Sustainable business potential survey at Desa Cileuksa of West Java, Indonesia using an ethnobiological approach

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Abstract. Cileuksa is one of the developing villages in West Java- Indonesia, with local biological resources that have not been optimally promoted. To discover the business potential of existing resources at Desa Cileuksa, a survey of business potential was conducted. The survey involved 32 respondents (adult) from 14 hamlets. The activity was divided into 2 (two) phases, phase I is an activity carried out directly in the village of Cileuksa consisting of surveys of natural resource potentials using ethnobiological approach and surveys of the socio-economic potential of the community in business development in the village of Cileuksa and phase II was recommendations analysis using descriptive analysis. The results found seven potential local resource-based business groups that had already been developed and could become the main business of the villagers. There were several other potential business commodities that could be further developed in Desa Cileuksa such as padi (Oryza sativa), pisang (Musa paradisiaca), ayam kampung (Gallus gallus), manggis (Garcinia mangostana), durian (Durio zibethinus), domba (Ovis aries), cabai (Capsicum annuum), kerbau (Bubalus bubalis), kayu afrika (Maesopsis eminii), and jeunjing (Falcataria moluccana). Generally, Desa Cileuksa’s products were sold to middlemen, due to market certainty.

1. Introduction
Desa Cileuksa in Sukajaya District is one of the 2500 Developing Villages in Indonesia [1]. Support in developing village-based on business potential is an important step that needs to be taken, in order to improve its status into an Independent Village. The concrete steps that can be taken will include local empowerment and assistance in the realisation of sustainability aspects, so that they can improve the living standards of the communities. Supports that will be carried out should be made based on scientific findings on the potential of natural resources in the village and deep socioeconomic conditions of the villagers.

This study aims to identify the availability and status of resources including natural resources and human resources including skills, technology, and infrastructure in Desa Cileuksa, identify the diversity of business services in Desa Cileuksa (government, NGOs, business asset, etc.), identify the diversity of potential businesses that have been developed in Desa Cileuksa, identify and formulate potential business opportunities that can be developed in Desa Cileuksa, and identify the diversity of target markets in Desa Cileuksa.
2. Methodology
The Sustainable Business Potential Survey activity was conducted on January 16, 2019-January 25, 2019 in 14 hamlets (Cikari, Cisusuh, Cihaur, Cipugur, Ranca Nangka, Cicur, Cijairin, Ciparengpeng, Cipadu, Cileuksa Utara, Cileuksa Kaler, Cileuksa Hilir, and Cileuksa Desa). The activity was divided into 2 (two) phases using quantitative and qualitative approaches to improve the data quality. The field survey phase I is an activity carried out directly in the village of Cileuksa consisting of surveys of natural resource potentials and surveys of the socio-economic potential of the community in business development in the village of Cileuksa. Survey of natural resource potential is carried out by interview and participatory observation. Interviews were conducted with a number of key informants who were selected by purposive sampling. Purposive sampling is a data source sampling technique with certain considerations [2]. In this activity, a purposive sampling technique is used to produce a baseline of natural resource potential use ethnobiological approach toward key people with the following criteria:

1. Elders (elders > 60 years old) community of the Desa Cileuksa who are considered as elders and are considered to know the biodiversity in the Desa Cileuksa.
2. Customary leader/ village head.
3. Cultivators and forestry managers who are considered to have great knowledge.
4. Mother/ woman conducting farming and forest management business.

The four criteria above are determined based on the consideration that elders, local leader, mothers, and the main actors in an agricultural/ forestry activity are the people who knowledge reservoir in relation to biodiversity management [3]. The number of samples needed is determined from the saturation of the data collected. For example, if as many as 14 samples from each hamlet have produced a list of natural resources that are relatively the same (saturated), then the collection of basic data can be considered complete. The basic data that has been generated is then compiled and analysed. In general, the basic data generated becomes a long list. Furthermore, the long list was simplified (short list) to approximately 20-25 species of plants/ animals that were considered potential to be developed in Desa Cileuksa. Some interview guides and questionnaires regarding the use of plants/ animals are used in this stage.

