounded and degenerative disease, and can prevent free radicals. According to [52] trigona honey can also treat influenza, where Raudah [53] stated that there are many health benefit of trigona honey because there is propolis that can also function as anti-fungal, anti fungus, anti-bacterial and anti-inflammatory that is commonly used as active ingredients in cosmetics, creams and tablets.

To improve business scale of trygona home industry and farmer's income, a business model and supply chain development is needed that allows a fair distribution of income between beekeepers, collectors and the pharmaceutical industry. The business model will allow business actors (beekeepers) to sell their honey through related parties at a reasonable price. A business model is simply a plan describing how a business intends to make money. It explains the customer and how you deliver value to them and the related details of financing. Business models are widely used to map market potential and how to deliver products to the market/consumers. The business model that is quite popular is the Canvas business model. There are 9 important aspects that discussed in this canvas business model, namely: Customer Segment, Value Proposition, Channel, Customer Relationship, Revenue Stream, Key Resources, Key Activities, Key Partnership, and Cost Structure [54]. According to Anonymous [55] There are some advantages of canvas business model model : (a) The BMC provides a quick overview of the business model and is devoid of the unnecessary details compared to the traditional business plan.; (b) The visual nature of the business model canvas makes it easier to refer to and understand by anyone. © It's easier to edit and it can be easily shared with employees and stakeholders; (d) The business model canvas can be used by large corporations as well as startups with just a few employees, (e) It clarifies how different aspects of the business are related to each other and (f) You can use a BMC template to guide a brainstorming session on defining your business model effectively. Osterwalder & Pigneur further distinguish business model innovation into five parts, namely: Resource-driven, Offer-driven, Customer-driven, Finance-driven, and Multiple-epicenter. Therefore, the model business can be a guide for running this home industry more effectively.

To build a fair value chain, it is also necessary to design added value at every stage of the supply chain, this will also encourage the growth of a fairer competitive system among business actors [56]. Value chain system provide different management principles to create in the designed planning and controlling of the network of supplies in order to synchronize the variability of consumer and market demand with the uncertainty of suppliers capacities; while Tardi [57] and Zamora [58] stated that value chain is a business model that describes the full range of activities needed to create a product or service. For companies that produce goods, a value chain comprises the steps that involve bringing a product from conception to distribution, and everything in between—such as procuring raw materials, manufacturing functions, and marketing activities.

3. METHODS

The analysis of business model of home industry based on local potential excellence for post-earthquake economic recovery and during Covid-19 pandemic involved many actors, among others local government, provincial government, and central government; businessmen, academicians, and local community; so, it was extremely complex. Post-earthquake social and economic recovery was an extremely complex and dynamic activity. Therefore, the approach used could not be reductionist or mono-discipline, but it had to be holistically with multidiscipline. Based on the fact, the approach in the study was combination inductive and deductive approach. Data collection based on expert discussion involved 9 experts represent policy maker (government) 3 people, business actors (3 people), academics (2 people) and NGO (1 people) as a deductive approach, while for inductive approach data collection through questionnaire to 35 selected respondents using a purposive sampling approach.

The data analysis used for deductive approach is SAST (Strategic Assumption Surfacing and Testing) and Analytical Hierarchy Process (AHP) with CDP software tool, and statistical descriptive for inductive approach. SAST was chosen to identify the important and strategic factors in developing the business model of trigona honey home industry and AHP was used to identify the most appropriate strategies in enhancing the business scale to increase the income of the community. By the AHP analysis priority programs according to objective condition can be identified [59].

4. RESULTS AND DISCUSSION

Trygona bees have been developed by most of Nort Lombok peoples for a long time and has become a pedestal for the community. Carried out from generation to generation. Based on the result of review in the field, most of the trigona bee farming community ran their business in a very simple way

and hereditarily. They started the business by finding the colonies in forests. After finding them, they made boxes with size 15x35x20 as shown in the Fig. 1.



Fig. 1. Boxes for colonies of trigona bees

After the bees gathered and there was a lot of honey, then harvested by opening each box. Each box contained honey, the paste to make their beehives that contained propolis, and male flower's pollen, as shown in Fig. 2.



