INTERNATIONAL JOURNAL ON MANAGEMENT AND EDUCATION HUMAN DEVELOPMENT

J. Management & Education Human Development

ISSN: ISSN: 2775 - 7765
web link: http://www.ijmehd.com

The Model of Agrobusiness Partnership of Trigona Honey Bee Which Was Developed by The Community Around the Forest Area in Amonggedo District, Konawe Regency, Southeast Sulawesi Province - Indonesia

La Panga[1],Wayan Puguh [2], Erni Dangi [3], Hastian[4]

[1,2,3,4] Post Harvest Tecnology Department of Agriculture Faculty of UNSULTRA

Received: 20/08/2021 Accepted: 26/11/2021 Published: 13/02/2022

Representative e-mail: ir.lapanga61@gmail.com

ABSTRACT

This study aims to develop an Agribusiness partnership model for Trigona Honey bee, to the community around the Forest Area in Amonggedo District, Konawe Regency, Southeast Sulawesi Province. The Research method used was descriptive qualitative analysis. The results of this study obtained several information's: (1) Identification of the biological attributes and habitual of the Trigona honey bee, as well as the perception of the community around the forest area towards the Trigona honeybee, (2) TheDesigning of the Agribusiness Partnership model, based Constrain factors those are: a). Production management of Trigona Honey Bee cultivation, b) Management of facilities and infrastructure for the production of Trigona honey bees and their institutions, c) The application of technology for Harvest processing of the Trigona honey bee, Sp, d) Marketing distribution channels and other trading partners. (3) Developing of the Model Agribusiness partnership of Trigona honey bee which was developed by the community around the forest area in Amonggedo District, Konawe Regency. (4) The analysis and validation of the success level of the Agribusiness partnership model for the community around the forest area is at an average of 87.5% or very good category evaluation model. 5. The validation of Agrobussines partnership model with very good category, are shown the prospectively and sustainability for develope in community around the forest area in Amonggedo District and Konawe Regency Sout east Sulawesi Province.

Keywords*: Model, Partnership, Agribusiness, Trigona's. Community, Forest.*

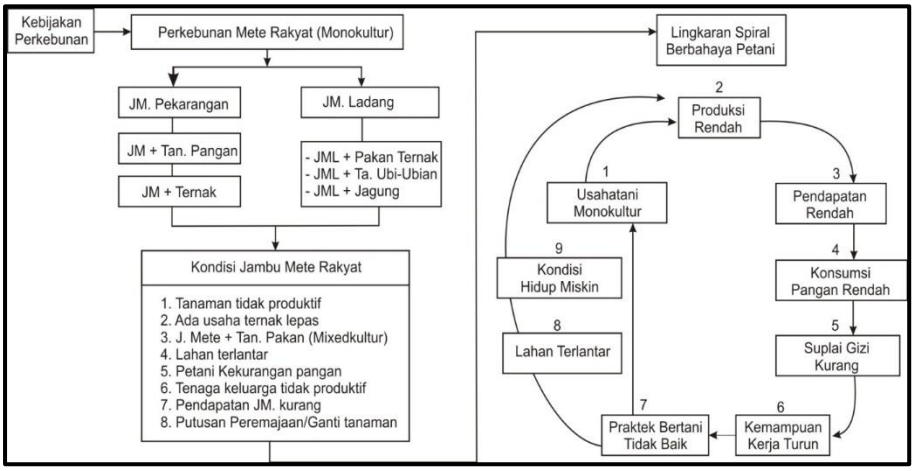
I. INTRODUCTION

The agricultural development model in this disruptive era provides a strengthening and refocusing of National cord development. It is due to the contribution of the agricultural sector in the development especially in national economy, which put this sector occupies a vital position. This sector able to stand in the vital position due to several factors: (1) Sources of supplies of food and raw materials needed by a country, (2) Large demographic pressures in developing countries and incomes that causing the demand to continue to increase. (3) Provide the factors needed for the expansion of other sectors, especially the industrial sector, such as capital, labor and raw materials. (4) The basis of important market relationships and can create a spread effect in creating a forward and backward linkage that contributes greatly to the development process. (5) Sources of foreign exchange needed for development inputs and sources of employment and income from the population. The implementation of the determinants of agricultural development, both traditional and modern agriculture, is expected to provide a multiplier effect on human life in a sustainable manner (Indranada, 1980, Mery, V. Gold, 1999, Mardikanto, 2009).

Sustainable agricultural development can be done through an Agribusiness approach, both on farm and off the farm. The implementation of the Agribusiness model is set in 4 (four) pillars, namely; (1) Farming, (2) Procurement of production facilities and infrastructure as well as supporting institutions, (3) The application of farming product processing technology (Agro-industry) and, (4) Marketing distribution. The key to the success of agribusiness depends on the capital and investment owned by the Funding Farm or farm capital, institutions (organizations or partnerships with farming institutions), aspects of community empowerment and law

enforcement in agricultural business agreements that must be carried out universally, comprehensively and integratedlly. In this disruptive era, agricultural development is faced with the challenge of policies that are not in favor of the people and become a poverty trap like a dangerous spiral chain for farmers, and new challenges due to global climate change or VUCA (Volatility/Verisability, Uncertainty, Complexity, Ambiguity).