Furthermore, list of 20-25 plant/ animal species is then used in formulating a new business plan based on its potential development approach. Therefore, participatory observation to determine the general potential of these types needs to be done. Participatory observation is one type of observation that can be used in qualitative analysis. Qualitative analysis is needed in the aspect of diversity of natural resources to determine the direction of development of new businesses that may be developed based on the availability of natural resources. In participatory observation, the enumerator together with informants/ sections of the community actively visited locations where these types were available and gauges their potential capabilities in the context of developing a new business in the Desa Cileuksa. A questionnaire was used in this stage.

The second phase in phase I was surveying the potential for business development in the Desa Cileuksa. In this stage, it is done through several methods, the first is the distribution of questionnaires. The distribution of the questionnaire was carried out by purposive sampling of several business actors who are members of Desa Cileuksa community and could be represented by several categories of natural resources that were developed into economic potential in the Desa Cileuksa. The community as a whole was chosen purposively to capture the economic potential of natural resources that exist around the village. Questionnaires are also distributed to business actors who have run businesses in the field of natural resource utilization, to find out the current condition of the business undertaken and can also be seen the interrelationships between businesses and business potentials to help each other develop business in village. The questionnaire prepared was an open-ended questionnaire in which the answers given were not limited by certain choices so that they would have a broad view of the opinions and thoughts of the community.

The second method is structural interview. Structural interviews (using guidelines) and in-depth interviews (using guide questions). Structural interviews are preferred to identify relevant and potentially related stakeholders in the development of village businesses. Meyers [4] who defines...
stakeholders are those who have rights and interests in a system. Stakeholders can be individuals, communities, social groups, or organizations. An understanding of these parties is important to see the potential support and obstacles that will be faced in developing village businesses. The main targets in the interviews with these parties included business people/community entrepreneurs, community leaders, traditional leaders, religious leaders. Youth leaders, sub-district heads and local village heads, BUMDES, BPPD, leaders of local institutions, related district offices (Dishutbun, cooperatives, Disperindag, etc.). In addition, unstructured interviews were also carried out in conjunction with the distribution of open questionnaires, to capture information that was not included in the scope of the open questionnaire that had been prepared.

The last method is field observation. Observation or direct observation in the field is carried out to see the conditions and factual situations in the field, related to the object of business development or the economic and environmental potential of the village. Observation was also carried out as verification of the compatibility between the interview data and the questionnaire with the actual situation and making sure visually. In addition, observations were made to find out the economic activities of the community that might have been running either in groups or independently that could potentially be developed further. Phase II of the formulation of recommendations was using descriptive analysis.

3. Results and Discussion
There were 29 males (91%) and three female respondents (9%) selected through purposive sampling under the age groups as tabulated in Table A.1. The male respondents were dominant due to their livelihoods as farmers. The results of interviews found that the knowledgeable persons/ key informants were between the ages of 26 to 65 years old and over. This was related to the long use of plants and animals from the forest and their surrounding environments, which have been passed for generations. The age group of the early elderly (46-55 years) formed the largest number interviewed. According to Hanifah [5], increasing of one's age would affect the increase in knowledge gained, although at certain ages or before reaching an old age, the ability to remember would decrease. In addition, according to Natoatmodjo [6], age has an effect on one's perception and mindset. As you get older, the more information you find and the more things you do that add to your knowledge.

The Cileuksa villagers’ occupations were farmers, housewives, private sectors, farm workers, officials, teachers, farmers and tradesman as shown in Table A.2. Based on the results of interviews, the majority of respondents' occupations are farmers, with main source of income depends on the agricultural sector, especially as rice farmers. According to Irawan and Romdiati [7], almost 72% of all poor households in rural areas are characterized by people who are dependent on the agricultural sector for their main incomes. The second largest occupations were tradesmen, private sector, farm workers, farmers and breeders. Officials, teachers and housewives were the third largest occupations. The education levels of the farmers are presented in Table A.3.

The highest education level of the villagers was elementary school graduates. According to Guhardja et al. [8], the family situation in rural areas is characterized by human resources with low education levels and the level of education can affect the knowledge and understanding [9]. However, in this case the knowledge was transmitted over generations, through experience and education.

