

DEVELOPING THE ECONOMIC POTENTIAL OF AGRO-TOURISM: A CASE OF PANGALENGAN DAIRY FARM

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***Abstract:** Pangalengan is a district famous for dairy farming located in Bandung Regency. The Dutch colonial administration established various businesses in Indonesia, including a dairy farm in Pangalengan referred to as KPBS Pangalengan. However, there has not been any significant development on KPBS Pangalengan although it has more potential than just being a dairy farm. It has the potential for education and tourism. Based on this idea, the researcher intends to examine the potential of KPBS Pangalengan as an agro-tourism centre. This research uses a qualitative descriptive method, collecting data through observations and interviews. The purposes of this research is 1) to explore the potential in KPBS Pangalengan that can be developed for agro-tourism, 2) to examine the value of the available supporting facilities, 3) to explore ways of developing agro-tourism as a way of tapping the potential of this facility.*

Keywords: agro-tourism, dairy farm, potential, KPBS Pangalengan

1. INTRODUCTION

During the era of Dutch colonials in Indonesia, there were several farms in Pangalengan, including Friensche Terp, Almanak, Van Der Els and Big man. The marketing of their products was conducted by Bandungche Melk Center (BMC). BMC still exists until today, but its function has changed. However, during the era of Japanese colonization, the farms were closed and the cows were given to the people living in the surrounding areas. In 1949, the cow farmers in Pangalengan formed a cooperative under the name of *Gabungan Petani Peternak Sapi Indonesia Pangalengan* (GAPPSIP/ Association of Cow Farmers of Pangalengan Indonesia). During the economic crisis in 1960's, GAPPSIP folded down so that the trading of the dairy farm products (mainly milk) was taken over by brokers. However, in 1969, a new cooperative was founded under the name of *Koperasi Peternak Bandung Selatan* (KPBS/ Cooperative of South Bandung Dairy Farmers) Pangalengan (the Directorate General of Cooperatives, 1980). KPBS Pangalengan is a cooperative in the field of dairy farm. In 2014, KPBS Pangalengan has 5,551 members; consisting of 3,542 active members and 2,009 non-active members.

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All dairy farmers in Pangalengan are the members of KPBS. KPBS, that originally only sells fresh milk, now develops to a cooperative that can product and process its milk into various dairy products. KPBS has several Business and Services Units:

- Unit for Planting and Producing Livestock's Foods.
- Goods and Foods Unit.
- Livestock's Foods Processing Unit.
- Animal and Human Healthcare Unit Production and Processing Unit.
- Transportation and Marketing Unit.
- Business Unit of PT. BPR Bandung Kidul.
- Dairy Farming Guidance Unit

It also has one Tourism Service Unit that has ceased to operate.

Most of the workers in KPBS Pangalengan are family of the cooperative members, living near Pangalengan. This is because KPBS Pangalengan wants to improve the prosperity of its members and provide jobs for the surrounding society. Besides being partners with big companies, KPBS Pangalengan also cooperates with the surrounding society who owns home industry of milk-based food production. KPBS supplies milk to these home industries with monthly credit.

In the Medium-Term Regional Development Plan (RPJMD) of Bandung Regency, Pangalengan is listed as the primary and central area of dairy cow farm with natural tourism and agro-tourism potentials (bapeda.bandungkab.go.id/site/RPJMD_2014/). However, the existing potentials of agro-tourism have not been fully developed. In 2011 until the beginning of 2014, the population of dairy cows in Pangalengan area decreases around 4,000 cows per year. The decrease of cow population is caused by the increase of the price of cow's meat; which leads the brokers of cow's meat use dairy cow as alternative (Head of KPBS Pangalengan, Mr. Aun Gunawan, 2014).

Another difficulty facing the dairy cow farmers is the increasing price of the additional concentrated food. The price of the wheat polar or other wheat products, which is the primary composition for cow's food, keeps increasing as the exchange rate of dollar to rupiah increase. The income of the farmers decreases, although the prices of exported milk and national milk are the same.

