SUSTAINABLE DEVELOPMENT AGROWISATA REGION MEKARSARI TOURISM PARK - Bogor, West Java

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Abstract— This study aims to assess and analyze : (1) The attempts to make Mekarsari tourism park as the safeguard of the environment, (2) The efforts of Mekarsari tourism park to empower local communities, (3) The attempts of Mekarsari tourism park to increase revenue and product diversification, (4) The sustainable model development of agro-tourism in Mekarsari tourism park. The survey method used is qualitative method. Results of research from the standpoint of the environment shows that the ratio between the available land with the number of visitors, signs, and appeals concerning the information to be provided at places frequented by tourists, and the standard strikes against the visitor's behavior that is not appropriate. Seen from a societal perspective, the result is proactive in the implementation of CSR, the ratio of permanent employees to contract employees, increased revenue diversification requires appropriate and attractive factors to visitors.

The existence of Mekarsari tourism park can be maintained and even enhanced by pay attention to three (3) aspects, they are the environment, empowerment of local communities, increased revenue.

Keywords— *sustainable agro-tourism, Mekarsari tourism park.*

I. INTRODUCTION

Tourism development impact on the economic improvement of the surrounding community, which is in line with some previous researchers stating that the conditions relating to the development of tourism include, among others: (1) contribution to the income level of subsistence, (2) increase employment, (3) increase investment, the construction of infra-structure, the increase in tax revenues, and an increased chance of shopping (Pizam, 1978; Rothman, 1978; Sentha & Richmond, 1978; Sheldon & Var, 1984; Milman & Pizam, 1988; Perdue et al., 1978).

Mekarsari Park is one of the centers of biodiversity conservation of tropical fruits in the world, especially the superior varieties of fruit collected from all regions in Indonesia. Besides conservation activities, Mekarsari also carried out research culture (agronomy), breeding and multiplication of seeds for later disseminated to farmers and the general public. The presence of Mekarsari need to consider the sustainability with due respect to the environment, empowerment of local communities, as well as increased revenue.

The research problem is the absence of the concept of sustainable development of agro-tourism area, both from the environmental dimension, the empowerment of local

communities, as well as increased revenue for Mekarsari itself. As a basis for assessing and analyzing the problem, research questions are as follows: (1) Analyzing environmental management in the region Mekarsari. (2) Analyzing patterns of community empowerment around Mekarsari. (3) Analyzing efforts to increase revenue Mekarsari. (4) Creating a sustainable model of the development of agro-tourism for Mekarsari.

II. LITERATURE REVIEW

A. Agrotourism in Various Countries

Various studies related to agro-tourism have been conducted by researchers, including research done in 2014 by Bwana, MA., WHA Olima, and D. Andika. The title of their research is "*Agro tourism: Potential Socio-Economic Impacts In Kimusu Country*". They assessed the *socio-economic* potential associated with the development of agro tourism. Research conducted on 388 respondents with a random sampling technique sampling. Data acquisition is done through interviews and group discussions. The research results indicate there should be encouragement to develop *socially agrotourism* benefits (Bwana et.al, 2015).

B. Tourism, type, and region

Tourism is a temporary move to a location outside the work place and residence, and or activities undertaken during the stay at the site and the facilities provided to serve the needs of the tourists (MathiesondanWall, 1982). In addition to meeting the satisfaction and the desire of the tourists/visitors, tourism is also an impact on the growth and development of the area into a tourist destination or attraction is often called due to become a tourist attraction of the area develops and evolves as the number of visitors.

World Commission on Environment and Development (WCED) in 1987 described Sustainable Development as development that meets the needs of the present generation without compromising the ability of future generations to meet their needs. Theoretically the principles of sustainable development can be applied to various sectors of development. As an example of successful agricultural development, the World Bank (Conway and Barbier, 1990: 23) suggested that the following three criteria are met: (1). must be sustainable by ensuring the preservation and reasonable use of renewable

resources;(2) Must increase economic efficiency; (3). The benefits must be distributed evenly.

C. The concept of sustainable tourism development

According to Muller (1997), sustainable tourism is managed tourism refers to the qualitative growth, the intention is to improve the welfare, economy and public health. Five parameters to considered in sustainable tourism are: (1) healthy economic growth, (2) the welfare of local communities, (3) no change in the structure of the universe, and protect natural resources, (4) culture of the people to grow healthy, (5) maximizing the tourist satisfaction by providing good service for tourists.