Based on the freeciting from the interviews, there were 90 types of business potential resources identified (including plants and animals). The resources were compiled and categorized into 25 types of resources (including plants and animals) according to the most frequently mentioned by the respondents. Based on the interviews results, the availability of resources and the feasibility of potential development, if the three criteria mentioned are not fulfilled, the resources will be replaced with other potential resources to be developed (marked with *in Table B.1).

The following were several number of the business activities in Desa Cileuksa: (1) Horticulture farming; (2) Wood-based business; (3) Sheep farming business; (4) Fruit business; (5) Business activities in the production of palm sugar (especially sugar and palm fruit); (6) Buffalo farm business activities; (7) Banana chips processing business with "Cauleuksa" as a brand. Other potential business opportunities that can be developed in Desa Cileuksa based of authors analysis include: (1) Development
of ayam kampung meat; (2) Development of "home industry" scale food products: palm sugar, durian sweet cake products, gandaria sambal, and dried ripe banana; (3) Development of spice plants include red variant ginger, turmeric, cloves, nutmeg, and cardamom; (4) Development of buffalo milk curd for functional food; and (5) Development of waterfall ecotourism.

The availability of potential resources in Desa Cileuksa are agriculture, plantation, livestock, forest, and processed products. Based on the interviews, the business activities in agriculture were highly presented, which later also in the forestry sector as the following activities. The business activities in Desa Cileuksa based on the views of the respondents could be seen in Figure B.1. Agricultural activities that dominated the business in the Desa Cileuksa villagers include rice, vegetables, and spices farming. While forestry business activities were dominated by purchasing and selling of processed wood such as jeunjing (Paraserianthes falcata), kayu afrika (Maesopsis eminii), and others. Plantation business activities of several types of products that were the objects of purchase and trade include fruits such as durian (Durio zibethinus), manggis (Garcinia mangostana), pisang (Musa sp.), and cengkeh (Syzygium aromaticum).

Results of the interviews indicated that, the business potentials of Desa Cileuksa for those who have started businesses before 2000 were dominated by businesses in agriculture and plantations, (Table C.1), while those who have started new businesses, namely from early 2016 until now, were in the field of animal husbandry. Therefore, the businesses were dominated by agricultural and livestock products. Until now there has been no business in the fisheries sector.

Businesses run by Desa Cileuksa’s communities such as farming were still independent in nature and conventionally managed. The businessmen employed local workers, specifically livestock businessmen and collectors of farm products (wood, bamboo, and fruit). Farm owners usually employed other people to herd their livestock under a profit-sharing system agreement. Whereas those working as collectors of farm product, usually bought raw materials with bulk systems and harvested their own farms.

The sources of the villagers’ business capitals were mostly obtained from personal fundings. Financial aid obtained from other parties such as banks and NGOs (GNI: Gugah Nurani Indonesia). Loans obtained from the bank with interest rate >25% are paid weekly. Due to the easy and fast procedures, capital loans from banks are considered very helpful even with high-interest rates. Capital assistance were provided by GNI in the form of livestock, for the initial capital of the rolling sheep program and capital for processed products of banana chips. A sheep roll means that GNI gives a pair of sheep to one hamlets in Desa Cileuksa to be bred within a certain period of time. If a sheep is born, then there is a division of the number of lambs to the GNI and hamlets. Furthermore, a pair of sheep are rotated to the next hamlets and so on.

Agricultural products and processed products in Desa Cileuksa were not only for their own consumption needs. In addition, sales were also carried out to improve the household’s economy. The initial product marketing was mostly done through many tengkulak (middlemen) who approached the farmers. Selling products to middlemen were considered more profitable, hence middlemen played the most important role of distributing commercial products from Desa Cileuksa to markets around Bogor and the surrounding big cities (such as Jakarta, Tangerang, Depok, etc.). Besides selling to middlemen, farmers also sell their products to the nearby markets such as Pasar Jasinga, Pasar Cipanas, Pasar Banten, etc, due to limited access and to cut down on transportation cost.

