

Gladiolus Plants As An Alternative To Agro-Ecotourism

Ari Wijayani, Rina Srilestari

Universitas Pembangunan Nasional Veteran Yogyakarta
E-mail address: ariwijayani@yahoo.com

Abstract

The arrangement of the area becomes an attractive tourist attraction for tourists while building the economy of the community so that more needs to be done by designing a village into a tourist location. The local community is also encouraged to participate in tourism in its area by more creative in reading business opportunities that are able to benefit themselves and the citizens as a whole so that it will create a socially, economically independent society and always maintain the sustainability of local culture by optimizing the utilization of existing resources. The arrangement of the area needs to be done thoroughly in bandungan village, including lodging for tourists who intend to intern. Flower planting needs to be done continuously and continuously so that tourists who only visit for a moment to take pictures can be served and feel at home lingering in tourist locations.

Keywords: agro-ecotourism, regional arrangement, gladioli plant



This is an open access article under the CC–BY-NC license.

I. INTRODUCTION

The concept of agro-ecotourism is a community approach to the standard in the tourism development process, which involves the community that is in it is a very important factor for the success of tourism products. The idea of creating a tourist village becomes an alternative choice of the tourism development model in a local context (BTDC, 2009; Dahlan, I., 2004). By designing a village into a tourist location will boost the economy of the local community. The community is also encouraged to participate in tourism in its area by being more creative in reading business opportunities that are able to benefit themselves and the citizens as a whole so that it will create a socially, economically independent society and always maintain the sustainability of local culture by optimizing the utilization of existing resources (Make, J., (2004; Acharya, P., 2001). In addition, because the selling value maintained is unique, local character and potential, then the sustainability of local culture becomes the sole responsibility to the residents and prevents ecological deterioration. The negative excesses of demoralization that usually used the community due to the tourism industry are able to be protected by the power and wisdom of local culture as a social system that covers the societal order (Pellis, A., 2019)

Development continues to be carried out including the arrangement of the area to be an attractive tourist attraction while also building the economy of the community to further improve. Therefore, a joint effort is needed to continue to lift tourism in Bandungan and improve the welfare of the local community in it (Acharya, P., 2001). Tourists who come to this area will be treated to a beautiful and attractive flower garden and at the same time be able to buy flower seedlings, so as to turn on the economic wheels of the local community. In addition to flower houses containing various ornamental plants, there are also specific plants in the area namely chrysanthemums, dahlias, and roses. In addition, various other ornamental plants, such as anthurium flowers, orchids, palm wares, cactus, Sabrina, etc. become mainstays of local farmers (Wijayani, A et al, 2016).

The role of the government and local relevant agencies in the development of tourist villages as facilitators for the emergence of local community participation in community development as well as the success of programs launched by the local community as well as directing the development that it craves more integrally. To strengthen economic potential, it is necessary to maintain the quality and quantity of products. In this case, the government and related agencies have a responsibility to provide incentives to cultural actors by strengthening the capacity of cultural craftsmen through training both on the development and form of design, model. In addition, it is necessary to give the ability to cultural activists and societal institutions equipped with English language skills (CBS, 2004; Dangol, D. R. and B. Ranabhat, 2007).

II. LITERATURE REVIEWS

II.1. Regional setup concept

Bandungan area is located on the slopes of Mount Unggaran, Semarang regency. Not a few tourists who make this tourist area in Bandungan become a favorite area. There are many tourist attractions that you can find here, ranging from nature tourism, family tours to historical tours. Some tourist locations located in Bandungan are New Bandungan Indah Waterpark, Gedong Songo Temple Historical Tourism, Bandungan Flower Market, Rose Camp Nature Tourism, and Gunung Unggaran Nature Tourism (Rudi, 2019). The arrangement of the area begins with the arrangement of the area that becomes an attractive tourist attraction for tourists while building the economy of the community to further improve. Therefore, a joint effort is needed to continue to lift tourism in Bandungan and improve the welfare of the local community that is in it. In the first stage will be made deep lot cultivation of ornamental plants mainly will use specific plants in the area namely gladioli. The beauty value of gladioli plants can be seen in the diversity of shapes as well as the color of the flowers. Due to the importance of the flower and ornamental plant sectors in agribusiness, the Brazilian state analyzes the situation of its various segments and sets policies and actions that support the direction of ornamental plant-based agribusiness. (Paiva, PDO. Et al., 2020; Lackey, NQ, and Lisa Pennisi, 2019).