According to Gunn (2002), tourism consists of attractions, service or service, transportation, information and promotion (Gunn, 2002: 41-57). (1). Attractions has two functions: as a lure, stimulating people to travel and as provider satisfaction to visitors; (2) Service is a service or facilities provided include restaurant or restaurants, travel agencies, as well as shops serving stuff typical of the region; (3) Promotion is an important activity in the development of tourism which can be done by the government or private. (4) Transportation is an important component in the system of tourism, which means also as accessibility or ease to reach a location tourist attraction; (5) Information is the travel information, the information can be presented in the form of maps, user guide, articles in magazines, brochures and via the Internet. Factors Supporting Tourism external factors that have helped in the planning and development of tourism, the determination of the function of tourism, and criticism of tourism planning (Gunn, 2002). Fig 1 shows the Aspects of the tourism system support.

Figure 1 Aspects of the tourism system support (Gunn 2002)

Negative impacts of tourism on the natural physical of environment are: Flora and fauna, local communities; Pollution, erosion, natural resources, the visual impact (Hartanto, in Sustainable Tourism Planning Seminar, 1996).

Sutjipta (2001) defines ecotourism as a system of integrated and coordinated activities for the development of agricultural tourism in relation to environmental preservation, welfare enhancement of farming communities. Agro tourism can be grouped into ecological tourism (*eco-tourism*), which activities and travel with no damage or contaminate nature with the aim to admire and to enjoy the beauty of nature, animals or wild plants in their natural environment as well as the means of education (Ministry of Agriculture, 2005).

Land and Land Use

The main function of land can generally be divided into two functions; land for cultivation activities and land that serves for protected forests. Land for cultivation is an area that can be utilized for a variety of uses such as residential, both urban and rural areas, plantations, production forests. Land for protection is the area with the main function to protect existing environmental preservation which includes natural resources, artificial resources and the value of the nation's history and culture that can support the utilization of cultivated area (HardjowigenodanWidiatmaka, 2000). Based on previous literature review, the relationship between the theories presented in Figure 2

Figure 2. Theoretical Framework of Research

The framework of this research can be seen in Figure 3.

Figure3 The Framework of Research

III. METODOLOGY

A. Research Approach

This study used a qualitative research approach in which data was taken qualitatively and presented in a narrative way. The qualitative data in this study were taken through the following: (1) Drawing up a detailed description of the situation, activities, or events or certain phenomena, both related to human aspects and relationships with other human beings; (2) Quoting information from report documents and archives; (3) Drawing up a detailed description of the attitudes and behavior of the human aspect.

B. Research Areas

Mekarsari Tourism Park is located in Bogor Regency, West Java Province, a 30 Km south-east of Jakarta. Location of research was chosen based on several considerations: (1) Mekarsari Tourism Park is located close to the city center which can be easily reached by tourists, both domestic and international. (2) There has been no previous studies on Mekarsari. (3) Mekarsari is experiencing issues that are commonly occurred in agro-tourism.

The questionnaires are distributed to the respondents' visitors and local communities to investigate the impact and characteristics of Mekarsari Park visitor. The sampling design used is non-probability sampling (accidental sampling) which take samples of anyone or chance encounter.

C. Data Analysis

The results of in-depth interviews and documentation were analyzed with qualitative methods. The data / information required are (1) land use, (2) enforcement of disciplinary rules against visitors, (3) CSR program of Mekarsari Park, (4) recruitment of employees, (5) type of business opportunities for locals around Mekarsari Park, (6) revenue of Mekarsari Park, (7) product diversification. The qualitative data analysis process includes three main activities, namely data reduction, data presentation, and drawing conclusions and verification (Miles & Huberman in Sutopo, 2002: 91-93).

The Quantitative Data Analysis used to calculate the carrying capacity of the physical area of Mekarsari Park, Cifuentes formula is used (Fandeli, 2002: 261):

$$PCC = A \times \frac{1}{B} \times Rf \quad (1)$$

PCC : *Physical Carrying Capacity*

A : Area used for traveling

B : Area required by every tourist to travel in a fixed gain satisfaction

Rf : Factor rotation

IV. FINDING AND DISCUSSION

A. Description of Research Location

Mekarsari Tourism Park was built on the initiative of Mrs. Tien Soeharto located in Mekarsari Village, District Cullinan, Bogor, West Java Province. The purposes of the establishment of Mekarsari Tourism Park are as follows: (1) As the center of Indonesian horticultural germplasm conservation for research, education, farming and tourism. (2) Creating a horticultural demonstration garden that consists of orchards, vegetable gardens and ornamental plants. (3) Provide alternative new tourist attraction for domestic and foreign tourists. (4) To create new jobs, particularly in Cileungsi Sub District. (5) Utilize all existing natural potential alignment with the principles of environmental considerations.

