

# The Henna Flower Management Model Efficiency in Supporting Tourism Development in The Subak of Singapadu Kaler Village

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**Abstract**—The purpose of this study is to design effective cropping patterns and distribution systems for henna flowers and can support the development of tourism in Singapadu Kaler Village. Data are collected using the method of observation, interviews, documentation, and literature. The analytical tools used for quantitative analysis techniques are: Benefit Cost Ratio Analysis and Profit Margin Analysis. Whereas to analyze qualitative data using descriptive analysis techniques. Based on the results of the analysis, there are farmers who implement a continuous system and an intermittent system. Continuous systems are more effective than intermittent systems. The distribution system applied by Henna flower farmers is an indirect system by selling his henna flower interest to the agent. This system has been effective but is not optimal. After being analyzed with a direct distribution system with three different target markets, the system applied was less effective. Of the three alternatives analyzed, the direct distribution system with the target hotel market is the most effective. To meet the target needs of the hotel and be able to support tourism development, it is necessary to form a cooperative-based flower farmer community of cooperatives and collaborate with tourist attraction entrepreneurs in Singapadu Kaler village.

**Keywords**—*management model, cropping pattern, distribution system, effective*

## I. INTRODUCTION

The henna flowers are agricultural products that are acclaimed as agribusiness products which are used as ingredients to make ceremonial facilities, namely, to make caning (offerings) and other ceremonial facilities. So that the demand for henna flowers in Bali is generally and each region is very prospective. Seeing the existence of promising henna flowers, many farmers, especially in soak (agricultural organization) in the village of Singapadu Kaler use a portion of their fields to plant henna flowers.

Usually the needs of these henna flowers are related to the ceremonial activities carried out in indigenous communities in Bali, where the ceremonial activities in Bali are periodic, so ceremonial activities are not carried out every day. But with the development of tourism and other business activities small-scale ceremonies that are often called “offerings” is carried out every day. So, the demand for henna flowers occurs every day as demand for basic needs. With conditions like this, the demand for henna flowers is very fluctuation, when there are traditional ceremonies and large Hindu holidays, the demand for henna

flowers is very large, so the price of henna flowers rises sharply to reach Rp. 80,000 per person, even reaching the price be Rp 100,000 per -ka. This condition is very beneficial for farmers who plant henna flower who can increase their income. But when there is no holiday and there are no traditional ceremonies at the Sad Kahyangan temple, the Kahyangan Tiga temple and the Family temple, there is very little demand for henna flowers, only to fulfill routine ceremonial needs, so the price of henna flower is dropped at Rp. 5,000 per-ka. When the price of henna flowers drops, many farmers did not pick their henna flowers, so the henna flower fell out of the tree and rot. This condition is very detrimental to henna flower farmers, let alone getting income for picking costs, the costs for planting are not covered, not counting the transportation costs.

Seeing this phenomenon, it is necessary to have an effective management model, especially regarding the arrangement of cropping patterns of henna flowers which are adapted to traditional holidays and ceremonies in the Balinese area. So that the price of henna flowers does not experience extreme price fluctuations, which will hurt the henna flower farmers. Management is the arrangement of various activities carried out in the organization to create organizational goals and objectives [1]. Tourism Village management is carried out through tourism resource management, marketing, human resource management, and conflict management [2]. Cropping pattern is an effort to plant a plot of land by arranging the layout and sequence of plants for a certain period of time including the processing period of the land and the period not planted for a certain period. There are three types of cropping patterns, namely: monoculture, crop rotation and poly culture [3]. The cropping pattern is an order of planting on a plot of land in one year, including the period of tillage. The cropping pattern is a part or sub-system of a crop cultivation system, so one or more cropping system systems can be developed from this crop cultivation system. This cropping pattern is applied with the aim of utilizing resources optimally and to avoid the risk of failure. However, the important growing requirements between the two plants or more for the land should be close to similarity [4]. The henna flowers are agricultural products categorized as agribusiness activities that need to be managed effectively. Agribusiness is a unit of business activity which includes one or all the chain of production, processing of products and marketing that has to do with agriculture in the broadest sense [5]. Agribusiness is an activity related to handling agricultural commodities in a broad sense, which includes one or all of the chain of

production, processing and input-output of agricultural production (agro-industry), marketing of agricultural inputs and institutional support activities [6].