The concept of agro-ecotourism is a community approach that becomes the standard in the process of structuring tourism areas, which involves people who are in it is a very important factor for the success of tourism products (Dangol, D. R. and B. Ranabhat, 2007). The idea of creating a tourist village became an alternative choice of the tourism development model in a local context (Dahlan, I, 2004). By designing a village into a tourist location will boost the economy of the local community. The community is also

encouraged to participate in tourism in its area by being more creative in reading business opportunities that are able to benefit themselves and the citizens as a whole so that it will create a socially, economically independent society and always maintain the sustainability of local culture by optimizing the utilization of existing resources (Make, J., 2006).

Furthermore, to support the achievement of tourism development with the concept of agro-ecotourism, the role of several parties, namely local government, NGOs, and universities. The role of the government and local relevant agencies in the development of tourist villages as facilitators for the emergence of local community participation in community development as well as the success of programs launched by the local community as well as directing the development that it craves more integrally. Local villagers can more effectively plan and design their ecotourism projects as a 'living museum'. Lackey, NQ. & Lisa Pennisi, (2019) exemplifies communities in Africa organizing their regions while adjusting to the design challenges of CBE (Community-based ecotourism) projects related to cultural authenticity, cultural commodification, privacy.

NGOs are expected to work with the government to establish a community Guide so that existing guides can be organized, guided, and built regularly. In addition, a hospitality community is needed, as well as a community of manufacturers and art shops to set the same price standards to prevent imperfect competition that will harm artisans. Several factors need to be considered in relation to NGOs, namely, community mentoring, module creation, and regular cultural art exhibitions and performances (Uhlmann, LO. et al., 2015)

Universities are tasked with conducting research and providing constructive input to the Government and Stakeholders of tourist villages to strengthen institutions to keep going, maintain the sustainability of local culture, and develop research that can develop the potential – the potential contained in tourist villages tailored to the character of each village.

II.2. Local Economic Development Concept (PEL)

The handling of the area should be done in its entirety, not just the spatial arrangement and design of infrastructure facilities. In line with the development of problems in the tourist village to develop investment and industry in order to improve the local community, in this research will be applied the concept through the local economic planning of the tourist village. One of them is the development of the competitiveness of tourist villages. Unique local potential and attributes will help the development of competitiveness. To help the competitiveness of each local community it is necessary to understand and act on strengths, weaknesses, opportunities, and threats to make its local community attractive to business activities. According to Dangol, DR, and B. Ranabhat (2007) competitiveness can be measured by several indicators namely economic structure such as economic composition, productivity, output, and added value as well as investment level. In addition, the potential of nontradable areas and human resources that support tourism village industry activities as well as institutional and community behavior

II.3 Gladiol Plant Development

Gladioli as the main plant to be developed in disaster-affected areas have been selected based on many factors, including native plants of the area that are resistant to the natural conditions of Bandung. Gladioli is a monoecious plant, meaning male and female flowers are separated in different bunches

where the male flower cooks first compared to the female flower. The flowers are arranged in one flower stalk, each flower has 5-10 stalks of stamens, while the female flower is composed of a pseudo flower crown with pistil (pistil), and over (forerunner). (Uhlmann, LO. et al., 2015; Paiva, PDO. Et al., 2020)