B. Tourist Attractions in Mekarsari

Facilities available at Mekarsari are divided into two parts: the attractions and travel packages. Attractions have facilities

such as: (1) *Family walk zone* includes *kids fun valley*. (2) *Water zone*, such as: *mini aqua boat*, *water bike*, *floating donuts*, *banana boat*, etc. (3) *Country side*, an attraction to explore the *country side* using a single bicycle, tandem bicycles, bicycle tuk tuk, or three wheeled bicycle machine called ATV (*All Terrain Vehicle*). (4) *Ground land zone*, an attraction to learn the procedures for gardening in the area of breeding, cultivation way is good and right. (5) *Festival point*, consisting of the attractions Pongo show, performing operettas, *outbound*. While the tour packages available in Mekarsari Park include: (1) *Back to the world*, including travel packages grow fruit, choose fruit crop seedlings, butterfly house tour, tour of the house insects, seeds or herbarium stick creativity, sightseeing tour of the garden, *kids fun coin valley*. (2) *Come out n play*, include: vehicle *family garden*, *kids fun coin valley*, traditional games include: magic thing, eating watermelon, what with eggplant, basket ball, racing clog, tug of war. (3) *Kids farm*, offering tour packages to plant plants in pots, feed the fish, as well as the creative use of clay.

C. Characteristics of Population Around Mekarsari

The Population around Mekarsari shows on table 1.

Table 1 Total Population by Gender by Hamlet in the Village Mekarsari

No.	Hamlet / RT / RW	Total population		
		L	P	L + P
1.	Dusun 1	941	910	1,851
2.	Dusun 2	1,116	1,069	2,185
3.	Hamlet 3	1,685	1,577	3,262
4.	Dusun 4	1,125	1,040	2165
	amount	4867	4,596	9463

(Source: Population data from the Village Head Mekarsari 2015)

The Population Based on Age Group shows on table 2

Table 2 Data Population by Age Group

No.	Age group	Man	Female	amount
1.	00-01 Years	175	151	326
2.	01-03 Years	145	140	285
3.	03-05 Years	164	152	316
4.	06-12 Years	340	297	637
5.	13-15 Years	297	266	563
6.	16-19 Years	485	454	939
7.	20-24 Years	428	415	843
8.	25-29 Years	486	476	962
9.	30-34 Years	512	496	1,008
10.	35-39 Years	432	404	836
11.	40-44 Years	371	355	726
12.	45-49 Years	357	327	684
13.	50-54 Years	255	225	480
14.	55-59 Years	219	245	464
15.	60 Years and above	201	193	394
	Total	4867	4,596	9463

(Source: Population data from the Village Head Mekarsari 2015)

The Data Population by Education Level shows on the table 3.

Table3 Data Population by Education Level

No.	Education group	Man	Female	amount	%
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1.	Not Completed SD	60	75	135	2.09%
2.	SD	1,592	1,470	3062	47.38%
3.	JSS	941	810	1,751	27.09%
4.	SLTA	645	562	1,207	18.68%
5.	Diploma I, II, III	78	65	143	2.21%
6.	Bachelor	83	72	155	2.40%
7.	Postgraduate	7	3	10	0.15%
amount		3,406	3,057	6,463	100%

(Source: Population data from the Village Head Mekarsari 2015)

The Population Around Mekarsari Based Livelihood shows on the table 4

Table 4 Population Data according Livelihood

No.	The work group	Man	Female	amount	%
1.	Farmer	60	35	95	2.33%
2.	Trader	396	315	711	17.44%
3.	Handyman	85	0	85	2.08%
4.	Labor	512	327	839	20.57%
5.	entrepreneur	398	217	615	15.08%
6.	PNS	52	40	92	2.26%
7.	Police	3	0	3	0.07%
8.	TNI	9	0	9	0.22%
9.	Employee	728	793	1,521	37.30%
10.	Retired	35	8	43	1.05%
11.	etc	40	25	65	1.59%
amount		2318	1,760	4,078	

(Source: Population data from the Village Head Mekarsari 2015)

D. Development of Visitors Mekarsari

Tourists in Mekarsari resulted in the active interaction between the manager and tourists, or create impression. The better the impression given the greater the value obtained by tourists in the form of tour experience, therefore multiple visit from the tourists will bring advantage for Mekarsari. However the development of a visitor in Mekarsari less profitable. Based on visitor chart in Figure 4 below, shows that between 2003 to 2008 there was an increase in the number of visitors is large enough. However from 2009 to 2013, the number of visitors continues to decline.