Considering this phenomenon, the development of the farms into agro-tourism sites may be an alternative solution. Agro-tourism is a form of rural tourism that offers closeness with natural environment and direct experiences of farming activities (Joshi and Bhujbal, 2012). The difference between eco-tourism and agro-tourism is on who offers the tourism, as Maruti (2009) notes, ecotourism is generally provided by the tour companies, whereas in the agro-tourism farmers offer tours to their agriculture farm and providing entertainment, education and fun-filled experiences for the urban peoples.

The existence of KPBS Pangalengan provides certain superiority in the area since it is the main umbrella for the farmers in Pangalengan that accommodates all farmers and tourists in agro-tourism activities. The development of agro-tourism in KPBS Pangalengan is expected to increase the income of KPBS and the farm members on one hand, and to provide educative tourism experience for the tourists on the other hand. The philosophy of agro-tourism is inspired to improve the farmers' earnings and the quality of rural society lives which then expectedly represents opportunity to educate the societies on agriculture and ecosystems (Utama, 2007). The benefits that both parties can get from agro-tourism is expressed clearly by Mazilu and Lancu (2006) who state that agro-tourism also help farmers to get some benefit by facilitating the capitalization their own resources from agriculture, which is the main profit source. In addition, agro-tourist activities would have the added benefit of promoting sustainable agricultural practices (Catalino and Lizardo, 2004).

2. METHODOLOGY

The methodology used in this study is descriptive qualitative method, aiming to describe the potentials worth to be developed into farming agro-tourism in KPBS Pangalengan. The researcher conducts field observation to obtain necessary data through observation and interview. To identify the potentials worth to be developed in KPBS Pangalengan, the researcher conducts comparative study at three popular sites of dairy farm agro-tourism in Bandung: Kampung Areng Cibodas, De'Ranch, and Istana Susu Cibugary. The result of the comparative study is also referred in the development of agro-tourism potentials. In this study, the researcher uses purposive sampling to select the subjects who will be the sources of data. The sources that will be interviewed are:

- The Secretariat of KPBS Pangalengan.
- The Head of Milk Treatment KPBS Pangalengan.
- The Head of Production of Milk Treatment KPBS Pangalengan.
- The dairy farmers around KPBS Pangalengan (minimum 3 people).
- Home Industry owners (minimum 3 people)

All data obtained through observation and interview will be selected based on the importance and relevance, and will be used to answer the research questions and to draw conclusions. The answers of the research questions and the conclusion will then be used as the basis of the development of agro-tourism in KPBS Pangalengan.

3. FINDINGS AND DISCUSSION

Farming agro-tourism in Indonesia still has no clear standard concerning the kind of attraction to be installed. Therefore, a comparative study is conducted in three popular agro-tourism sites in Bandung area that utilizes dairy cows as their agro-tourism attraction. The three sites are Kampung Areng Cibodas, De'Ranch, and Istana Susu Cibugary. The result of the comparative study is summarized in the following table:

Table 1
Result of the Comparative Study

<i>No</i>	<i>Location</i>	<i>Similarities</i>	<i>Differences</i>
1	Kampung Areng	<ul style="list-style-type: none"> - Bathing Cows - Milking Cows - Feeding Cows 	<ul style="list-style-type: none"> - Cooperates with EO - Delivering Milk to Storing Center - Night Watch - Cooking with <i>Hawu</i> (small hearth) - <i>Botram</i> (eat together) - Learning Traditional Arts - Gardening - Fishing - Tracking in Kampung Areng - Implementing Outbound Concepts - Offering various tourism packages
2	De'Ranch	<ul style="list-style-type: none"> - Bathing Cows - Milking Cows 	<ul style="list-style-type: none"> - Riding <i>Delman</i> (horse-cart) - Trekker - Riding horses - Riding ponies - Gold Hunter game - Fun Boat - Fishing pond - Flying Fox - Water balloon - Water bicycles - Toddler bicycles - Jumping Kids - Fish-catching for Toddlers - Trampolines - Archery - Indian Totem Web Pool - Pony Kidz - Kidtrik - Swinging Horse - Sliding Box - Horse Riding Lesson - Horse Caring Education - Riding Out - K6 (Horse-Cart Driver's Skills Course) - Cook'n Cookies
3	Istana Susu Cibugary	<ul style="list-style-type: none"> - Feeding Cows - Milking Cows 	<ul style="list-style-type: none"> - Cow Farming Knowledge - Post-Milking Processes - Education on the Advantages of Milk - Introduction of Cow's Colors - Offering various tourism packages - Providing souvenirs for every visitor