Fig. 2. Boxes of trigona beehives made from wooden boards

Harvesting is usually every 2-3 months; each bok is an average of 150-200 milliliters; beekeepers usually store honey in buckets or basins before selling. Usually the collectors come every harvest, but during this covid 19 pandemic, users immediately come to buy. Trigona honey home industry is a very prospective activity without capital and maintenance costs, because it only provides a place beside the house and does not have to provide feed, every month it can be harvested. The average production of each box/month ranged from 150 to 200 ml with price of IDR 200,000 to IDR 300,000/500 ml. Based on the result of survey, most of trigona bee farmers stated that their activities really helped their family economy. The average of their income from trigona bee farming was IDR 5 to 7 million/month. During the earthquake, the activities stopped, but they could be back on the move immediately. The result of interview with the businessmen shows that the activities of home industry did not get impacted by Covid-19, even the demand for trigona honey kept increasing while the production could not satisfy the needs. While other business activities such as restaurants, weaving handicrafts, accessories and clothing have stopped due to the impact of Covid-19. This shows that

during the COVID-19 pandemic, suitable business activities to be developed are health products or food based on superior natural resources.

The interview results also showed there are some problems faced by the bee farmers: (1) the traditional cultivation system; (2) the nursery system; (3) no value added; (4) market access, and (5) business management.

The system of trigona bee cultivation could be said as very traditional because they did it by making boxes around their houses with minimum facilities. The bees were left finding their own food from the plants around them without any special feeds. They did not have special care to prevent diseases or other pests. In terms of nursery system, the trigona bee larvae were obtained from the forests by taking some colonies there which consisted of 2,000 to 3,000 bees. The colonies were taken from tree branch, then placed in boxes with size 32x15x15. There was no selection for excellent species of bees, but all of the trigona bees in the colonies were taken. With such natural nursery system from the forests, the trigona bee farmers were unable to improve their productivity. In addition, with traditional cultivation system, there was no treatment of giving special feeds to produce honey with special flavour.

Lab analysis result showed, that this honey has a complete nutrition content such as : (1) *L-Serin/Phosphatidyl Serin/C₃H₇NO₃* (amino acid), *L-glutamate acid/2S-2-aminopentandioat acid /C₅H₉NO₄*; (3) *L-Fenilalanil (Phenylalanine)/ C₉H₁₁NO₂*, (4) L-VALIN (*Valeriana officinalis*) /C₅H₁₁NO₂,(5) L-LISIN/ *L-Lysine /C₆H₁₄N₂O₂*, (6) *L-TIROSIN/ Tirosina/ C₉H₁₁NO₃*, (7) *glucose/C₆H₁₂O₆* and *fructose/ C₆H₁₂O₆*, and others. These nutrients can increase immunity of the body for facing of pandemic Covid-19.

The honey produced was directly sold, without any special treatment or packages, so there was no value added. Market access for the trigona bee farmers was unlimited, their product sold without promotion and marketing because the demand increased during the Covid-19. The result of interview with the businessmen revealed that they ran the business without any special management and there was no special training. There was no special management in terms of business management, financial management, and marketing. Government’s attention was not optimal either, especially related to the cultivation system and marketing. In general, the model of trigona honey marketing chain based on the result of analysis in the field can be illustrated as the following:

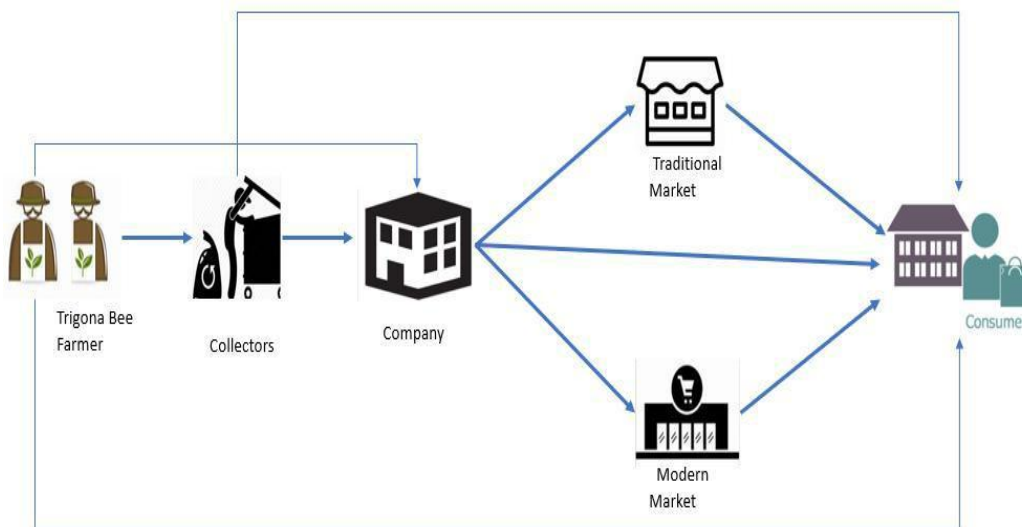


Fig. 3. Trigona honey supply chain

Based on the results of surveys and interviews with the actors involved, includes beekeepers, collectors, community leaders and academic, showed that mostly the trygona business actors is

woman who play a big role in the family economy. This relevant with Beltramino et al. [60]. The trigona bee farmers sold their product to a collector in their village or directly to a honey/herbal company in Mataram City; or even directly to customers who needed it. The price of trigona honey from trigona bee farmer is IDR 200,000 if it is sold to collectors, or IDR 225,000-250,000 to Company, and IDR 250,000 to customer. While the price from collectors to company is IDR 250,000; and from company to traditional market or modern market is IDR 275,000. Customer bought IDR 300,000 both from traditional or modern market. The trigona honey from the company has been added with other ingredients, so that it has better nutritional content and is also packaged in attractive packaging. This marketing chain showed that trigona bee farmer have not got the maximum price, because the price difference to consumers is still quite large. Trygona honey 's current business model as follows :

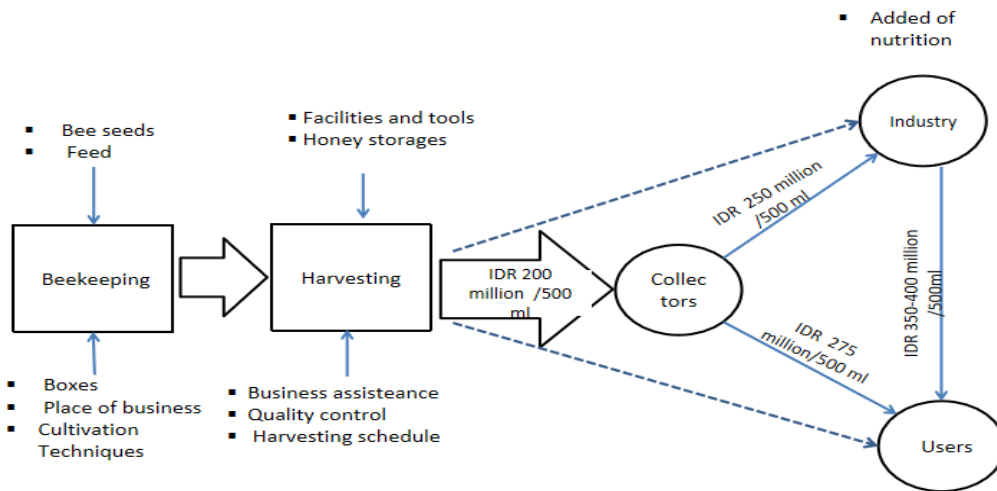


Fig. 4. Current trigona business model

There is no association or cooperatives at the bee farmers that could accommodate the honey product, or price standardization. The position of bee farmers was mostly weak, they did not have any bargaining power or they were only the price receiver, while the collector who was usually given capital by the company could keep the price down so it was relatively cheap. Direct sales to end customers rarely took place, there were only few buyers. During the Covid-19 pandemic, the demand for trigona honey continued to double, thus encouraging other people to join in opening up this home industry activity. The number of trigona honey business actors continues to increase, and now almost 70% of the community has been involved in this activity, while other activities such as restaurants, food and beverage were stopped, due to pandemic covid 19.