The development of rolling sheep program has entered the first rolling phase since the first sheep was given to the villagers; the current position of the sheep is centered in the Kampung Cijairin managed by Mr. Dudung. Some people who had succeeded in developing sheep business after getting a roll of sheep were Mr. Surya and Mad Ali. Sheep ready to be sold were worth Rp. 1.500.000; Rp. 3.000.000; for every sheep. There were no special treatments with regards to the management to improve the products’ qualities, although marketing is still limited.

The development of processed banana chips products has so far been stagnant and done only by order, due to lack of knowledge on where to market them thus no market demands. The types of products developed include various banana chips and cheese stick flavors. Unfortunately, the products’
supporting materials for the chips such as various banana chips flavorings were not readily available, hence must be ordered from Jakarta. In addition to marketing problems, another problem faced was the lack of innovation. Similar products were common everywhere, thus do not reflect the uniqueness of Desa Cileuksa.

The business activities of the villagers of Desa Cileuksa on the aspect of production, in general were home-based businesses with low productivity, in terms of support such as size and status of the place of business, as well as the source of raw materials, which indicated a typical home business that does not have a production target. Such business is only based on orders and aims to get a little margin from the sale. Recapitulation of production aspects are presented in Table C.2. Table C.2 shows that most of the business activities do not conducted in specific location due to the types of business activities such as middleman or distributor. Only a few of the business activities were permanent businesses, such as horticulture farming business. The business activities of the Desa Cileuksa villagers generally sourced from natural product that are available and cultivated there. Based on interview results there is limited number of product with specific or local uniqueness. Palm sugar is considered as economically product due to its quality as natural sweeter.

Middleman plays an important role to ensure the product from Desa Cileuksa to gain the higher price and give more advantages for the community. If the farmers sold their product by themselves, market demand in Desa Cileuksa is very low, so sales are very small compared to sell through middlemen (Table C.3). Due to its location in remote area, Cileuksa transportation used to be costly and increase the cost production. Only few numbers of farmers sells their products directly to surrounding communities through shops or stalls.

The most payment system used in Cileuksa business activity is in cash or directly between the seller and the buyer. Another payment system called by kashbon, which means advance payment for unripe farming product such as jeunjing and cengkeh. Middlemen would give the advance payment to the farmers and the farmers should sell the product to the middlemen. Conditional payment would be given before or after the product sold out, depending on the sales agreement. Most of marketing strategies are carried out by door to door with buyers, surrounding communities, and middlemen. There is no dissemination of information for marketing using print media and electronic media.

The marketing obstacle most felt by business people is limited capital. Other obstacles that were shown to inhibit the marketing process, were knowledge and marketing techniques. The “Cauleuksa” banana chips businessmen are constrained in marketing because there is a lack of marketing media and are still very dependent on GNI. In addition, market availability also affects marketing activities. Remote market location, difficult road access and the existence of competition make it difficult for businesses to market their products.

Assistance to business people in Desa Cileuksa to date only comes from village governments, the private sector (banks), and NGOs (GNI). Assistance provided by the village government in the form of socialization and training in agriculture. Assistance from banks received is in the form of capital loans that can be paid in instalments every week by the borrower (Table C.4). GNI provides assistance to rolling sheep groups and business people processing “Cauleuksa” banana chips products. The rolling sheep program was given the initial capital in the form of livestock. “Cauleuksa” banana chips processing program were given capitals in the form of initial capital and equipments, skill training, business assistance, and market certainty, despite the fact that GNI still has many business people whom stated they have not received any assistances, since the new GNI assistance was distributed to only 2 (two) groups. Other assistance received by the business group, i.e., equipment (tools) for the middlemen, was given to the palm sugar business group in Cikari Kampong.