The diagnosis of the New Challenger for the development of Community-based Agribusiness Models in the Disruptive Era shows the Dangerous Spiral Circle Chain (Poverty Trap), La Panga, 2016 as follows:



Scheme 1. Poverty is caused by: 1. Farming pattern (F), 2. Productivity (P), 3. Income (I), 4. Consumption (C), 5. Nutritional status (G), 6. Labor ability (L) and 7. Powerless/poor farmers (Un). Poverty level are function of = f (F, P, I, C, G, L, Un).

The human resources in Amonggedo Subdistrict, Konawe Regency, Southeast Sulawesi Province are ex-transmigrant of Java and Bali who stayed in areas that still have the potential to develop areas based on the potential of Agribusiness natural resources. However, no matter how strong the human resources is they still have low understanding in the development of non-timber forest product-based Agribusiness (NTFP) and or the limited use of various natural resources in forest areas. The Trigona sp bee is one of the biological diversities that has high economic value and is a leading commodity of Non-Timber Forest Products (NTFPs) developed by the community in the New Amonggedo Village and Mataiwoi Village, Amonggedo District, Konawe Regency. The government and society have pioneered the cultivation of the Trigona sp bee by forming a farmer group to be developed as a sector of economic improvement for the community.

The condition of the community with a lot of productive human resources is marked by the existence of community members who is at productive periods aged 20 to 50 years but are illiterate, it is amount 127 people, this is due to various factors (source: PKBM Forum and Konawe District Education Office, January 2020).

II. RESEARCH METHODS

2.1 Determination of Location, Population and Sampling

The research location was determined based on a preliminary survey that the livelihoods of the people in Amonggedo District were generally farmers and civil servants. However, in farming, food crops and plantations, animal husbandry, forestry and mining can be grouped. Amonggedo District is an area that is crossed by the Lahumbuti River Basin and the Amonggedo Forest area so that farmers can carry out farming expansion in the forest area in the form of a forest farmer group (KTH). Besides protecting the forest, forest farmer groups can also rehabilitate open forest areas caused by forest and land fires (Karhutlah) as well as mining activities. One form of farming in the border areas of forest and cultivation areas is the use of non-timber forest products such as the processing of Appis honey and Trigona honey, Sp. The Trigona honey bee cultivation business is very friendly to humans and the hive is easy to move and produces honey, pollen and propolis products that are very beneficial for humans.

The population and sampling in this study were all people who had attempted to cultivate honey trigona, Sp in Amonggedo District, Konawe Regency. Communities who have been trying to cultivate the Trigona Honeybee are scattered in Amonggedo Baru Village and Mataiwoi Village. The number of community groups that are active in the Trigona honey bee business is still limited to only 30 people, thereby the sampling taken is 30 people (total population sampling).

2.2 Data Collection Method

The research method used is descriptive method. The development of the Agribusiness model begins with a preliminary survey. Data retrieval of Agribusiness Honeybees Trigona, Sp was carried out in two villages and farming groups in Amonggedo District with the following methods: (1). FGD on both groups of respondents through guided interviews. (2) Agrobusiness Technology Transfer (ATT) method. ATT can be carried out through

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

counseling and training activities, experiments and partnerships, coaching or mentoring based on virtual community vocationally or online based. (3). Method of Agribusiness Capacity building (ACB). To increase the capacity of Trigona Honey Agribusiness, counseling and training activities (Transfer) of technology and trigona sp bee agribusiness groups can be carried out, including: a). Biological attributes and honey bee farmer groups. b) Prospect of developing honey bee farming Trigona, sp. c) Transfer of harvesting technology and post-harvest handling Trigona honey bees, d).Transfer of technology for artificial nesting and tracking of the queen bee Trigona, e). Agribusiness technology transfer starts from business management, processing, post-harvest handling, labor recruitment, financial bookkeeping, and marketing of processed products to consumers, traditional markets and supermarkets as trading partners.

Trigona honey bee cultivation experiment with entrepreneurship motifs and innovations as follows:

a. Prepare investment box container (STUP) for the maintenance of Trigona spp insects as nest material and raw material for queen bait.
b. Setting up an institutional organization for honey bee farmers and a place for counseling or partner group studios.
c. Prepare investment in processing equipment and packaging for honey and or pollen products (masks).
d. Carry out marketing strategies for honey and pollen products as a type of quality honey.