The table shows that there are some similarities and differences in terms of agro-tourism attractions in the three agro-tourism sites. Among the similar attractions are: bathing cows, feeding cows, and milking cows. Concerning the differences, Kampung Areng Cibodas highlights the attraction of rural environment and rural farming

activities. In addition, Kampung Areng Cibodas cooperates with Event Organizer (EO) to accommodate its visitors. Meanwhile, De'Ranch highlights the attraction of cowboy-style horse riding by providing horse riding attraction and games for kids. Furthermore, De'Ranch has a special training center for tourists who desire to be expert horse riders. Istana Susu Cibugary focuses on the educational experiences for its visitors, by providing education about dairy cows farming.

Based on the comparative study on the three locations, observations, and interviews with the resources in KPBS Pangalengan, there are three potentials that can be developed into farm agro-tourism: Dairy Cow Farming, Milk Treatment, and Home Industry.

4. DAIRY COW FARMING

KPBS not only owns its own farm; it also has many farm members. The farm members of KPBS have two kinds of ranch for the cows; the traditional kind and the Dutch-standard kind. In Pangalengan, there are two kinds of dairy cows being farmed. The first is the Fries Holland, commonly called FH, dairy cows, originated from Netherland. The second is the Limmousine dairy cows, originated from French. In the farms, the common activities include feeding cows, milking cows, and mating cows.

At the farms of KPBS, the tourists can do activities like a dairy cow farmer, and can get educative information concerning dairy farming. When the tourists arrive at the farm, they will be introduced to the various ways of dairy farming by the management of KPBS Pangalengan. Then, the tourists can participate in the farming activities, including feeding the cows, preparing for milking the cows, and actually milking the cows. They can also participate in taking the milk to the storage area. Furthermore, the tourists can also watch dairy cow reproduction through artificial insemination conducted by the staff of KPBS Pangalengan. This attraction only opens two times a day, in the morning and in the afternoon.

The tourists who come in group can also enjoy fun games. They may be grouped in several groups and then compete to wash the cows or milking the cows. This activity provides fun experiences for the tourists, from just watching to obtaining information.

5. MILK TREATMENT

KPBS owns a milk treatment facility called the Milk Treatment or MT. When the milk arrives at MT, it will be processed immediately. The followings are the stages of milk processing at MT:

- **Milk Quality Testing:** The testing of milk quality is conducted at the MT laboratory. It is conducted to measure the composition of the milk. The tests include the specific weight test, alcohol test, fat test, total solid test, purity test, and taste test. In addition to determining the chemical composition of the milk, these tests also aim to discover the rate of bacteria in the milk. If the milk passes the required standard of quality, it will be processed in the next stage.

- Receiving and Weighing Area: After passing the quality test, the milk is transferred through pipes to the receiving area. Here, the milk is re-filtered and weighed. After it is recorded and filtered, the milk is transferred through pipes to the storage tanks with cooling units.
- Processing: At the MT, there are various processes to process the milk into milk products. The resulted products include plastic-packed milk with various flavors; cup-packed milk with various flavors; yoghurt with various flavors; butter; cream cheese; sour cream; mozzarella cheese; ice cream and whipping cream

At the Milk Treatment of KPBS Pangalengan, the tourists will tour around to watch the milk processing and milk-based food production. The tourists will get education and information concerning milk, milk products, and various activities of Milk Treatment. When they arrive at the Milk Treatment, the tourists will be informed about the cleanliness of the factory, followed by watching the milk quality testing. They will be educated about the standard quality of milk. Then, the tourists can see the process of milk receiving and weighing at the milk-weighing machine. After that, they can see the milk processing and milk-based food production, from the process of pasteurization, yoghurt making, butter making, cream cheese making, sour cream and whipping cream production, and mozzarella cheese and ice cream production.

6. HOME INDUSTRY

The processing of milk is conducted not only in the KPBS Pangalengan area. The people around KPBS Pangalengan are very creative in terms of processing milk-based food. The Pangalengan home industry has produced various kinds of milk-based food, such as caramel candy, milk *dodol*, milk nougat, and milk crackers.

