

# Botanical Garden as a Recreational Park: Balancing Economic Interest with Conservation

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**Abstract**— Bali Botanic Garden (Kebun Raya Bali) was originally established for botanical research and conservation, but has subsequently grown as an attractive tourism attraction. To attain information on the development of Bali Botanic Garden, this study examines several research questions as follows: (1) what are the characteristics of visitors?; (2) what is the perception of visitors on Bali Botanic Garden?; (3) which factors push and motivate visitors to come?; (4) which factors affect the visitors of Bali Botanic Garden?. This study utilized survey method with 88 respondents as the sample. The instrument used was in the form of questionnaire, which was then analyzed with descriptive statistical tools, and factor analysis to determine factors that affect visitors to visit Bali Botanic Garden. The results are as follows: (1) visitors of Bali Botanic Garden is dominated by domestic tourists, students and private employees, 20 to 40 age group, repeat visitors, and male visitors; (2) visitors of Bali Botanic Garden are pushed and motivated by the needs for relaxation, escape, strengthening family bond and play as very strong push factors. Secondary push factors include the needs for interaction, prestige, educational opportunity, and wish fulfillment as strong push factors. Meanwhile, romance and self-fulfillment are weak push factors; (3) five factors affect Bali Botanic Garden as a destination, including fees and service, natural attraction, accessibility, atmosphere, and facilities. Several recommendations for the management of Bali Botanic Garden include: (1) consider to visitor characteristics when diversifying the botanical garden; (2) pay attention to push factors deemed important by visitors to better match their expectations; (3) consider the five factors that were formed in managing, conserving, and utilizing the botanical garden so that this garden remain a viable tourism destination for locals and visitors.

**Index Terms**— accessibility, attractiveness, attraction, facility, motivation, recreation

## 1 INTRODUCTION

Agricultural development in the framework of agribusiness system is a chain of: (1) upstream agribusiness, i.e., is all economic activities that produce infrastructures and apparatus for primary agriculture (i.e., farming); (2) on-farm agribusiness or primary agriculture, i.e., activities that utilize the means of production and upstream agribusiness to produce primary agricultural commodities, which in Indonesia is also called farming; (3) downstream agribusiness, i.e., economic activities that transform primary agricultural commodities into processed products both in the forms of intermediate and finished products; and (4) supporting services, i.e., activities that provide services for the three other agribusiness activities (Deptan, 2005). The aforementioned concept of agribusiness development is in accordance to the needs for agro tourism development. Agro tourism is one form of agribusiness that emphasizes the sale of services to consumers. The services may involve providing beauty, comfort, peace and education for consumers. The development of agro tourism business requires excellent management among and within the systems, namely the availability of tourism infrastructure and facilities, the object being "sold", its promotion and related services (Deptan, 2005).

As an agricultural nation, Indonesia has diverse natural resources and biodiversity that, if managed properly, could become the main driver of the national economy. An Agro-climatic condition in Indonesia is suitable for the development of tropical commodities and some sub-tropical

commodities, growing at the altitude of between zeros to thousands of meters above sea level. Agricultural commodities (including food crops, horticulture, plantation, forestry, cattle and fishery) with their high valued diversity and uniqueness, reinforced by the wealth of diverse cultural heritages, have the strong appeal as agro tourism or agriculture-based ecotourism and have the potential to be a driving force in the nation's economy (Deptan, 2005).

Meanwhile, the preferences and motivation of tourists have changed dynamically. The tendency of fulfilling the needs to travel in the form of specific objects such as enjoying the fresh air, beautiful scenery, traditional production of goods, as well as modern agricultural products have shown a rapid increase. This trend is a signal of the high demand for agro tourism and thus opening the door for the development of agribusiness products in the form of regional development or agricultural products with specific appeals (Deptan, 2005). Vast expanse of the planting areas such as the various plantations and horticultural lands, in addition to beautiful scenery and fresh air, is also a medium of education for communities at large, ranging from educational activities in respective fields to the education of environmental harmony and sustainability (Deptan, 2005).

Agro attractions are not just limited to objects with wide expansive scales as plantations, but also small scale areas because of their uniqueness as an interesting attraction. With the arrival of visiting tourists to these attractions more market opportunities open up, not only for the related products and agro attractions, but also market opportunities

to fulfil various other needs of the communities. Thus agro tourism is not only the business of fulfilling consumers' needs by selling beautiful scenery and fresh air with related services, but is also a medium to promote agricultural products and for educating the public, while giving the signal for the diversification of agricultural products as well as new growth areas in the region's economic development. Agro tourism could be a new source for regional development, for the agricultural sector, and for the national economy (Deptan, 2005).