In the Bandungan area will be sought ornamental plants that are able to attract tourists as well as alternative regional arrangements. Gladioli (*Gladiolus communis* L.) is known as one of the famous cut ornamental plants or cut flowers and has the potential for commercial development (Munar, EAV., ET al, 2019). Gladioli flowers vary in color, shape, or size. The color of the flower can include all colors except blue, black, and brown (Uhlmann, LO. et al., 2015). Gladioli flowers are cone-shaped with flat, corrugated, and conical crown stalks at the ends. Each floret is protected by two green petals. Gladioli cultivars are distinguished by floret size, base color, and color sharpness (Uhlmann, LO. et al., 2015). According to Paiva, PDO. Et al., (2020), gladioli plants can grow well on fertile soils, loosely contain many organic materials, and have good aeration and drainage. Meanwhile a good ground pH between 5.8-6.5 with an optimum temperature of 10-25 oC. It is generally planted at an altitude of 250-1500 meters above sea level with rainfall of 2000-2500 mm per year.

III. RESEARCH METHODOLOGY

The types of research applied are Field research and Participatory Action Research (PAR). The activities carried out in this research, in general, include: Identify potential, problems, opportunities, and challenges in the development of agro-ecotourism in order to improve the welfare of local communities of tourist areas in Bandungan including tourist data. The creation of a deep lot to test the fertility of the land in the bandungan area with gladioli plants that are at the same time for the empowerment of local communities. Field Research is conducted by testing the technical aspects of cultivation using a complete random design (RAL), with one factor, namely growing media (control, soil + compost, soil + case, soil + manure, and soil + compost + kissing + manure). All treatment is repeated 3 times and each experimental unit consists of 10 plants, each test unit taken three sample plants.

IV. RESULTS AND DISCUSSIONS

The educational nuances created in Bandungan village encourage cross-culture understanding that is conveyed directly to the laypeople. Meeting citizens with tourists is a form of socio-cultural interaction that will open the horizon of other people's cultural knowledge more broadly. This manifests itself in a new lifestyle and awareness of the deeper value of human relationships. According to Make, J. (2006) and Lackey, NQ, and Lisa Pennisi (2019) the development of agronomy-based tourism can be emphasized equality between the community and tourists and the process of developing culture as the identity of the nation. In Bandungan, tourists stay to learn about gladioli flower cultivation.

The results of primary data collection through surveys and observations directly in the field are by interviewing and sharing questionnaires with respondents. More data can be decrypted in table 1.

Table 1. Tourist data and length of visit in Bandungan area (before pandemic)

Origin Tourists	General-purpose tourists	Long visit	Special purpose to gladioli garden
From outside the province 70%	New Bandungan Indah Waterpark 15%	More than 7 days 5%	Apprenticeship 10%
	Gedong Songo Temple History Tour 20%	Only 1 day 10%	Visits on farm 50%
From jateng 30%	Bandungan Flower Market 50%	Only a few hours 70%	Take 40% photos
	Rose Camp Nature Tourism 5%	Just a snap 15%	
	Unggaran Mountain Nature Tourism 10%		

Table 1 shows that the number of tourists visiting most has wanted to enjoy the bandungan flower market (70%). While tourists who visit Bandungan because of curiosity or because they want to look for other attractions than others. For this reason, it is necessary to arrange the area, even though the area has been organized as a flower center area (Wijayani, A. et al. 2016; Dahlan, I, 2004). The arrangement of the area needs to be done thoroughly in bandungan village, including lodging for tourists who intend to intern. Flower planting needs to be done continuously and continuously so that tourists who only visit for a moment to take pictures can be served and feel at home lingering in tourist locations.