In the micro analysis approach, looking at agribusiness as a moving company unit, both in one of the agribusiness subsystems, either only one or more subsystems in one commodity line or more than one commodity line [7]. The agribusiness system is all activities ranging from procurement, distribution of production facilities to marketing of agricultural products and agro-industries related to one another. Agribusiness functions consist of procurement and distribution of production facilities, primary production activities (cultivation), processing (agro-industry), and marketing [8]. Agribusiness Management is an activity in the field of agriculture that implements management by carrying out planning functions, organizing functions, directing functions and controlling and controlling functions by using available resources to produce agricultural products and maximum profit for the organization [9].

Besides that, it is necessary to pay attention to a suitable distribution system that is the management of marketing henna flowers tailored to the targeted target market. So that it can expand the market, which enables it to create stability in the demand for henna flowers, which will later occur in extreme price fluctuations. Distribution is defined as the movement of goods from manufacturing companies to market and finally bought by consumers [10], in terms of distribution is a process of distributing goods produced from production to consumers. If we review from a large Indonesian dictionary, distribution in language means distribution (distribution, delivery) to several people or some places [11]. Distribution is a channel or system that distributes goods produced to consumers [12]. Distribution is one component of the marketing mix, distribution (Place), selecting and managing trade channels that are used to channel products or services and also to serve target markets, as well as developing a distribution system for product delivery and commercialization physically [13].

For farmers in Subak (agricultural organization) of the Singapadu Kaler village, who were used as research subjects, most of them planted sustainable henna flowers, which means that after the harvesting period of the henna flowers ends, they immediately plant henna flowers. This pattern is done on the grounds to fulfill daily needs until waiting for the rice harvest. Likewise, the henna flowers produced are directly sold to the nearest market, namely to the Mambal market to collectors (agents) who buy henna flowers from farmers. No one sells directly to consumers and does not try to sell to other markets that are more crowded, or to markets in tourism areas such as Ubud. Besides that, there are farmers who do not have rice fields that specifically plant henna flowers, by renting other farmers' land, so that they also apply sustainable cropping patterns. This small henna flower farmer is also faced with the phenomenon of extreme price fluctuations. The reason they don't have a job, the important thing is there is income, even though the amount is small.

Based on the phenomenon that occurs in the agricultural sector, especially the fluctuations in the price of highly

fluctuating henna flowers that do not benefit the farmers, the problem formulated in this research is

How is the model of managing henna flowers effectively in supporting tourism development in the subak of Singapadu Kaler village ?

Whereas the objective to be achieved in this research is to design a model of managing henna flowers effectively in supporting tourism development in the soak of Singapadu Kaler village.

## II. RESEARCH METHODS

The approach used in this study is a sampling approach, which is taking several respondents as samples from the existing population. Because the location of the respondent is in several different subaks, but the nature of the respondent is homogeneous, the sampling in this study uses two ways [14], namely sample area and random sample. The method used to collect data needed in this study, in the form of: Observation, Interview, Documentation, and Literature Study. Observation is data collection by observing the environment of the research area and the process of picking henna flowers. The interview is a collection of data by asking questions directly to respondents, namely henna flower farmers about the henna flower planting patterns. Documentation is data collection by taking photos of the area and the henna flower plants and when picking the henna flowers. The analysis technique used to answer the problems raised, there are two analytical techniques, namely: 1) Quantitative analysis techniques, namely techniques for analyzing data in the form of numbers by using non-parametric statistics in the form of addition, subtraction, division and multiplication using analysis tools, which in the form of: BCR Analysis (Benefit Cost Ratio) and Profit Margin Analysis [15], 2) Qualitative analysis techniques are techniques for analyzing qualitative data in the form of: descriptive analysis techniques, comparative analysis techniques, synthesis analysis techniques [16].

## III. RESULTS AND OUTPUT

### A. Overview of Singapadu Kaler Village

Singapadu Kale village consists of 5 hamlets namely: Kediri, Silakarang, Belang, Belang Kaler, and Samu. The total number of family heads as much as 1430 with a population of 5477 people consisting of 2752 men and 2725 women. Overall area of Singapadu Kaler village is 321.20 ha with details: settlements 103.82 ha, wetlands (fields) 152, 75 ha, dry land (fields) 55.83 ha, graves 1.25 ha, schools 2.25 ha, village road 7 km (3.5 ha), and provincial road 3 km (1, 8 ha).