All home industry in Pangalengan that process milk-based food is partners of KPBS. KPBS helps providing milk supply for them, to satisfy their production needs. KPBS also facilitates them in terms of payment, by allowing them to pay at the end of the month. On any day, the home industry receives 1000 liters of milk supply from KPBS. The partnership of KPBS and home industry around Pangalengan has been conducted since 1985. The process to produce caramel candy takes 7 hours, milk *dodol* production needs 8 hours, milk nougat processing takes 7 hours, and milk crackers production requires one day. In a month, the home industry can produce 4000 kg of caramel candy, 1500 kg of milk *dodol*, 300 kg of milk nougat, and 300 kg of milk crackers. These products are marketed even outside of West Java area.

At these home industries of the people around KPBS Pangalengan, the tourists can see, learn, and practice the production of milk-based food. On the other hand, the people also can actively participate in the agro-tourism activities and get economic profits from the sale of their products to the tourists. The owners of farm members of KPBS Pangalengan are other parties that may actively participate in the agro-tourism, particularly when the number of tourists exceeds the capacity of farms in KPBS

Pangalengan. The surrounding society can also participate by providing transportation services.

Besides the three potentials of agro-tourism, the development of Pangalengan area can also provides other supporting facilities for the tourists, including:

- Inns: Around KPBS Pangalengan, there are several houses that have been turned into home stay, two hotels, and a resort (Citere Resort).
- Restaurants: Pangalengan has many places for tourists to eat, such as Rumah Makan Sop Buntut Asti, Saung Tenggek, Batagor Ikhsan, and Mie Akup.
- Souvenirs Shop: Along the road of Pangalengan to Cisangkuy, there are many shops selling the food of Pangalengan. KPBS itself has some shops to sell the products of KPBS Pangalengan.
- Accessibility: Accessibility to KPBS Pangalengan is quite easy. From Bandung, there are two routes that people often take, through Mohamad Toha and through Kopo. The road in Pangalengan area has been improved and passed by public transports.

Besides the development of tourism attraction potentials, it is also important to minimize the weaknesses of tourism management. It can be done through the reactivation of KPBS Pangalengan’s Tourism Service Unit. The reactivation of the unit can provide a more structured and organized tourism service. The pattern of tourists handling in Tourism Service Unit of KPBS Pangalengan is displayed in the following figure:

The tourists who want to visit KPBS Pangalengan may contact the Tourism Service Unit of KPBS Pangalengan. Then, the tourists will be provided with tourism service at

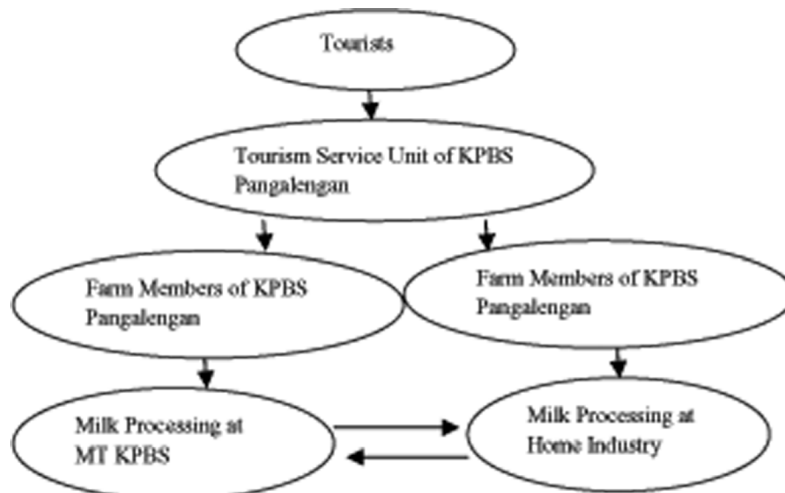


Figure 1: Tourists Handling Pattern

KPBS Pangalengan's farms. However, if the number of tourists exceeds the capacity of the farms, the Tourism Service Unit of KPBS may distribute the tourists to the farm members of KPBS Pangalengan. The tourists at KPBS Pangalengan may continue their tour to Milk Treatment Facility of KPBS Pangalengan, while the tourists at farm members will continue their tour to Home Industry. Then the two groups of tourists will be exchanged, those at Milk Treatment will visit Home Industry, and vice versa.