The location of Bandungan which is adjacent to Gedong Songo Temple as the center of the Mangala of local and foreign tourists is able to bring a number of advantages for the surrounding residents (Rudi, 2019). Moreover, Bandungan village has a typical agro attraction that is able to suck tourists to visit, theoretically, there will be a transfer of welfare from global to local. This is called the multiplier effect. According to Dangol, DR, and B. Ranabhat (2007) sustainability and ecotourism efficiency related to biodiversity conservation are under constant supervision and are often ignored based on the negative effects arising from other types of nature-based tourism.

The creation of gladioli flower cultivation guidebook containing the way of breeding and cultivation in the production land accompanied by interesting images including special/typical product information in Bandungan village. In addition to promoting the potential, large-scale cultural events around tourist sites such as flower and crafts exhibitions and traditional cultural performances are held. The implementation of cultural events should be supported by vigorous promotion efforts with the support of stakeholders consisting of elements of the tourism village community, tourism players, and the government and related agencies (Make, J.,2006); (Ribeiro, MNO. ET al., 2015). More research can be found in table 2.

Table 2. The average percentage of the life of gladiolus plants on various additions of ameliorating

Treatment	Percentage of life treatment (%)
M1: Control	40 b
M2: Soil + compost	95 a
M3: Land + casting	90 a
M4: Soil + manure	85 a
M5 : Soil + compost + casting + manure	95 a

Description: The average followed by the same letter shows no real difference on the DMRT test at a rate of 5%

The results showed that the planting media given a mixture of organic materials differed manifestly from the control. The soil is processed and given a mixture of compost, case, manure and all three show a significant result against the percentage of growing plants. That is because the structure of the soil becomes good, is able to hold water longer than the sandy soil, and has good porosity. The low KTK (cation exchange capacity) value of volcanic ash is replaced by an amelioration that has a good KTK value. Cation exchange capacity (KTK) is the number of cations (in milliequivalents) that can be snared by soil per unit of soil weight (100 g) (Wijayani, A et al, 2017). KTK is a chemical trait that is very closely related to soil fertility. Soils with high KTK are able to absorb and provide better nutrients than low KTK. According to Wiryanta (2007), the process of ion exchange is very influential in the absorption of nutrients by plants. The higher the value of KTK, the higher the media's ability to absorb fertilizer and show the more fertile the media grows. Good growing media is able to provide space for the roots of plants to develop freely and increase in number. Amelioration is hygroscopic, the cavity is numerous so it will be both aeration and drainage, so the roots will easily move between the grains of the soil (Siglerab, WA. Et al, 2020); (Munar, EAV. et al. 2019)

Volcanic ash soil will cause the medium to grow easily to solid, but when mixed ameliorant, case, and manure will be more porous because it has good aeration and detention. Organic matter is a source of potassium for plants, among which it serves in protein formation, cell development, root development, and leaf color (Uhlmann, LO. et al., 2015) In addition to having a high carbon content (C) so that this growing medium becomes a member (Siglerab, WA. ET al, 2020).

V. CONCLUSION

Bandungan area has great potential to be developed and styled as a new tourist area in DIY. This area that is forbidden to be a residential area will be more attractive to tourists when supported by its greening. Tree planting is one way to make the area more attractive, and therefore it is necessary to first restore the land by giving a mixture of ameliorant, case, or manure to the soil. Trials using gladioli plants as development plants show good growth, especially when the media is mixed with organic materials.

THANK YOU

We would like to thank LPPM UPN "Veteran" Yogyakarta who has funded this research through applied research grants.