The potential of agro tourism development in the Province of Bali is immense. Meanwhile, Sudibya (2002) cited that international tourism has undergone a shift with the tendency to environmentally conscious ecotourism, nature conservation with responsible use of the natural environment. Ecotourism and agro tourism are hoped to increase the welfare of local communities, increase the passion for small business development such as handicrafts, agriculture, and other business sectors as ecotourism is a branch of tourism that involve direct contact with the local population in which the tourism object is located.

## 2. Utilizing Nature as Tourist Attraction

Tourists visiting Bali these days have a tendency not only to enjoy the island's unique socio-cultural aspects but also to be concerned with nature and the environment (Sudibya, 2002). Each ecosystem with all its contents (its physical and biological resources) is virtually a tourist attraction that can be developed as natural attractions. Increasingly diverse tourism interests and activities requires even more diverse attractions (Fandeli, 2001). Both of the abovementioned opinions serve as the foundation to the belief that nature plays an important role in tourism. Beautiful unique natural sites and rare natural attractions are appealing to tourists and thus can become sought-after tourist attractions.

Brahmantyo, et. al. (2001) conducted research on the potential and opportunities in the tourism development of Mount Salak Endah, in which they found several natural potentials to be used as ecotourism attractions. The potentials include Ciumpet waterfall, campsite areas, agricultural land as agro tourism attraction, jetted pond, fishing arena (aquaculture), beekeeping areas, horse farms, forestry and plantation tours, as well as coffee processing plant tours. Meanwhile, Sudibya (2002) identified that ecotourism has the potential to be developed in Bali. Jembrana regency has the potential for developing various types of ecotourism by utilizing the West Bali National Park, camping and trekking activities combined with snorkeling at Menjangan Island. Buleleng has the potential for developing various agro tourism ares considering this regency has vast agricultural regions. Various industrial plants such as tangerine, tobacco, grape vineyards and other horticultural commoditized can be cultivated in the regency. Tabanan can intensify the development of horticulture and flower gardens for the purposes of hotels and restaurants, as well as for the general

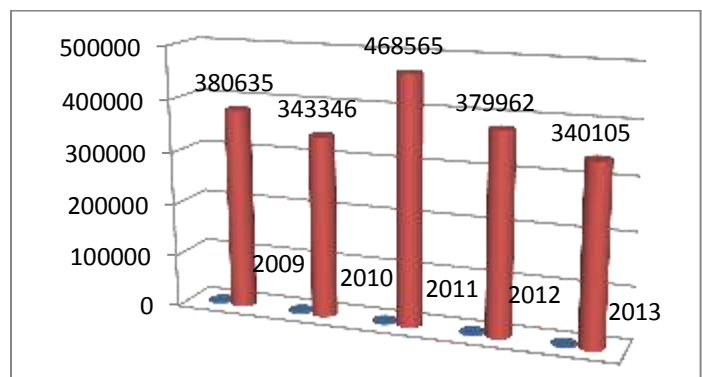
public. Bali Botanic Garden can also be better utilized, as tourism attractions as well as for research and education.

Bangli regency has the potential for the development of cattle breeding, especially fattening cattle and poultry for meat to supply to hotels and restaurants. Lake Batur can be developed as freshwater fishery, both for the tourism industry and local consumption. Nusa Penida Island has the potential for the development of cattle breeding to produce high quality meat. In principle, Bali's nature has such great potential to be developed into ecotourism. Furthermore, Sudibya (2002) explained that currently tourism attractions and activities closely related to ecotourism already exist in the form of white river rafting, cruising/sailing, Bird Park, Elephant Park, Reptile Park, Butterfly Park, orchid garden, and horse riding.

One form of agricultural diversification as well as tourism diversification is the development of agro tourism or agriculture-based ecotourism. Gregorius (2005) explained that, aside being known for its rich culture and natural scenery, Bali also has a number of artificial tourism attractions in the form of parks. Parks are synonymous with flowers, trees and various animal species, thus giving birth to the image of beauty, nature and freshness. On holidays, visitors swarm the gardens to learn about the collections or simply to eliminate boredom and to escape daily routines.