Operational steps needed to start a Honey Bee Cultivation Business Trigona, sp. are: (1) providing assistance in the practice of moving Trigona habitat from trees to new habitats (STUP) from partner groups of universities and related institutions so that they have adequate knowledge, (2) forming a partner group for seeking Trigona Sp. Bee Colonies with forest farmer groups. and local traders.

2.3 Data Analysis Method

1. Elements of evaluation and research description.

The assessment system of the Agribusiness Partnership Model developed by the Community around the Forest Area can be analyzed descriptively – qualitatively under the following indicators:

a. Elements of ability: 1. Cooperation, 2. Business partnerships, 3. Managing business and facilities and infrastructure systems according to quality standards, 4. Increasing income 5. Cultivating Trigona bees, sp and feed. 6. Realizing production in good quantity and quality.
b. Skilled elements: 1. Skilled in moving colonies from natural resources to artificial colonies (stup). 2. Skilled in making stup (box) cultivation. 3. Skilled in processing and post-harvest handling. 4. Skilled in product processing and packaging technology for honey bee products. 5. Skilled in administration, and network marketing on line.

Category The level of success of the Trigona Honey Agribusiness Model, :

a. Category Incapable and less skilled score = 1.
b. Category Able but not naturally skilled score = 2.
c. Category Less capable but naturally skilled score = 3
d. Category has ability and skill score = 4

2. Standards for Assessment of the Success Rate of Agribusiness Models.

The value scale according to the Likert scale in the description is assessed using the assessment criteria:

1. Very good: 76 - 100 (%), 3. Moderate: 50 - 75 (%)
2. Good: 26 - 50 (%) 4. Poor: 25 (%) and below

III. RESULTS AND DISCUSSION

3.1 Preliminary Research, the Motivation of Agribusiness Partnerships Building

In building a network of partnerships, it is necessary to have principles that must be mutually agreed upon so that they are strong and sustainable. These principles include: (a) Shared Vision-Mission. b) Trust is the basic capital in building a synergistic and mutual partnership. (c) Mutual Benefit(d) efficiency and effectiveness by synergizing several sources to achieve the same goal. (e) dialogic communication, (f) a strong commitment partnership will be built strong and permanent if there is a commitment to each other to the agreements made together.

According to Mc Donald (in Syaiful 2008: 149), the motivation that underlies the community to carry out the entrepreneurship process is divided into two things, namely (a) Intrinsic motivation, is the motives that become active or functioning do not need to be felt from the outside, because each individual has already there is an urge to do something. The motivation in the individual that underlies the entrepreneurship process is the desire of oneself, the compulsion due to the lack of economy, the desire to earn one's own income and others that come from within the individual. (b) Extrinsic motivation, are motives that are active and functioning from outside the individual. People's motivation in entrepreneurship is influenced by awareness of their own needs (intrinsic) and driven by the social environment (extrinsic) in which they are active. Entrepreneurial motivation requires fighting power to succeed, willing to learn to see the success of others, having a strong drive to overcome all obstacles in entrepreneurship.

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

Non-timber forest products (NTFPs) are forest products, both vegetable and biological, along with their derivative products and their cultivation, except for wood which has been stipulated by the Minister of Forestry Regulation Number 35/MENHUT-II/2007 concerning Non-Timber Forest Products. One of the non-timber forest products (NTFPs) that has great potential hidden in the forest and has not been excavated to be managed sustainably until now is the honey bee trigona sp (Asmanah, & Kuntadi, 2012). One of the villages that has been found with the management of honey bee cultivation as NTFPs is one of the centers for the development and production of trigon asp honey bees in Amonggedo. One of the efforts to increase the production of trigona,sp honey bees is through the provision of motivation or encouragement to farmer groups. Motivation is an impulse that arises from within a person based on the need so that an activity carried out achieves a certain goal (Wahjosumidjo, 1987).

3.2 Atributes Biological Characteristic of Trigona and Growing the Agribusiness spirits.

The development of Indonesian beekeeping is a very good business opportunity for rural communities. Rural communities generally work in the agricultural and forestry sectors and make forests as their source of life. Indonesia's forest potency still has a variety of flora and fauna, and various forms, both in the form of protected forests, production forests, natural forests for wildlife reserves and natural resource conservation forests. Potential Indonesia's biodiversity is very high, such as various types of bees, various types of forage plants, various types of environments suitable for the development of living things. The benefits of beekeeping are: a) Farming innovation, b) post-harvest handling for products; honey, beepolen & propolis, c) Efforts to increase income, d) Fulfillment of community nutrition, e) Support the preservation of biological natural resources. Types of bees that have potential for cultivation are Trigona, sp. There are more of raw propolis products, friendly to humans, not as much honey as Apis bees, and they are also young to adapt to new environments. Trigona is a social insect, which lives in groups to form colonies. One bee colony has 300-80,000 heads. Identified 500 species grouped into 5 genera, namely Melipona, Trigona, Meliponula, Dectylurina, and Lestrimelitta. Trigona has 11 sub-genres. Spread over Mexico, Argentina, India, Sri Lanka, Taiwan, Salomon, Australia and Indonesia. Indonesia identified 37 species, and 2 types of Trigona of which are located in Lombok, namely Trigona sapiens and Trigona clypearis.