In Singapadu Kaler village, there are 10 subaks, namely: Samu, Abyantiying, Dlod Belang, Belang Kesanga, Dlod Belang Kapat, Wahem kesanga, Wahem kesanga Satu, Sumampam Dalem Kederi, Sumampam Dalem Silakarang, and Banjar Rame. The existence of rice fields in Singapadu Kaler village surrounds the residents' settlements in each hamlet. So, the existence of rice fields can enclose all the hamlets in the village of Singapadu Kaler. Regarding tourism development, rice fields are very potential to be developed into various agribusiness, agro-tourism and ecotourism

products, such as agro tourism parks, trekking tracks, matekap shows, etc.

**B. Utilization of Rice Fields**

Rice fields include wetlands which are agricultural land cultivated by farmers who grow rice and various nutmegs and other agro-crops. The use of paddy fields when this research was conducted from the aspect of agriculture was for rice, kale, chili and henna flowers. Besides that, it is also used for tourism development, such as for ATV car attraction arenas.

Of the 10 subaks that were present at the time of this study, farmers who used their paddy fields for girlfriend flowers were in 6 soak, namely soak: Kalangan Samu as many as 2 farmers, Dlod Belang as many as 9 farmers, Dlod Belang Kesanga as many as 11 farmers, Dlod Belang Kapat as much as 10 farmers, Wahem had 7 farmers, Sumampan Dalem Silakarang as many as 3 farmers. Whereas in soak: Abyantiyng, Wahem kesanga one, Sumampan Dalem Kederi, and Banjar Rame there are no farmers who handle girlfriend flowers. The number of respondents taken from all farmers who planted girlfriend flowers from 6 existing subaks, only 10 farmers took as samples, with details as follows:

TABLE I. DETERMINATION OF A HENNA FLOWER SAMPLE

No	Organization of Farmer	Flower Farmer (person)	
		Population	Sample
1	Kalangan Samu	2	1
2	Delod Belang	9	2
3	Delod Belang Kesanga	11	2
4	Delod Belang Kapat	10	2
5	Wahem Kesanga	7	2
6	Sumampan Dalem Silakarang	3	1

**C. Henna Flower Pattern Model**

Cropping pattern models which are often referred to as cropping pattern systems are a system related to the planting cycle of henna flowers starting from cultivating the soil, planting, fertilizing, starting to harvest, the length of harvesting and the end of the harvest. The farmers who use their fields to cultivate their henna flowers use some of their rice fields and some use them fully. From the samples taken there were only 5 (five) farmers who used their paddy fields to fully plant henna flowers, and there were 5 (five) farmers who were partially for growing henna flowers and the rest for rice cultivation. The land area owned by farmers who grow Henna flowers ranges from 11 to 17 acres. Where is the area of land planted with henna flowers each cycle by the henna flower farmers covering an area of 3.5 - 6 acres The cropping pattern model applied by henna flower farmers in subak of Singapadu Kaler village has two systems, namely: Continue System and the Intermittent System.

1) *Using Continue System:* The continue pattern is a system of planting henna flowers which is carried out continuously different soil, so that harvest can be done every day. In applying this pattern, farmers use the length of the cycle of planting henna flowers starting from processing the soil, planting, fertilizing, starting to harvest, the length of

harvesting and the end of the harvest. The planting cycle for henna flowers and their duration is as follows:

- Cultivate land and sow seeds for three days by (two) people
- Cultivate henna flowers after 15 days by one person
- Weed your henna flower after 20 days for two days together
- Cultivate for one day by one person after a 30-day-old henna flower
- Spray henna flowers with flower medicine after 45 days
- Start harvesting henna flowers after 50 days. The length of harvesting henna flowers for 35 days and picked every day. There are even up to 45 days depending on maintenance, especially related to the frequency of spraying carried out. If spraying with flower medicine is done every 5 days, then the harvest will last up to 45 days. If done every 8 days, then the harvest will last only 35 days.

Based on the cycle of planting henna flowers from processing the soil to the end of the harvest, where the duration takes 88 days and some reach 98 days. By applying a continuous pattern, after the henna flower for part I is 18 days old, then planting part II has begun. Likewise, for planting part III, it has already begun when part I planting is 36 days old, and part II planting is 18 days old. So that harvesting henna flowers can be done every day. The plant conditions for applying cropping patterns with a continuous system are in the figure below:



Fig. 1. Cropping pattern continue system.

Fig. 1 is a cropping pattern with three cycles, in which there is a new crop, there are those who want to harvest and some who end the harvest.