To increase farmer's income it is important to build a fair value chain among the parties concerned, in accordance with their burdens and risks. Based on experts discussion results, fair share value chain as follows:

Value chain interconnectivity system is very important to facilitate farmers (beekeeping) with market as link and match institution, which can be represented by BUMDES (Village-owned enterprises). BUMDES can provide capital loans for farmers, as well as collectors; through the BUMDES all the needs of beekeepers will be protected, prices can be determined together, and this will encourage a fairer system. In general the business model of trigona honey with the role of BUMDES as follows:

By observing the trigona honey marketing chain, it required intervention by local government to develop fair marketing chain that gave more benefits to bee farmers. In addition, it also required skill enhancement of the businessmen to be able to conduct treatment that added value to increase their income. More than 90% of business actors expected the availability of trainings on cultivation and business management to enhance and sustain their activities. Based on the discussion with the experts, there were 14 aspects determining the success of development of home industry of trigona bee farming, namely: (A) Human resources; (B) Cultivation technology; (C) Market access; (D) Price;

(E) Support of policy; (F) Institutional of businessmen; (G) Package; (H) Facility; (I) Accompaniment; (J) Nursery; (K) Value added; Land availability; (M) Business sustainability; and (N) Community involvement. From the 14 aspects based on the result of SAST analysis, it shows that Cultivation Technology (B), Accompaniment (I), and Nursery (J) became the most strategic factors (important and certain) to develop the home industry. It means that trigona honey productivity could increase if the larvae used were the excellent ones and their cultivation implemented suitable cultivation techniques through appropriate treatment and feeding, as shown in Fig. 7.