Figure 4. Tourism Growth Charts visit to Taman Mekarsari (source: Presentation GM Mekarsari Park, Day Cape)

E. Management of the environment

According to Endah (2005: 317) that tourists in agrotourism in average require *space range* of 25 m² per person. The formula used to calculate the carrying capacity of the environment in agrotourism is Cifuentes formula (Fandeli, 2012):

$$PCC = A \times \frac{1}{B} \times Rf$$

PCC: Physical Carrying Capacity

A: area used for tour

B: area required by every tourist to travel in a fixed gain satisfaction

Rf: Factor rotation

For Mekarsari Tourism Park with total area of 2.376 million m² the maximum visitor is 285120 per year. It is recommended that the number of visitor does not exceeds the capacity to prevent *over valued*. *Over valued* is the assessment that crosses a boundary with the approach of economic calculation.

For waste water management buildings, Mekarsari have waste water treatment plant called the sewage treatment plant (STP). For waste and garbage from organic materials are made into organic compost (fertilizer).

For Visitor Management, Along with the construction and development of the number of visitors caused biotic potential environmental damage due to the behavior of visitors such as taking out the trash in any place, damaging the plants by picking unripe fruit, trampled down and many other potential damage caused by human actions.

F. Patterns Community Empowerment Around

For Employee Recruitment, Mekarsari open up employment opportunities for the surrounding community as seen in the following data.

(Processed Research, 2015)

Figure 5 Can Opens Location Object Field Work in Tourism for Local Communities

For Provide Business Opportunities around Mekarsari, Mekarsari enable people to trade as revealed in the following data.

(Processed Research, 2015)

Figure 6 Open Opportunity for People To Trade

Give the public the opportunity to open a business in the service sector such as lodging, restaurants, and rental vehicles.

(Processed Research, 2015)

Figure 7 Community Opportunity Opens For Business In The Field Services such as Accommodation, Restaurants, and Rental Vehicle

For *Corporate Social Responsibility* Program, *Corporate social responsibility* (CSR) is a concern for business organizations to act in their own ways in serving the interests of the organization and external public interest (Schermerhorn, 1993). CSR program manager Mekarsari packaged in the form of Community Development (empowerment), be it in the fields of economy, education, social and cultural sectors, as well as the field of agricultural resources. One of the CSR programs, PT. Mekar Sari Unggul (MUS) of Mekarsari is committed to make the "Partnership Program for Community Empowerment Through the Plasma Core Based on the Sustainable Agriculture Enterprises".

G. Efforts to Increase Revenues

For Sources of Revenue Current, the increasing number of agro tourism causes the level of competition in the tourism industry is getting tougher. This lead directly to the number of visits in Mekarsari. In the last five years as seen on the table, the number of tourists visiting Mekarsari in 2008 and 2011 declined. Despite the declining in the number of visitors, revenue obtained constantly rising starting in 2009. Here are the statistical data the number of visitors and revenue Mekarsari from 2008 to 2012.

Table 6 Development of tourist arrivals and revenues Mekarsari 2008-2012

Year	Number of visitors	Revenue (USD)
2008	1658421	60.3 billion
2009	1513758	49.2 billion
2010	1315406	52.1 billion
2011	1187064	59 billion
2012	1.20518 million	63.8 billion

Source: The Tourism Business Development (PUW) Pt Mekar Sari Unggul

Table 7. Structure of Income (Revenue) Facilities and rides Mekarsari 2008-2012 (in percent)

Source of Income	Year				
	2008	2009	2010	2011	2012
Entrance ticket	26.35	13.05	8.99	8.29	5.83
Ticket Forum	18.15	29.60	21.58	19.97	15.86
Tour packages	31.42	30.56	46.36	52.52	60.73
Lodging	-	1.54	1.52	1.42	1.35
Fruit shop, souvenirs, garden centers and souvenirs	24.8	25.25	21.55	17.80	16.23
Total	100	100	100	100	100

Source: The Tourism Business Development (PUW) Superior Mekar Sari Pt.