The villagers’ form of business activities (micro, small, medium enterprises and cooperatives) are currently have become the government's attention. This was related to the government's efforts to reduce poverty, although the trend of decreasing poverty still continues. Where in 2010 Indonesia was still recorded at 13.33% and in 2018 the percentage of poverty was 9.82%. The number of poor people or per capita expenditure per month below the poverty line reaches 25.95 million people [10].
There are many concepts of village business development in order to have a good developer projection and not be buried by the form of big business (corporate), which in the end was intended to achieve economic sovereignty of community. Fandeli [11] stated that the key success factors are villagers’ business development, especially for people who rely on natural products from the surrounding environment and forestry in developing their businesses. There are 4 (four) concepts that can be applied so that the business carried out is not stagnant or difficult to develop in the early years, namely:

1. Quality concept
2. Strategy and management
3. How to operate concept
4. Marketing concept

Another opinion states that, to continue the growth and development of small-scale village business activities, there are several aspects that must be considered, among others:

1. Focus on market and costumer aspects
2. Development of human resources (HR)
3. Establishment of collaborative initiatives

Based on the opinions regarding business development, some of the aspects that could be formulated in the development of the business activities of Desa Cileuksa villagers, include:

a. Focus on product quality
b. Readiness of human resources
c. Application of innovation and technology
d. Integration with applicable policies
e. Supports from related stakeholders
f. Venture capital
g. Certainty of market segmentation

The factors above are assessed based on the results of interviews and questionnaires to the respondents. The results of field data collection is analysed using descriptive analysis with a Likert scale. The Likert scale used is 1-5 values, with: 1) Very Bad; 2) Bad; 3) Enough/Ordinary; 4) Good; 5) Very Good (Table D). Based on the results of the assessment (Table E), almost all of the factors are bad and enough/ordinary value (1.83-3.0), yet only HR factor is in good value (3.67).

Product Quality gets value of 2.83 which means in ordinary quality, this result is in line with the actual condition in field. There are no products from Cileuksa that are different or better than other places. Cileuksa business products are lack on uniqueness, predominance, endemity, and edit values. There are problems raised in physical condition of the cultivation land, most of the areas are very dry in dry season and unable to be interspersed with other plants. Usually, to restore the physical, chemical and biological of soil conditions, interspersed have to be conducted after 2-3 harvest times (commonly referred to as the "rest" period). Under these conditions, the fields will be dried and planted with other types of horticulture plants, then moistened again when the rice planting season. Yet, this practice cannot be applied in Desa Cileuksa, due to land history is Cileuksa area. Based on interview results, the lands in Desa Cileuksa have high infiltration rate. This condition seems to be caused by a former pattern of intensive clove plantations. The area was managed by using intensive fertilizers and high toxicity chemicals such as pesticide. The lands that were not part of the Hak Guna Usaha (HGU) of clove plantations such as customary/village generally fertile and could be plant for various types of agriculture. However, an in-depth research is needed regarding the physical, chemical, and biological conditions of the soil need to be conducted. Nevertheless, there is one type of fruit which is considered good enough and has an advantage compared to similar species in other places, viz. kemang (Mangifera kemanga). Kemang from Desa Cileuksa generally has a bigger size than common kemang available in Bogor area. Thus, this type may be developed in the future, whether from its processed products or marketing.

The Human Resources (HR) factor has the highest value (3.67), indicates good quality of human resources. However, this assessment emphasizes limited to the availability of HR. Considering the number of potential human resources in Desa Cileuksa to support the development of the village's
economy from natural resources, the result shows the HR is sufficiently available. However the HR factor is not only related to the availability of HR, but also there are other things such as Education Level, Expertise, Skills, Ability to technology and innovation and others.

The Application of Innovation and Technology was not implemented, indicated by the score of 2.00. This is in line with field observations where the farmers did not find any specific innovation in natural resource management, also in the application of renewable technology to improve the effectiveness and efficiency of natural resource management. Based on the results of interviews, over 90% of the respondents stated that they had not or did not implement innovations and special technologies related to the renewability in managing biodiversity in relation to the economic development of the rural communities.

Policy Integration factor value of 3.00, indicates that policy supports for the development of economic activities of the villagers, is considered quite good. However, from the bigger perspective, in general, the 2013-2018 Medium-term Development Plan (RPJMD) of Bogor Regency, has not specify the kind of development for Desa Cileuksa and only provide the general proposed development of Desa Cileuksa and the neighboring villages.