Tabel 1. The Biological Characteristic of *Trigona Clypearis* and *Trigona Sapiens*,

No.	Charecteristic	Trygona clypearis	Trigona sapiens
1.	Colour of the head of afemale workerbee	Black to dark brown	black to dark brown
2.	Colour of mesosoma of a femaleworker bee	Tan	Tan
3.	Size of a female worker bee	the body length is 3,2-3,7 mm	the body length is 3,2-3,7
4.	The wing size including the horn ofa female workerbee	Sized 3,4-3,7 mm	Sized 4,2-4,5mm
5.	Mesopleuron on the back	Half haired	Half haired
6.	The anterior	Fully haired	Fully haired
7.	The malar	Rare and short haired	Rare, short, and wider haired
8.	The mesoscutum	Characterized by the very clear hairless bordres	Characterized by the very clear hairless bordres
9.	Male bees	Have the same colour as worker bees	Have the same colour as worker bees
10.	The size of male bees	The body length is 3,0-3,6 mm	The body length is 4,0-4,5
11.	The wing size including the horn of a male workerbee	Sized 3,5-3,8 mm	Sized 4,1-4,6 mm
12.	Hind tibia male bees	The size is wider and more flat	The size is narrower, convex and misaligned with the tip of its tongue
13.	Tergum on the back of male bees	Shaped Y and the tip of its tongue is pointed	Shaped Y and the tip of its tongue is pointed
14.	The abdomen colour's	Gray to black	Brown yellow
15.	Worker bees activities	Less agresive in collecting nectar and pollen	Agresive in collecting nectar and pollen
16.	Honey, beepollen and propolis prodection's	Less Honey and beepollen prodution's	More honey and beepollen production's

Source, Balitbang Technology HHBK West Lombok, 2018.

The Growing of agribusiness spirit of the Trigona Bee means that building the spirit of farmers to implement the 5 pillars of Agribusiness as follows:

- **Farm management, is the development of Trigona Cultivation**.

It is starting with the discovery of the natural colonies in various types such as ant nests and slonsong. The transfer of the colony to the stup is the first step in the beekeeping technique of Trigona, Sp. Trigona sp is a type of stingless honey bee that can be found in tropical areas and some areas with sub-tropical climates. According to Inoue, et.al. (1984) in Supriyadi, 2020, several variations of body organs and color degradation have not been able to determine the type of Trigona bee, sp. due to the closeness of the sub-genus. Trigona, sp is often known by local names such as klenceng (Java), gala-gala and teuweul (Sunda).

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

According to Sakagami, et.al. (1990) in Indonesia there are several types of Trigona sp bees that have been identified, namely: T. Laviceps, T. Itama, T. Drescheri, T. Apicalis, T. taracica and T. Terminata. Trigona bees, sp were found nesting in hollow places such as logs, tree holes, and gaps in house walls (Michener, 1974) in Supriadi, 2020. The entrance to the nest is made of plant resin mixed with soil and mud, with different shapes and colors depending on the species. The hive is a place for a bee colony to shelter, store food and produce. The structure of the Trigona, sp bee hive is different from the Apis honey bee, where in the Trigona, sp. The hive is the place to store pollen and honey (storage pot) is separated from the brood chamber. The daughter cell is where the queen lays eggs and where the daughter develops from the egg phase to the imago. The developmental phase of the Trigona, sp bee includes; eggs, larvae, pupae and imago. After hatching into imago, this nursery room cannot be reused as in apis bee nests (Michener, 2007). The storage pot and brood chamber are reinforced by an involucrum made from a mixture of tree resin, wax, and soil (Roubik, 2006). Storage spot is a place to store pollen and honey, round in shape covered with wax attached to the walls of the hive. Worker bees look for food throughout the day and flowering season, excess food is stored in storage pots, the more honey produced by bees indicates the more abundance of feed in the surrounding environment (Gojmeracc, 1983, Supriyadi, 2020).