VI. REFERENCES

- BTDC, 2009. Findings of visitors' opinion survey 2008. Bhaktapur Tourism Development Committee (BTDC), Bhaktapur, Nepal.
- Dahlan, I., (2004). Opportunities for Agro-Eco-Tourism in Bario Highlands. Special Papers Presented in: Seminar on Opportunities for Agro-Eco-Tourism in Bario Highlands, Bario Seminar and Festival, 11-14 May 2004, Miri. (unpublished)
- Make, J., (2004). Horticultural development strategies for Bario with the emphasis on agro-eco-tourism. Paper presented in: Seminar on Opportunities for Agro-Eco- Tourism in Bario Highlands, Bario Seminar and Festival, 11-14 May 2004, Miri.
- Acharya, P., 2001. Impact of tourism in economic and socio-cultural aspects of Lumbini VDC; an anthropological case study. Master's dissertation submitted to Tribhuvan University, Nepal.
- Pellis, A., 2019. Reality effects of conflict avoidance in rewilding and ecotourism practices – the case of Western Iberia. *Journal of Ecotourism* Vol 18 (4) Pages: 316-331
- Wijaya, A., Maffei, Ratna Roostika, and Moffit Eko Purwanto. 2016. In vitro regeneration of chrysanthemum callus after gamma-ray irradiation for resistance to medium plains. *Journal of Information* Vol 19 No. 6A: 1813-1818
- CBS, 2004. Nepal Living Standards Survey 2003/04. Central Bureau of Statistics, Kathamndu.
- Dangol, D. R., and B. Ranabhat, 2007. Developing Agro-ecotourism in Nepal. *NTTR*, Nov. 12-25, 2007, Nepal. pp.30-33.
- Wijayani, A., Rina Srilestari, and B. Supriyanta (2017). The explants of planet induction using auxin and cytokinin shortly after the gamma-ray irradiation and the gripped polyethylene glycol. *Journal of engineering and applied sciences*, 12 (15). Pp. 3905-3908.
- Rudi, 2019. 10 lokasi Wisata Bandungan, Wisata Dataran Tinggi yang Sejuk. <https://www.nativeindonesia.com/objek-wisata-bandungan/>
- Paiva, PDO, Gabriela Silva Sant'Ana, Francilene de Lourdes Bonifácio, Michele Valquíria dos Reis, Paulo Henrique Sales Guimarães, 2020. Flower and ornamental plant consumers profile and behavior. *J. ornamental horticulture* Vol 26, No 3: 333-345
- Make, J. (2006). Rebranding Bario: From Backpackers Heaven to Premium Rural Health-Based

- Agro-Eco-Tourism Destination. Paper presented in Orang Ulu National Association Tourism Seminar cum Workshop. 24 – 26 February 2006, Dynasty Hotel, Miri.
- Lackey, N.Q and Lisa Pennisi, 2019. Ecotour guide training program methods and characteristics: a case study from the African bush. *Journal of Ecotourism* Vol 19 (3) Pages: 217-232
- Uhlmann, LO., Camila Coelho Becker, Regina Tomiozzo, Nereu Augusto Streck, Alfredo Schons, Darlan Scapini Balest, Mara dos Santos Braga, Natalia Teixeira Schwab, Josana Andreia Langner. Gladiolus as an alternative for diversification and profit in small rural property. *J. Ornamental horticulture* Vol 25, No 2: 200-208
- Munar, EAV., Carlos Ricardo Bojaca Aldana. 2019. Study of natural ventilation in a Gothic multi-tunnel greenhouse designed to produce rose (*Rosa* spp.) in the high-Andean tropic. *J. Ornamental horticulture* Vol 25, No 2: 133-143
- Ribeiro, MNO., Elka Fabiana Aparecida Almeida, Marília Andrade Lessa, Pedro Martins Ribeiro Júnior, Sérgio Soares Barbosa, Júnia Rafael Mendonça Figueiredo, Simone Novaes Reis, 2015. Effects of plant conduction systems and organic fertilizer management on disease incidence and severity in ‘Osiana’ and ‘Carola’ roses. *J. Ornamental horticulture* Vol 21, No 1: 85-92
- Siglerab, WA., Stephanie A.Ewinga Clain A.Jonesab Robert A.Paynac Perry Millera Marco Manetad, 2020. Water and nitrate loss from dryland agricultural soils is controlled by management, soils, and weather. *J. Agriculture, Ecosystems & Environment* Vol. 304, 1 December 2020.