4. Conclusion
The majority of the commercial resources of Desa Cileuksa comprised of vegetables and poultry. Skills and technology possessed by the local communities have not been optimized for the sustainable development of the potential added values of the local biological resources. Desa Cileuksa’s infrastructure was adequate, although the future challenges should be on the maintenance and improvement of quality.

The diversity of business services in Desa Cileuksa consisted of a variety of stakeholders, from government, local farming communities, NGOs, and private companies. There are several business opportunities that can be developed in Desa Cileuksa. This research has successfully identified 7 (seven) potential local resource-based business groups that have been running to be developed and at the same time could become the leading businesses managed by the Desa Cileuksa’s villagers.

The market target of Desa Cileuksa's products is only carried out by middlemen, many of which were channeled to the nearest markets outside the village. Sales were made to middlemen because of market certainty. The wealth of local natural resources within Desa Cileuksa has been able to support the villagers to become independent and sovereign in their lives, which requires continuous strengthenings through mentoring by universities.

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Appendices

Appendix A: General Condition of Respondents

| Table A.1 Number of respondents based on age group |
|-----------------------------------------------|
| Age Group                                | Total | Percentage (%) |
| Late teens (17-25 years old)            | 0     | 0.00            |
| Early adult (26-35 years old)           | 1     | 3.13            |
| Late adult (36-45 years old)            | 8     | 25.00           |
| Early elderly (46-55 years old)         | 18    | 56.24           |
| Late elderly (56-65 years old)          | 4     | 12.50           |
| Manula (>65 years old)                  | 1     | 3.13            |
| Total                                   | 32    | 100.00          |

| Table A.2 Number of respondents based on livelihood |
|-----------------------------------------------------|
| Livelihoods                          | Total | Percentage (%) |
| Farmers                               | 21    | 66.00          |
| Tradesmen                             | 2     | 6.00           |
| Private sector                        | 2     | 6.00           |
| Farmworkers                           | 2     | 6.00           |
| Farmers and breeders                  | 2     | 6.00           |
| Officials                             | 1     | 3.00           |
| Teachers                              | 1     | 3.00           |
| Housewife                             | 1     | 3.00           |
| Total                                 | 32    | 100.00         |

| Table A.3 Number of respondents based on the education level |
|---------------------------------------------------------------|
| Level of Education                             | Total | Percentage (%) |
| Elementary school                               | 31    | 97.00          |
| Bachelor degree                                 | 1     | 3.00           |
| Total                                         | 32    | 100.00         |
Appendix B: Resources and Business Activities

Table B.1 List of 25 types of biological natural resources in Desa Cileuksa

| No. | Vernacular Name       | Scientific Name      | Frequency |
|-----|-----------------------|----------------------|-----------|
| 1.  | Padi                  | *Oryza sativa*       | 32        |
| 2.  | Pisang                | *Musa paradisiaca*   | 31        |
| 3.  | Ayam kampung          | *Gallus gallus*      | 30        |
| 4.  | Manggis               | *Garcinia mangostana*| 30        |
| 5.  | Durian                | *Durio zibethinus*   | 29        |
| 6.  | Domba                 | *Ovis aries*         | 29        |
| 7.  | Cabai                 | *Capsicum annuum*    | 28        |
| 8.  | Kerbau                | *Bubalus bubalis*    | 27        |
| 9.  | Afrika                | *Maesopsis eminii*   | 27        |
| 10. | Jeunjing              | *Falcataria moluccana* | 27     |
| 11. | Cengkhi               | *Syzygium aromaticum* | 25     |
| 12. | Aren                  | *Arenga pinnata*     | 24        |
| 13. | Petai                 | *Parkia speciosa*    | 24        |
| 14. | Jengkol               | *Archidendron jiringa* | 24     |
| 15. | Jahe                  | *Zingiber officinale* | 23     |
| 16. | Timun                 | *Cucumis sativus*    | 20        |
| 17. | Bebek serati/entog   | *Cairina moschata*   | 20        |
| 18. | Kunyit                | *Curcuma longa*      | 19        |
| 19. | Kacang panjang        | *Vigna unguiculata*  | 19        |
| 20. | Tomat                 | *Solanum lycopersicum* | 19     |
| 21. | Mangga                | *Mangifera indica*   | 19        |
| 22. | Singkong              | *Manihot esculenta*  | 18        |
| 23. | Bambu*                | *Bambusa sp.*        | 10        |
| 24. | Terung*               | *Solanum melongena*  | 10        |
| 25. | Ikan nila*            | *Oreochromis niloticus* | 9      |