Trigona Honey Agribusiness partnership development has the following advantages:

- **The advantages of Trigona,sp bee cultivation**:
  a) Can be done permanently, b). No need for intensive maintenance, c). The variety of feed sources varies, d). Does not sting, e). Does not require special equipment, f). Relatively pest and disease resistant and there is no famine g). Easy to adapt to new environment.
- **Cultivation and Transfer of Trigona Bee Colonies**.
  Generally, the space in natural nests is relatively narrow, so that for the purposes of cultivating colonies, it is obtained from nature and takes a long time. Therefore, it is suspected that this Trigona bee colony can be manipulated and moved to another place through an artificial colony (stup artificial) because the bees do not sting and can adapt. There are three types of colonies found in the field, namely the type of ant nest and the type of sling on weathered wood or an entrance similar to that of a gun and or the type of insect bites from beetles on plantation crops.
- **Making Stup (Artificial stup),**
  It is necessary to take into account the conditions of humidity and air aeration in the hive and the distribution distance of Trigona, sp. in search of nectar between 4-6 km. Stup construction is intended to expand the habitat area and nest raw materials must use old or almost weathered wooden boards, with a size of 40 x 20 x 20 cm, which are provided with entrances such as decay tubes. For the transfer of the colony, part of the nest can be taken and then placed in an artificial stup box and then smeared with brown sugar on the entrance sleeve so that the queen can trace the scent of the moved nest. The spread of the queen takes place naturally from natural habitats to artificial stup. Another method to speed up colony removal is to cut the nest wood and then transfer it to an artificial stup rearing site. This is intended so that the adaptation of the trigona bee with the stup is getting closer.
- **The selection of a location for placing artificial nests** (stup)
  Usually at the end of the wood behind the house, and a producer's hut is made such as a ward which is at most 5.0 km from the food source, both forest trees and agricultural crops. Air conditions that are somewhat suitable are the boundaries of forest areas and agricultural cultivation areas and/or the borders of forest areas with residential areas around watersheds (DAS). Things that need to be considered in choosing a location for Trigona, sp beekeeping in addition to climatic conditions are: (a). Availability of adequate food sources (b). Water needs are fulfilled, (c) Far from agriculture that uses pesticides
- **Maintenance during the Trigona bee cultivation process**.
  Maintenance activities that need to be carried out are:
  a. Cleaning the setup and its surroundings from dirt to avoid bee-disturbing organisms coming,
  b. Protecting Trigona honey bees from other insects and away from birds
  c. Check the bee colony every two weeks or every month to ensure development and health. Like the number of egg cells, honey bags and pollen bags do not increase, they tend to decrease in number and quality. (Field, 2020)

3.3 Use of Facility Production and Distribution

Means is the distribution of available feed around the habitat of the Tigona Bee, Sp., habitat modification of wood planks (stup), Bride's Tears Flower Plant, and post-harvest equipment. The spread of insects or bees is influenced by suitable geographical, geological and ecological factors, resulting in differences in the diversity of insects/bees. This difference is due to differences in climate, season, altitude, and types of food (Borror and Long, 1996). The complex behavior of the Trigona sp bee and its abundance make it a pollinator that plays a very important role in helping pollination success (Mechener, 2007.).

3.4 Harvest and Postharvest Handling (Agroindustry),

There are thousands of bee colonies of Trigona sp. in one hive. In a colony there are strata, namely; queen, worker bees, male bees and chicks. The queen is in charge of reproduction. In general, a colony has one active

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

adult queen for laying eggs and a virgin queen who is prepared if the average dies. Product diversification resulting from postharvest bee Trigona sp. are honey and bee pollen. Honey produced by worker bees comes from plant-produced nectar, a sweet liquid, from plant glands. Trigona honey contains vitamins such as vit. B1, B2, B3 and C, as well as minerals such as calcium, iodine, sodium, iron and magnesium (Sihombing, 2005). Pollen is a male reproductive organ in plants located on the anthers. In addition to pollen, worker bees also collect resin which is used as an ingredient to repair and protect the hive from fungal and parasitic attacks.

Products other than honey and bee pollen, are propolis that cannot be processed. According to Anggraini, (2006.) to produce propolis, working bees need to visit many plants that collect resinous sap. The sticky nature of propolis is used by bees to repair hives. Propolis is also used as a defense tool from microbial and fungal attacks because it contains antimicrobial compounds. Propolis has been known to have properties that are useful for health because it contains flavonoid and phenolic compounds.

The stages of harvesting and post-harvesting the Trigona bee are explained as follows:

a). Harvest is done towards the end of the spring, b). Harvest tools; container for honey (drain drain), a container for pollen and propolis (basin), a knife, spoon, filter and mask. c) Hygienic harvest using clean equipment with a drain system. d) Make sure the queen bee is not lifted, e). Spoon honey and separate from pollen, f). Leave some hives filled with honey and beebread as food reserves for the bee colony. g). Close the nest box and place it in its original position. h). Open the honey bag and drain in a closed place, i). Remove the bee bread (pollen) by slitting the pockets and ready to dry. j). Honey is filtered into a bottle and a water content test is carried out. k). The dregs of the bee bread bag skin and honey bag skin are ready to be processed into propolis**.**

Trigona honey yields vary by species. The production capacity of Trigona Itama or Trigona sapiens per-species honey reaches 500 ml of honey per colony every month. Meanwhile, Trigona laeviceps was only able to produce 100 ml of honey per colony of honey per colony every 3 months. There are three ways to harvest Trigona, sp honey, namely: 1. Traditional honey harvesting, 2. Semi-mechanical honey harvesting, 3. Propolis technology harvesting.