For Product Diversification, In 2005 Mekarsari made some changes in the concept of being *Differentiation and Brand* ie the concept of promoting tourism products in Mekarsari. The promotional activities were carried out such as: through television, radio, print media. *Differentiation* is a strategy to win the competition. The essence of differentiation strategy is to provide a unique service. For example in 2008 brought the concept of after-themed International Level National Level. In 2011 until now Mekarsari uses the original concept: *Back to Mekarsari as a Fruits Garden*.

H. Sustainable Agrotourism Development Model

There is three Aspect of Development the important note in the sustainable agrotourism as follows: (1) Environment Aspect, For Stewardship, The Land management needs to pay attention to several considerations including: (a) Infrastructure that based on the need and close to an attraction. (b) Building follow the standards ratio. (c) Number of toilets should be prepared based on a target maximum number of visitors. (d) The maximum number of visitors in the specified area of the garden is based on the following formula:*** (Fandeli, 2012), Maximum tourists are 285 120 people per year. (f) Integration of attraction and tourism packages to maximize the number of visitors and to obtain the targeted revenue. For waste management, Both organic waste, liquid waste and non-organic waste re-processing needs to be done so that Mekarsari perceived not only as a tourist attraction but also as a suggestion to educate the public, especially school children. Non-organic waste reprocessed in collaboration community useful products, such as flowers and others. For Visitor Management, In order for the process of education of the obedience and discipline can be realized then the manager needs to do things as follows: (a) the management like Mekarsari should use the information in writing that is placed on each location visited by the visitors; (b) The tour guides always provide information about things that should not be done during a visit in Mekarsari.

The Second Aspect is Community empowerment, where for Employee recruitment, Providing or facilitating the employees to get higher education for their career advantage and development. For Business opportunities in the area Mekarsari, There must be a balance between the profit earned and the risk that obtained in the future. Slick layout will give the impression of a charming for tourists who come to spend their time traveled. Must be pursued there is a food counter in each vehicle to the direction of the product from the manager Mekarsari with due regard to health and hygiene standards. And *Corporate Social Responsibility*, CSR program that was developed is in addition to . those currently available, managers need to conduct training ranging from the provision of seeds to harvesting and distribution to Mekarsari to the agricultural community to plant / plants that produce fruits that are popular/high demand.

The last aspect is Aspects of Income:where for Current Revenue Sources, in an effort to increase revenue it needs to do things as follows: (a) enhancing cooperation with companies and schools, as well as higher education in the

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Figure 7 Community Opportunity Opens For Business In The Field Services such as Accommodation, Restaurants, and Rental Vehicle

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country and outside the country to conduct research. (b) Online ticket purchasing system making it easier for visitors to make transactions

For Product Diversification, To increase the interest of visitors not only to playing rides, stay and shop, enjoying the playground, they should also get information about the types of plants and the reproduction. It also required diversification of products by adding new products that are linked with existing products. And Each package of the products offered have characteristics and advantages.

V. CONCLUSION AND SUGGESTION

Based on the previous explanation above, the research concludes: (1) To save guard the environmental aspects it is important to take into account the ratio between the standard of garden land available with the number of visitors. Ideal ratio is around 8: 1. Furthermore, in order to keep the plant from less responsible visitors, there must be some signboards installed constraints information on things that tourist can and cannot do. (2) A specific empowerment of local communities can be pursued proactively in organizing activities of *Corporate Social Responsibility*. Ratio number of permanent employees and contract must be maintained at a ratio of 3: 1. Also providing meals that meets the health and hygiene standards. (3) To increase the revenue by e.g. grouping the attractions and tour packages based on zones with each zone must have its own uniqueness.

Mekarsari sustainable development need to consider the following: (1) To limit the number of visitors to maximum 285.120 people per year. The infrastructure are carefully designed and based on the known standard. Both organic waste, liquid and non-organic waste reprocessing should be done therefore Mekarsari is perceived not only as a tourist attraction but also can assist in public education, especially school children. (2) To facilitate the employees of Mekarsari by to get higher education for employees advantage to have better chance in terms of career pathway than just manual labor. (3) To enhance the cooperation with other companies and school, as well as higher education in the country and abroad to conduct research on tourism products including the characteristics and advantages.

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