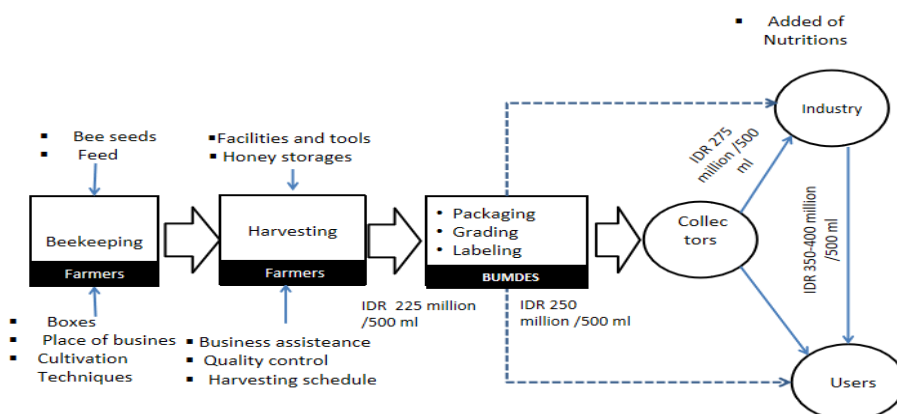


Fig. 5. Fair share value chain between business actors

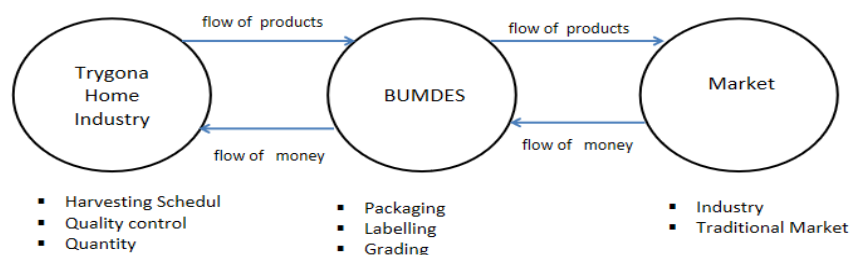


Fig. 6. Business model of Trygona honey with the role of BUMDES

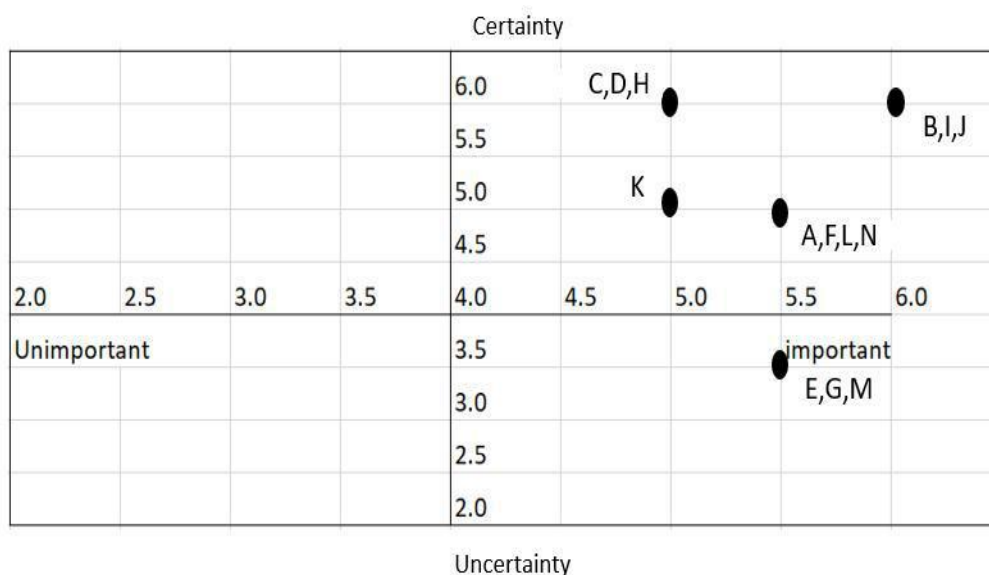


Fig. 7. Result of SAST analysis to increase production and income of trigona bee farmers

To obtain excellent larvae, it required nursery activity done by the government through cross-breeding or others. Cultivation technology could be implemented by trainings or accompaniments provided by the government free of charge. Accompaniment was not limited to the aspect of cultivation, but could also include business governance and financial management.

Fig. 7 also indicates that Market Access (C), Price (D), and Facilities (H) were the three factors that had to be certain but their level of importance was low. Market access was not a problem because the results of production were entirely sold at the place. Price was not a problem either because the demand for honey was higher than the production or the demand was unable to be satisfied yet. It was similar to business facility, with whatever there were, they could produce honey anyway. Meanwhile, Support of Policy (E), Packaging (G), and Business Sustainability (M) were three crucial factors but their certainty was low.

Based on expert discussions involving the government, business actors, academics, collectors, and NGOs each represented by 2 people, showed that there are 4 main actors involved in the development of trigona honey home industry namely: Regional Agency of Planning and Development (ACT-1), Business actor (ACT-2), Regional Agency of SME (ACT-3) and Field companion (ACT-4); while the 4 factors are (1) employment (Fac-1), (2) sustainability (Fac-2), (3) welfare (Fac-3) and government policy (Fac-4). in addition, there are also 5 main programs and 4 alternative strategies; The 5 programs are (1) training for business governance (Prog-1), (2) nursery (Prog-2); (3) packaging (Prog-3); (4) promotion and marketing (Prog-4) and (5) cultivation training. And 4 strategic alternative are (1) production centers development (Strategy-1); (2) strategic partner development (Strategy-2), (3) Price (Strategy-3) and (4) Added value development (Strategy-4).

Based on AHP analysis showed that business actor (**Act-2**) have the most decisive role in improving the business of trigona honey home industry, while the sustainability (**Fac-2**) is the main factor. For increasing their income, the most suitable program in accordance with objective condition is nurseries (**Prog-2**), to produce superior seeds with high production and resistance to disease. In line with the actors, factors and priority programs, added value strategy (**Strategy 4**) is the most appropriate priority according objective condition. This mean that nurseries program and value added strategy must be the first priority for guidance by the local government, as the Fig. 8.