3.5 Marketing and Quality Management of Trigona Honey, Sp.

The honey product that will be released in the market is honey that has met the quality standards in the national trading system. The marketing concept applied to the Trigona honey agribusiness is the Marketing production concept (Kotler, 2005). This means that the marketing concept of Trigona honey is a marketing system that begins with the development of Trigona bee cultivation to produce honey products. However, the distribution of its products requires trading partners, distributors and sales so that we can create marketing distribution channels. Trigona, sp honey products consist of honey, bee pollen and propolis. Trigona, sp honey marketing system is determined by honey quality.

The quality of honey, bee pollen and propolis Trigona sp, is largely determined by proper post-harvest processing, reduction of moisture content, propolis extraction techniques and packaging. The desired quality standard is in accordance with the National Industrial Standard (SNI) as shown in the table:

Table 2. Quality Requirements for Trigona Honey Laboratories Test based on SNI 01-3545-2004

No.	Types of Test Laboratories	Unit	Quality standards
1.	Water content	%	Maksimal 22,0
2.	Ash content	%	Maksmal 0,5
3.	Level of reducing sugar	%	Maksimum 65
4	Sucrose sugar	%	Maksimum 5,0
5	Acidity	MI NaOH 1N/kg	Maksimum 50
6.	Solids that do not dissolve in water	%	Maksimum 0,5
7.	Lead Level (Pb)	Mg/kg	Maksimum 1,0
8.	Copper (Cu) Content	Mg/kg	Maksimum 5,0
9.	Arsenic (As) levels	Mg/kg	Maksimum 0,5

Source: SNI 01-3545-2004, Ridoni, R, et al.2020

The results of testing the quality of Trigona Honey in the Forest Farmers Group (KTH) Kahuripan Lestari in the New Amonggedo Subdistrict, Amonggedo District, averaged about 25%. The water content in honey is caused by several things, air humidity, type of nectar, production and storage processes. Nectar contains about 70% water when collected or sucked by bees. When worker bees' fan with their wings they can reduce the water content by up to 17%. And make honey with a water content of about 17-21% (Sihombing, 2005).

3.6 Development of Model Agribusiness Partnership of Trigona, Haney Bee.

The implementation of the Partnership Program and community development is carried out through the *Quarts Hellyx Partnership Benchmarking approach*. Quarts Hellyx partnership is an actor in the implementation of Agribusiness Partnership education related to non-timber forest product farming. The parties involved are Dikmas, Universities, farming communities and the private entrepreneurs as partners. So, the implementation of community partnerships in fostering Agribusiness Honey Trigona, sp is carried out by ABGC partners (Academic, Business, Government and community). The development of the Trigona Honey Agribusiness partner group through the Benchmarking method took place at the Honey Group KTH KPH in Laiwoi Unaaha. However, for its development, the implementation of community partnerships through the development of Agribusiness Bee Trigona sp is expected to collaborate with MSMEs, BUMD/BUMN through appropriate technology exhibitions,

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

lively MSMEs so that the development of partners of the Agribusiness Honey Trigona sp group grows and develops under the guidance of ABCG (Academic, Business, Community, and Government).

The results of a preliminary survey in 2019 in Amonggedo District as follows: (**1**) The main livelihoods of the community in general are farming and ranchers and forest encroachers, a small part of which are civil servants, (**2**) the average community education is junior high school / high school and the gross enrollment rate to tertiary level is low (**3**) the income of the community is still low and the status is above the poverty line, (**4**), The condition of public health is quite guaranteed because the level of availability of health institutions is sufficient (**5**) the circulation of agricultural products from fields/gardens to primary/traditional markets, **(6**) The geographical condition of the area is around the Lahumbuti watershed and the Amonggedo forest area.(**7**). Part of the land contains Nickel mining land so that the Community partly collaborates with the Company and mining workers. Commodity The Trigona honey bee lives in dead wood trees and is saprophytic so it is categorized as non-timber forest products (NTFP). This Trigona honey bee cultivation is still only known among the public, because the initial discovery of this bee house was discovered by forest loggers as well as Apis bee honey seekers in forest areas. Trigona honey bee, Sp. famous for its properties that are better than Apis honey but can adapt to its environment. One of the differences in the habitat of the Apis honey bee and the Trigona honey bee is that the Trigona honey bee can be moved to its place of life and has a higher adaptation level and does not sting. Community business partnerships to cultivate Trigona Honey Bees in the following scheme:

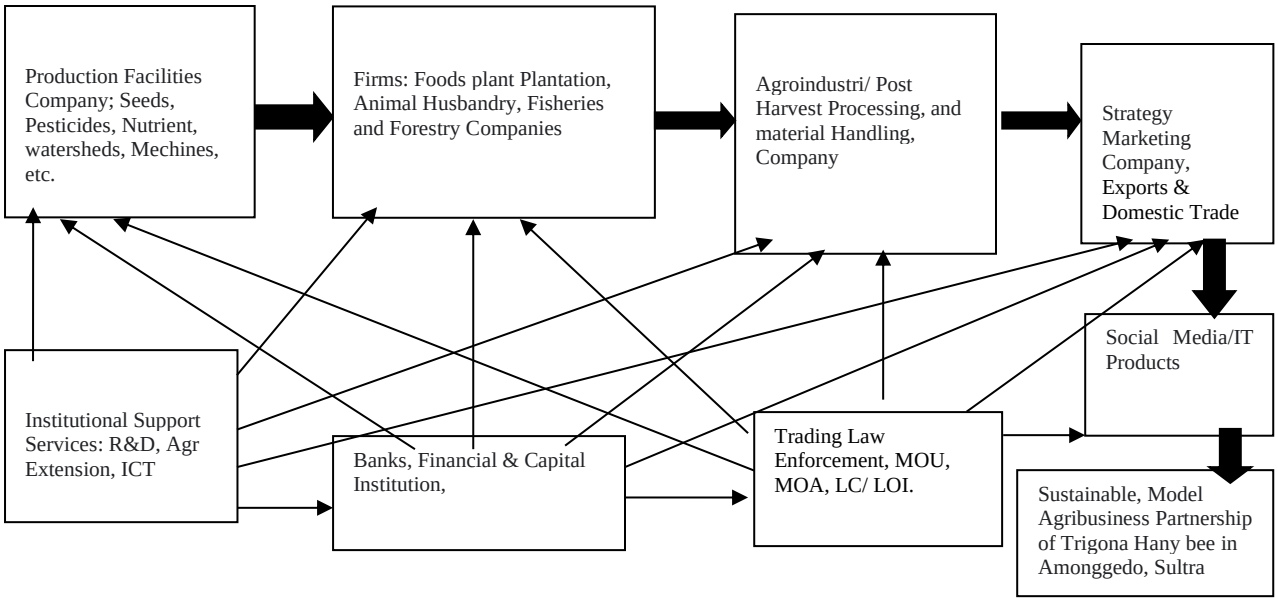


Figure 2. The Model of Agribusiness Partnership of Trigona,Honey Bee by develope of community around the forest area although Pentha Hellyx Approach in Amonggedo District Konawe Regency in 2020 (La Panga, et al. 2020)

3.7. Evaluation of the Success of the Trigona Honeybee Agribusiness Partnership Model.

The assessment of community partnership activities and agribusiness development of Trigona honey bees, sp in the Kahuripan Lestari Forest Farmers Group (KTH) Amonggedo Baru Village, Amonggedo District is described as follows:

Description of evaluation or assessment of community partnership activities in honey bee Agribusiness Trigona, sp. as follows:

a. Capable and Competent categories include; (1) cooperate, collaborate and coordinate, (2) conduct business partnerships, (3). Manage the business optimally according to quality standards. (4). Increase farmers' income, (5) Cultivate Trigonasp honey bees. (6) realizing quality and quantity production with quality assurance.
b. Categories, Skilled include (1). removal of the Trigona Bee colony, sp. (2). Making a stup box as a place for bees to live (artificial habitat). (3). Operate tools and materials for both cultivation and post-harvest. (4). Placing the source of Trigona sp. honey bee feed. (5). Production management with the application of appropriate technology. (6). Build a network of marketing and trading partners online.

Based on the formulation of determining the success of the Trigona, sp Honey Agribusiness development model in Amonggedo District, the criteria are: (1). The success rate is high or very good if the farmer is able and has the skills to manage Trigona sp honey agribusiness. (2). The success rate is good if the farmers are able but less skilled in managing the farm, (3) the success rate is moderate if the farmers are not capable but have sufficient agribusiness skills. (4). The success rate is less (low) if the farmers are not capable and also lack skills in

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

Agribusiness. Transformation The results of the assessment of the success rate of developing the Trigona, sp Honey Agribusiness Model in Amonggedo District, Konawe Regency are presented in the following table:

Table.10. Recapitulation of the assessment of the success of the Model Agribusiness Partnership of Trigona Hany bee for the community in the Amonggedo District, Konawe Regency. 2020

No	Rated aspect	Ability after Coaching (%)	Ability after Coaching (%)	Total Ratio (%)	Information
1.	Building Relationships & Cooperation	0,50	0,50	1,00	
2.	Farming Partnership	0,50	0,50	1,00	
3.	Entrepreneurial Motivation	0,50	0,25	0,75	
4.	Organizations & institutions	0,50	0,25	0,75	
5.	Building a Trigona Cultivation Business	0,75	0,75	1,50	
1.	Procurement of production facilities & infrastructure	0,50	0,25	0,75	
2.	Harvest & Postharvest Technology	0,25	0,25	0,50	
3.	Trigona Honey Product Marketing Management	0,50	0,25	0,75	
4.	Total & Average Score capable & skilled in farming Trigona sp (%)	4,0 or average 50,00	3,00 or average 37,50	7,00 or 87,50	
5.	Category of success Building the spirit of Honey Agribusiness Trigona, sp.	Currently	Less Skilled	Very Good	

Information:

Conclusion: Spirit of agribusiness Honey Trigona, Sp. in the Kahuripan Lestari Forest Farmers Group (KTH) in the Management of Non-Timber Forest Product Resources, including the very good category, La Panga, et al. 2020.