2) *Intermittent System:* This pattern is a planting that uses the soil alternately, where the next planting is done after the planting of the henna flower part I is over. This pattern can use the same land and can use other land after the rice crop is harvested. The cycle of planting henna flower and the duration of this cropping pattern are the same as the cycle of the pattern of planting the henna flower continuously, only



the cropping pattern with this system has a time lag. So that picking henna flower with this pattern cannot be done every day. The plant conditions for applying cropping patterns with the intermittent system are in the figure below.



Fig. 2. Cropping pattern intermittent system.

Figure 2 is the application of an intermittent system, where the henna flowers are harvesting, for the next cycle to wait for the rice harvest and the harvest of the henna flowers to end.

#### D. Henna Flower Distribution System

Distribution is the distribution of products in the form of goods and services from producers to consumers in order to meet the needs of the community. In distributing or selling products in the form of goods and services from producers to consumers, it can be done directly by producers, which can be done indirectly by using intermediaries such as agents and retailers. If producers sell their products directly to consumers, it means using a direct distribution system, when using tangible means the producers use an indirect distribution system.

The distribution system implemented by henna flower farmers in several subaks in Singapadu Kaler Village, all of them applied indirect distribution systems. The henna flower farmers in subak in Singapadu Kaler village all sell to agents in the village of Singapadu Kaler and to agents in the Mambal market. Of the 10 respondents taken where were three respondents who sold their boyfriend's interest to agents or retailers in Singapadu Kaler village. While another 7 respondents sold their henna flower to agents or retailers in the Mambal market.

Regarding the selling price of Henna flowers that are sold to agents both in the Singapadu Kaler village and those in the Mambal market depending on the demand and supply of henna flowers. High and low demand is influenced by the presence or absence of religious ceremonies and major Hindu religious holidays such as Galungan, Kuningan, Pagerwesi and Nyepi day. While the high and low supply depends on the number of farmers who plant henna flowers.

The price of henna flowers sold by farmers to agents both in the village of Singapadu Kaler and in the Mambal market is 50.000 rupee per-ka on religious holidays, 68.000 rupee per-ka on full moon, and 23.000 rupee per-ka on dead moon day.

#### E. Designing Henna Flower Management Model

The management model of henna flowers is related to structuring the pattern of henna flower, so as to provide maximum results, especially adjusted for the demand for henna flowers that occur. Besides that, it is necessary to pay attention to the distribution system which is part of managing the marketing of henna flowers which is adjusted to the target market that is the potential intended. So that it can expand the market which allows to increasing the demand for henna flowers which can increase the selling price of henna flowers. So that effective management can increase the income of henna flower farmers.

In designing effective management of henna flowers, it is necessary to pay attention to the results achieved both through the application of structuring the pattern of planting of henna flowers and to the results achieved by the application of the henna.

1) *Effectiveness of Henna Flower Planting Pattern:* In looking at the effectiveness of the two alternatives applied by the farmers, namely the continuous and intermittent cropping pattern can use income which is the farmers' profit, benefit cost ratio, and the margin level of the sales of henna flower as an analysis tool. The benefits of the farmers, the benefit cost ratio, and the margin level of the sales of the henna flower from the two systems applied are as follows: the average benefit cost ratio and profit margin of the continuous and intermittent systems are 7.37 and 85.90 % with 6.7 and 84.67 % respectively.

From the results shows the cropping pattern with a continuous system is more effective than intermittent systems which can be seen from the profits, BCR, and profit margins achieved by the system continuously greater than the intermittent system. This is because the system is continuously able to enjoy prices that occur on religious holidays which are greater than the price on weekdays. While intermittent systems sometimes cannot enjoy prices on holidays. In addition, the use of land for hatchery crops is greater than the use of land for rice plants applied by flower farmers who use intermittent systems

2) *Effectiveness of the Henna Flower Distribution System:* In analyzing the maximization of the use of a distribution channel system, it is necessary to do a comparative analysis by compare between alternative distribution systems with one another that can be applied or by comparing with new market targets. The basis that can be used to determine the effectiveness of the use of the distributed system is the margin and benefit of the cost ratio of each alternative used. Usually the effectiveness of the use of distribution channels is largely determined by the high and low prices of the henna flowers sold. The higher selling price, the more effective the using of the distribution system.