To be able to preserve its beauty, parks and gardens need substantial amounts of funds. The existing gardens in Bali today have largely been well-maintained, either by the government or the private sector or by the cooperation of both. Managers are required to have many ways and means for fundraising to finance the parks' maintenance. Without management, the collection of the parks will be stagnant, not well maintained and eventually abandoned by visitors (Gregorius, 2005).

For a clearer empirical understanding, Graph 1 illustrates annual tourist visits at Bali Botanic Garden:



Graph 1. Tourist Visits to Bali Botanic Garden, Year 2009-2013  
Source: Disparda Bali (2014)

Other than as a place of recreation, parks also have the function of education and conservation. Bali Botanic Garden is not referred to as a park, but it can be categorized as a park when seen from its function. The park hosts various species of trees, from common to rare. Bali Botanic Garden, in fact, has applied the concept of agri-

business in its management because the park nurtures and cultivates various types of plants such as orchids and other tropical flowers to be sold as recreational services products and for tours (Gregorius, 2005).

The presence of parks is believed to strengthen Bali's appeal as a tourism destination. However, more artificial objects are needed to enrich Bali's tourism appeal and to empower communities as far as economic growth. If Bali only survives with its existing traditional attractions, there is a possibility that Bali will be abandoned by tourists or at least will lose its appeal. More statistical data about visitors to the parks is needed to support this assertion (Gregorius, 2005).

Bali Botanic Garden was originally created as a plant conservation institution, but has since developed into a charming and attractive tourist attraction (i.e., recreational park), because it combines elements of natural beauty, rarity, and diversity of plant species. By doing research on visitors to the Bali Botanic Garden, it is expected that useful information can be gathered for the development of parks or other botanical gardens in Bali.

### 3 RESEARCH METHODS

Respondents/samples was determined using accidental sampling method, which is the sampling method that applies to all visitors who happened to be visiting in Bali Botanical Garden during the duration of the research and considered able to provide answers about their perceptions related Bali Botanic Garden as the recreational place. In this study, the sample size was determined using the requirement factor analysis tools. This study utilized survey method with 88 visitors as the respondents. The instrument used was in the form of questionnaire, which was then analyzed with descriptive statistical tools, and factor analysis to determine factors that affect visitors to visit Bali Botanic Garden. The instrument was used in the form of questionnaire related to the Bali Botanic Garden using the attributes of tourist destination attributes, i.e. attributes of facilities, attractions or attractiveness, accessibility, and service.

### 4 RESEARCH FINDING

Bali Botanic Garden is one of four botanical gardens under the management of the Indonesian Institute of Sciences (LIPI). The master plan for the development of Bali Botanic Garden is based on the analysis of long-term needs as follows: (1) collecting various types of Gymnospermae, i.e. types coniferous plants from all over the world, (2) collecting plant species from all over Bali and Nusa Tenggara whose natural habitat is derived from montane or highland wetlands, (3) providing recreational and tourism object in Bali, in addition to providing facilities for scientific knowledge, (4) undertaking additional efforts to support the financing of the botanic gardens (Sujana, 2002).

Among the richness of plant collections in

Indonesia's four botanical gardens in Indonesia, Bali Botanic Garden is recorded to have 20 plant types, while Purwodadi Botanic Garden has 48 plant species, Cibodas Botanic Garden has 55 types of plants, and the garden with the highest number of collection is Bogor Botanic Garden with 177 plant types.

Meanwhile, the primary tasks of Bali Botanic Garden is performing inventory, exploration, and conservation of tropical plants from the highland wetlands with high scientific and educational value. To carry out these tasks, Bali Botanic Garden has the following functions: (1) to perform an inventory of the various types of tropical plants from the highland wetlands, (2) to perform exploration of tropical plant species whose habitat is the moist highlands, (3) to perform conservation of tropical plants from the moist highlands that have the potential scientific and economic value in order to preserve biological diversity (germ plasm) of Indonesian, (4) to conduct scientific services in the field of landscape architecture in the form of gardening a variety of ornamental plants (floracultural), the introduction and encourage community appreciation on the efficacy of natural plants, and (5) to perform administrative activities (Sujana, 2002).



Photo 1. Bali Botanic Garden  
Source: Research Documentation, 2014

Photo 1 shows the Bali Botanic Garden as a beautiful, charming, and well-kept attraction still appealing to many tourists. Well-kept rare trees with a variety of well-preserved plants indicate that managers of Bali Botanic Garden are still consistent with their assigned tasks.