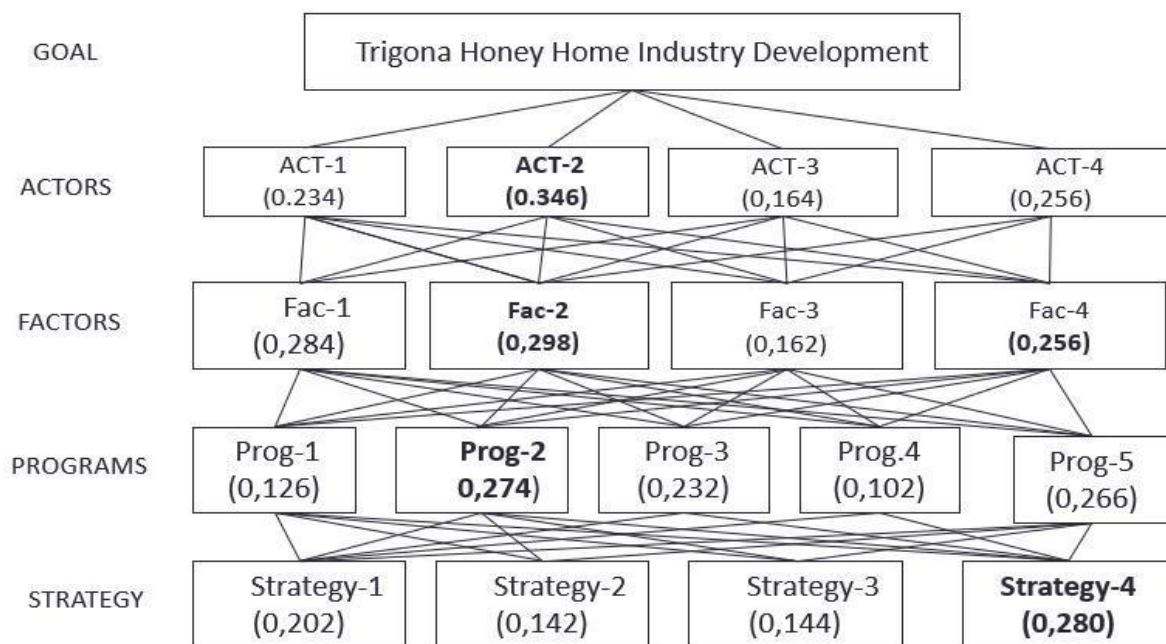


Fig. 8. Priority strategy of trigona honey home industry development

5. CONCLUSION

Trigona bee farming is a type of home industry that has bright prospect in the future, and pandemic Covid-19 has no impact to the demand of trigona honey. Therefore, community economic recovery based on home industry of trigona bee farming can accelerate the growth of community economy. Nursery, and accompaniment are the three factors with the highest level of importance and certainty to develop home industry of trigona bee farming as an effort to sustainably recover the economy after the earthquake in North Lombok. Nurseries and cultivation are the two priority programs that suitable with the objective condition, while value addition is the most appropriate strategy to increase business actor's income. The most appropriate business model to increase farmers' income is involving BUMDES as an interconnectivity institution that protects the interests of farmers and buyers.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Biography of author(s)



Prof. Dr. Ir. Kholil, M.Com, IPU
Faculty of Engineering, Sahid University, Jakarta, Indonesia.

Research and Academic Experience: He was a senior researcher, more than 65 researches have been done since 2010 which funded by national and international donor. He also as a senior lecturer in Sahid University and IPB, 8 scientific books have been written and published.

Research Area: Environmental management and modeling, and social.

Number of Published papers: 43

Special Award: The best researcher in Depok, and the most productive lecturer in Sahid University.

Any other remarkable point(s): Rector of Sahid University; Secretary General of the Forum of Indonesian Professional Organizations; Advisor for Indonesia Environmental Experts Association, Vice Director of Indonesian System Association; and Director of Regional Development Institute.

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- (1) P. Venkata Rami Reddy, ICAR-IIHR, India.
- (2) Seyed Mojib Zahraee, RMIT University, Australia.
- (3) Shyama Kumari, Bihar Agricultural University, India.