From the results of the analysis show the level of effectiveness of the use of the system or distribution channel on various market targets whose results are calculated as the table below:

TABLE II. CALCULATION EFFECTIVENESS OF DISTRIBUTION SYSTEM

No.	Market Target	Continue System		Intermittent System	
		BCR	PM (%)	BCR	PM (%)
1	Agent	7.37	85.90	6.70	84.67
2	The Mambal market	9.04	88.78	8.28	87.80
3	Hotel	13.14	92.24	12.58	91.97
4	Outside Mambal	9.82	89.66	8.81	88.53

From the table above shows that the most effective distribution system is a direct distribution system targeting the hotel market for henna flowers sold by farmers. Because the BCR and Profit Margin are the highest among the other alternatives, both for farmers who apply a continuous cropping pattern and an intermittent cropping system. The BCR and Profit Margin are much higher compared to other direct systems especially with the indirect system selling to agents whose BCR and Margin values are the lowest.

3) *Design of Henna Flower Management Model Effectively*: To achieve maximum results with good quality and be able to meet hotel needs that are continuous in nature, and can support the development of tourism in the Singapadu Kaler village, it is necessary to design a model of managing henna flowers effectively. In order for the planting pattern to be carried out and the marketing system implemented to be effective, it is necessary to establish a cooperative-based Henna flower farming community that can benefit all henna flower farmers as members of the cooperative. With the effective management of henna flowers, it is hoped that it can support the development of Singapadu Kaler village tourism village whose tourism icon is the attraction of ATV cars. Where this car lane passes through the rice field area and uses paddy fields as an arena to deal with this ATV car.

The essence of managing an institution is very much determined by the organizational structure that will be applied as part of planning. Besides that, there needs to be intensive coordination and inherent supervision. To encompass all activities carried out in the management of henna flowers related to structuring cropping patterns and distribution systems for henna flowers, the effective organizational structure to be implemented can be described as follows:

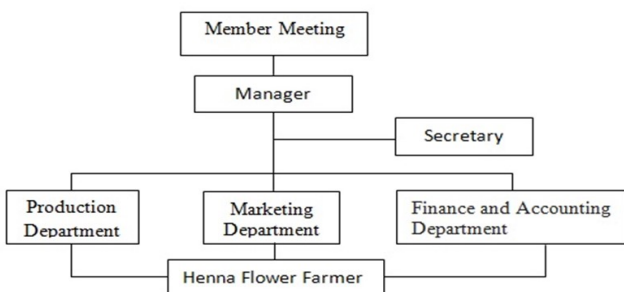


Fig. 3. Organization structure of a henna flower farmer cooperative.

With the existence of a cooperative of henna flower farmers with an effective organizational structure, it will make it easier to conduct guidance on the system of planting

and maintaining henna flowers which can produce higher-quality henna flowers through the production section. Likewise, it will be able to help expand market targets that allow henna flower to sell more at higher prices through the marketing department. So that it can increase the income of henna flower farmers, besides being able to meet the expectations of the hotel.

In maintaining the sustainability of this henna flower farmer cooperative and can support the development of tourism in the Singapadu Kaler village, it is necessary to do a number of things which include:

- 1) Working closely with the Gianyar Regency agriculture and plantation service to request assistance for facilities and guidance on an effective system of henna flower cultivation, so that the quality of henna flowers is better and the duration of the harvest period is longer.
- 2) Collaborating with ATV car business managers, scooter riding and riding horses that use rice field routes to arrange the environment and arrangement of henna flower locations that can provide clean and beautiful scenery for tourists who ride ATV cars, scooter riding and riding horses

#### IV. CONCLUSION

Based on the results of the discussion above, conclusions can be drawn which are short answers to the problems be happened, which include:

The cropping pattern applied by farmers is a planting pattern with a continuous system and an intermittent system. The distribution system applied by henna flower farmers is an indirect distribution system by selling to agents, not selling directly to consumers. The planting pattern of continuous system is more effective than an intermittent system, From the 4 distribution systems analyzed, the direct distribution system with the target market of the hotel is most effective with the highest BCR and Margin value. Need to shape the friendship of henna flower farmers by doing a number of things which include: Working closely with the Gianyar Regency agriculture and plantation service to request assistance for facilities and guidance. Collaborating with ATV car business managers, scooter riding and riding horses that use rice field routes to arrange the environment and arrangement of henna flower locations.

#### ACKNOWLEDGMENT

Gratitude and acknowledgement are expressed to the Centre for Research and Community Service of Bali State Polytechnic for funding this research. Gratitude also goes to the researcher team that support this research. Without their support, the research would not have been possible. The researcher also would like to gratefully thank the leaders (Director and Vice Directors) of Bali State Polytechnic, as well as the farmers, agents, and retailer of the henna flower in the Subak of Singapadu Kaler village who helped and provided the data for this study.

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