*Note: Bambu*, terung* and ikan nila* are potential resources that already exist in the village of Cileuksa, but can be further developed.*
Appendix C: Aspects of Business

Table C.1 Aspect of business profile

| No. | Aspect                          | Verifier* |
|-----|---------------------------------|-----------|
|     |                                 | A | B | C | D | E |
| 1.  | Time to start a business        | 4 | 0 | 2 | 2 | 4 |
| 2.  | Business products developed     | 5 | 4 | 2 | 0 | 1 |
| 3.  | Workforce owned                 | 4 | 3 | 2 | 2 | 1 |
| 4.  | Source of capital owned         | 12| 1 | 0 | 0 | 3|
| 5.  | Product marketing               | 3 | 1 | 1 | 3 | 5 |

Description of Verifier *:
No. 1: A. Less than 2000, B. 2001-2005, C. 2006-2010, D. 2011-2015, E. 2016-present
No. 2: A. Fruits, vegetables, grains, etc., B. Livestock, C. Timber, D. Fish, E. Processed products
No. 3: A. Alone, B. 1-2 people, C. 3-4 people, D. 5-6 people, E. Above 7 people
No. 4: A. Personal, B. Bank loans, C. Cooperative loans, D. Partner loans, E. Cooperation with institutions
No. 5: A. Not yet marketed, B. Nearby communities, C. Stalls and shops nearby, D. Nearby markets, E. Middleman

Table C.2 Recapitulation of aspects of production

| No. | Aspect                                      | Verifier* |
|-----|---------------------------------------------|-----------|
|     |                                             | A | B | C | D | E |
| 1.  | The land area of the business place         | 6 | 2 | 2 | 0 | 2 |
| 2.  | Status of business land                     | 5 | 4 | 2 | 1 | 0 |
| 3.  | Product uniqueness                          | 10| 2 | 0 | 0 | 0 |
| 4.  | Sources of raw materials                    | 5 | 3 | 2 | 3 | 0 |
| 5.  | The ease of getting raw materials           | 0 | 2 | 3 | 5 | 2 |
| 6.  | Source of capital                            | 11| 1 | 0 | 0 | 3 |
| 7.  | Innovation and technology                   | 10| 2 | 0 | 0 | 0 |

Description of Verifier *:
No. 1: A. None, B. <100 m$^2$, C. 100-200 m$^2$, D. 200-300 m$^2$, E. > 300 m$^2$
No. 2: A. None, B. Alone, C. Bank loans, D. Rentals, E. Cooperation
No. 3: A. None, B. Quality, C. Size, D. Price, E. Endemicity
No. 4: A. Alone, B. Residents around, C. Nearby markets/shops, D. Markets / shops outside the area, E. Special messages
No. 5: A. Very difficult, B. Difficult, C. Ordinary, D. Easy, E. Very Easy
No. 6: A. Personal, B. Bank loans, C. Partner loans, D. Cooperative loans, E. Cooperation
No. 7: A. None, B. Production, C. Marketing, D. Packaging, E. Others

Table C.3 Aspect of marketing

| No. | Aspect    | Verifier* |
|-----|-----------|-----------|
|     |           | A | B | C | D | E |
| 1.  | Sales target | 1 | 0 | 7 | 3 | 2 |
| No. | Aspect                        | Verifier* |
|-----|-------------------------------|-----------|
|     |                               | A  | B  | C  | D  | E  |
| 2.  | Sales scheme                  | 10 | 1  | 5  | 1  | 0  |
| 3.  | Payment system                | 9  | 0  | 0  | 1  | 3  |
| 4.  | Marketing strategy            | 9  | 0  | 0  | 2  | 1  |
| 5.  | Special strategies in marketing| 2  | 0  | 0  | 0  | 10 |
| 6.  | Repeat order                  | 9  | 2  | 2  | 0  | 0  |
| 7.  | Market certainty              | 4  | 2  | 2  | 2  | 3  |
| 8.  | Constraints in marketing      | 2  | 5  | 0  | 2  | 5  |