The tourism Service Unit also offers tourism packages to facilitate the tourists in selecting the tour they want. The packages are offered in two categories: the individual tourism package and the group tourism package. The schedule of the activities will be adjusted to the schedule of the farm; the morning package starts at 7 in the morning and ends at 12 in the afternoon; while the afternoon package starts at 1 in the afternoon and ends at 6 in the evening.



Figure 2: Diagram of Individual Tourism Package of KPBS Pangalengan

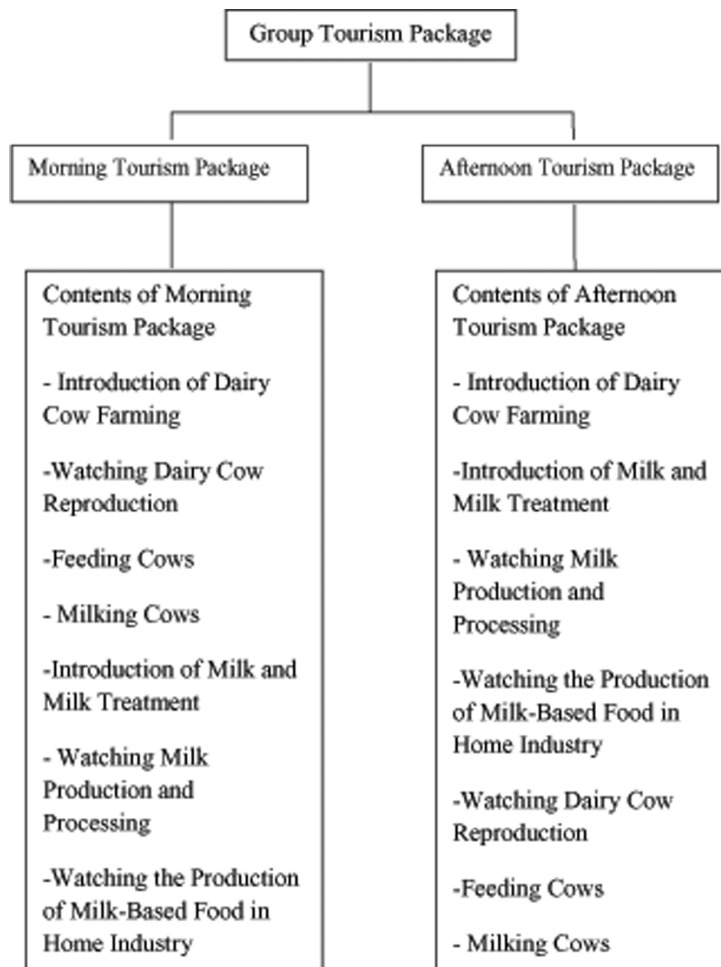


Figure 3 Diagram of Group Tourism Package of KPBS Pangalengan

For individual package, the tourists can choose to do all activities or only certain activities. However, for group package, it is recommended to do all activities offered in the tour. All visiting tourists will be provided with souvenirs of pasteurized milk. The tourism packages offered are summarized in the following figures:

7. CONCLUSION

The development of dairy farm into an agro-tourism business may benefit the farmers and the tourists. The dairy farmers may increase their income from the agro-tourism and the tourists may directly experience dairy farming activities. These benefits are expected to also provide educational opportunities for the dairy farmers' society and tourists concerning their environment and ecosystem.

The result of comparative study through direct observation reveals that Pangalengan, as an area of dairy farm, has the potential to be developed into a farming agro-tourism business. By utilizing and reopening the Tourism Unit of KPBS Pangalengan, the dairy farm, Milk Treatment, and home industry of KPBS Pangalengan can be developed into agro-tourism attraction. This attraction can be marketed to the tourists in the form of tour package with educational value. Further studies on the ways to develop the human resources to manage the Tourism Unit of KPBS Pangalengan, to maintain the sustainability of the farming agro-tourism, needs to be done.

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