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the preliminary research, building relationships and research on the development of the Model Agribusiness Partnership Trigona Hany bee in Community around Forest area at Amonggedo District, the conclusions and recommendations as follows:

1. The Atributes of biological caracterize and habitual of the Trigona hany bee, had been identified aand founded at forest and cultivation area at Amonggedo District and Konawe Regency South east Sulawesi Province.
2. Designing of Agribusiness Partnership Model, based canstrain factor are carried out a system approach: Pentha Hellyx Partnership Benchmarking, on the empirical facts of the community around the forest by the Kahuripan Lestari Forest Farmers (KTH) group in Amonggedo District with the number of STUP developed reaching 100 STUP units.
3. Developing Technological innovation of Agrobussiness partnership Model of Trigona Honey Bee Cultivation are begin the technique of colonizing as an engineering adaptation of Trigona sp habitat by cutting down trees and chopping wood of the main habitat in the wild forest area then transferred to a new STUP as a production house.
4. The Analysis and evaluation of Agrobussines partnership model the Trigona Honey Bee at KTH Kahuripan Lestari is to produce Trigona Honey, Bee Pollen and Propolis with quality water content and packaging according to SNI.01-3545-2004. By Production and Product Marketing with distribution channel for Trigona Honey Bee products, Kahuripan Lestari Farmer Group through individual, family and collaboration systems between local, regional and national government agencies (Jakarta, Surabaya and Kalimantan),
5. Prospects validation of the Agribusiness Partnership Model, which is developed by the community around the forest area, and sustainable livelihoods with an average success rate of 87.5% in the very good category. with that maintain productivity, product quality, trade partnership and honey bee marketing information on hybrid off-line and on-line e-commers.

REFERENCES

Amanah, S & Farmayanti, N. 2014. Farmer-Fishermen Social Empowerment, Uniqueness of Agroecosystems, and Competitiveness. Indonesian Obor Library Foundation, Member of IKAPI, DKI Jakarta.

Anonymous. 2012. Gallo-galo (Trigona, spp) Stingless bee with high potential, Harapan Rain Forest (HRF). North Sumatra.

Gerardus Diri Tukan, 2008. Effect of Propolis Trigona Spp from Pandeglang on several Isolates of Cattle Intestinal Bacteria and Tracing of its Active Components. IPB. Bogor.

Hadiman, La Panga, P. Hardin, 2020. Anthology of Agricultural and Livestock Development Based on Local Wisdom and Agrotechno-ecological, Kanaka Media, Surabaya, East Java,

La Panga, P 2020. Diversification of Farming and Investment. CV. Kanaka Media. Surabaya East Java

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia

La Panga, P. 2020. Entrepreneurship in Integrated Farming. CV. Kanaka Media. Surabaya East Java

La Panga P and Hardin, 2020. Agribusiness and Community Empowerment. CV. Kanaka Media. Surabaya, East Java.

La Selo, La Panga, P. Hardin, 2020. Benchmarking theory and practice, Farha Pustaka, Sukabumi. West Java.

Ridoni, R. Rosidah, R. and Fitriani, 2020. Analysis of the Quality of Kelulut Honey (Trigona, Sp.) from Mangkauk Village, Pengaron District, Banjar Regency, Sylva Scienteae Journal Vol, 03 (2). ISSN 2622-8963.

Samuelson, 1961, Economics Introductory an Analysis, McGraw-Hill Book, Inc. Kogakusha Company New York Toronto London Tokyo.

Sukandar, Mapatoba, 2010. Trigona, spp. Propolis-Producing Bees. Unhas. Makassar.

Sukino, 2014. Developing Agriculture with Farmer Community Empowerment. Breakthrough in Overcoming Poverty, Pustaka Baru Press. Yogyakarta.

Source: http://sejarahjagat.blogspot.com/2016/01/sejarah-lahirnya sustainable.html [online:available] accessed 13 January 2020.

Source https://news.detik.com/ Berita/d-4371993/ Benarkah-minat-baca-orang indonesia-as low as this accessed 12 January 2020.

https://www.genpi.co/berita/33356/ha-minat-baca-indonesia-tertinggi-second-di-dunia-kok-bisa,accessed January 18, 2020

Co-responding Author : Wayan Puguh
Universitas Sulawesi Tenggara, Indonesia