Description of Verifier *:
No. 1: A. Nearby communities, B. Stalls and shops, C. Outside markets, D. Middleman, E. Not yet / not marketed
No. 2: A. Direct, B. Deposited, C. Orders, D. Not yet marketed, E. Promoted
No. 3: A. Cash, B. Installments, C. Barter, D. Cash bills, E. Depends on sales
No. 4: A. Mouth to mouth, B. Distribution of printed media, C. Social and electronic media, D. Not / not yet marketed, E. Find your own market
No. 5: A. Product promotion, B. Discounted prices, C. Other product bonuses, D. Price discounts if repeat orders, E. No / not yet
No. 6: A. None, B. Nearby communities, C. Middleman, D. Nearest market, E. Outside area
No. 7: A. None, B. Nearby communities, C. Middleman, D. Nearest market, E. Outside area
No. 8: A. Knowledge and marketing techniques, B. Allocation of funds, C. HR, D. Availability of markets, E. None

Table C.4 Assistance to entrepreneurs

| No. | Aspect                        | Verifier* |
|-----|-------------------------------|-----------|
|     |                               | A  | B  | C  | D  | E  |
| 1.  | Assistance from other parties | 1  | 1  | 3  | 1  | 6  |
| 2.  | Types of assistance received  | 2  | 3  | 2  | 4  | 6  |
| 3.  | Business development plan      | 5  | 1  | 4  | 2  | 2  |
| 4.  | Business constraints           | 6  | 0  | 2  | 1  | 3  |

Description of Verifier *:
No. 1: A. Village / regional government, B. Private, C. Donor / NGO, D. Volunteer, E. No / not yet
No. 2: A. Capital, B. Appropriate technology and equipment, C. Marketing or market certainty, D. Training and business assistance, E. Not yet / none
No. 3: A. Nothing, B. Increasing capital, C. Optimizing production capacity, D. Expanding the market, E. Increasing product quality
No. 4: A. Capital, B. Production (equipment, raw materials, HR), C. Engineering and technology, D. Availability of markets, E. Not yet / none

Appendix D: Likert Scale Interval

Table D Likert Scale Interval

| Interval    | Mean                                                                 |
|-------------|----------------------------------------------------------------------|
| 1.0 – 1.8   | Factors worth very not/very not done/very not implemented, etc.      |
| 1.8 – 2.6   | The value factor is not good/not done/very not applied, etc.         |
| 2.6 – 3.4   | The factor is quite good/enough to do/enough to be applied, etc.     |
| 3.4 – 4.2   | Factors worth good/done/applied, etc.                                |
| 4.2 – 5.0   | Factors worth very good/not done/not applied, etc.                   |
Appendix E: Business Development Factors

| No. | Business fields | Business Development Factors * | Average |
|-----|----------------|-------------------------------|---------|
| 1.  | Agriculture    | A 3 B 4 C 2 D 4 E 3 F 4 G 4 | 3.43    |
| 2.  | Plantation     | A 3 B 4 C 1 D 3 E 2 F 3 G 4 | 2.86    |
| 3.  | Forestry       | A 3 B 4 C 1 D 3 E 2 F 2 G 4 | 2.71    |
| 4.  | Livestock      | A 3 B 4 C 3 D 3 E 2 F 2 G 3 | 2.86    |
| 5.  | Fishery        | A 2 B 2 C 1 D 3 E 1 F 1 G 2 | 1.71    |
| 6.  | Processed Products | A 3 B 4 C 2 D 1 E 3 F 1 G 1 | 2.57    |

Average: A 2.83; B 3.67; C 2.00; D 3.00; E 1.83; F 2.50; G 3.00

Information*:  
A. Product Quality, B. HR, C. Application of Innovation and Technology, D. Policy Integration, E. Stakeholder Support, F. Business Capital, G. Market Availability