Based on the analysis performed in this study, the findings are summed up as follows:

- [1] The characteristics of respondents who visited Bali Botanic Garden can be described as follows: (a) the respondents or visitors of Bali Botanic Garden were dominated by domestic tourists; (b) students and private employees were the dominant groups of visitors when it came to profession of respondents; (c) the respondents or tourists were dominated by the age group of 20 to 40 years old; (d) the respondents or tourists were dominated by those who are repeat visitors to Bali Botanic Garden; (e) there were more men than women respondents or tourists who visited Bali Botanic Garden.



- [2] Foreign respondents or tourists generally had a positive perception of Bali Botanic Garden by placing the available attractions at Bali Botanic Garden at the first rank, then the accessibility and facilities as the second rank, and the attributes of Bali Botanic Garden as the third rank when it came to the appealing features of the botanical garden.
- [3] Domestic respondents or tourists also had a positive perception of Bali Botanic Garden, placing attraction first, facility second, and accessibility third as the appealing features of Bali Botanic Garden.
- [4] Domestic and foreign respondents or tourists had the same perception of Bali Botanic Garden, which is predominantly positive.
- [5] The respondent or tourists visiting Bali Botanic Garden were divided into 3 groups by motivation. The first group (>75%) is the tourists who visited Bali Botanic Garden driven by factors of relaxation, escape, strengthening family bonds, and play. The second group (50-75%) is the tourists who visited Bali Botanic Garden driven by the need for social interaction, prestige, educational opportunity, and wish-fulfillment. The third group (<50%) is the tourists who visited Bali Botanic Garden driven by factors of romance and self-fulfillment.
- [6] There are five factors formed in Bali Botanic Garden in conjunction with tourist visits. These factors are: (a) fees and services (variance explained 27.791%), (b) natural attractions (explained variance 15.712%), (c) accessibility (explained variance 12.010%), (d) atmosphere (explained variance 7.990%), and (e) facility (explained variance 5.715%).

## 5 CONCLUSIONS AND RECOMMENDATIONS

The research findings and discussion of this study indicated that natural beauty is the main attraction for Bali Botanic Garden, which has been able to provide considerable stimulus for tourists to visit Bali Botanic Garden, second only to the factor of fees and services. Based on the research findings, there are several recommendations proposed to the managers of Bali Botanic Garden, visitors or tourists, and government officials as follows:

- [1] Managers should diversify the product offerings based on a priority scale, the first priority being fees and services, the second priority should be the natural attractions, third the accessibility, the fourth priority should be the atmosphere, and the fifth factor is the facilities. The first consideration should be given to the domestic market segment, the younger age group (20-40 years), and maintaining good relationship with existing and repeat visitors. Because more than 75% of respondents visiting Bali Botanic Garden did so for recreational purposes, then the creation and distribution of brochures and other forms of dissemination of information should emphasize the recreational nature of this botanical garden with the hope of adding new nuances and marketing added value for tourists, in addition to keeping

the main task of this botanical garden as an institution for plant conservation.

- [2] The sustainability, beauty, and diversity of plant species in Bali Botanic Garden will be preserved if visiting tourists participate in the efforts to create sustainability. For example, by not destructing plants in the botanical garden and by placing the trash in the designated areas. Tourist visits is expected to continue, since visits to this park allow managers attain funding for maintenance, planting new plants, garden arrangements, as well as other economically and socially beneficial efforts.
- [3] Government officials, managers, and the general public should cooperate in all respects, especially in terms of economic benefits by applying the concept of income distribution to avoid unwanted conflicts. Stakeholders of Bali Botanic Garden can give guidance to the communities around the park in terms of sale of plants, provision of souvenirs, sale of vegetables, and sale of fruits so that the local people can feel the benefits of the existence of Bali Botanic Garden.
- [4] Business practitioners interested in developing a park or botanical garden should take advantage of this study findings, that fees and services have the greatest influence in attracting visitors, then natural attractions including the collection of flowers, trees, and orchids supported by natural beauty also have great influence in appealing to visitors. Other factors including facilities, atmosphere, and accessibility should also be considered in the development of agro-based recreational park.

## ACKNOWLEDGMENT

The author expresses the highest gratitude to the Rector of Bali Dhyana Pura University and the Chairman of Dhyana Pura Foundation who have given complete authorization for the author to undertake this research. Special thanks to Putu Chris Susanto as internal editor and translator who has made the report more communicable, as well as Dhyana Pura University student who participated in a volunteer team for the primary data collection of this study. May God repay your generosity.

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