

The Development of Gumi Banten Park in Jelekungkang Traditional Village - Bali, Through the Breeding of Rare Plants

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ABSTRACT: This research aims to develop Gumi Banten Park in Jelekungkang Traditional Village, Bali, as an integrative model that combines biodiversity conservation, rare plant breeding, community empowerment, and educational tourism. The focus of the research is to answer three main problem formulations: (1) the development of Taman Gumi Banten as a center for the conservation and breeding of rare ceremonial plants, (2) the improvement of community knowledge and skills in the cultivation of ceremonial plants, and (3) the creation of sustainable educational tourist destinations. Through a participatory qualitative approach involving in-depth interviews, observations, and FGDs with various stakeholders, this study designed a park development masterplan. The results of the research resulted in a management model that includes zoning for the collection and breeding of rare plants (such as Cempaka and Lotus), a cultivation training curriculum for the community, and the design of educational tour packages. The conclusion of the study confirms that Gumi Banten Park has been successfully developed as a center for *ex-situ* conservation and breeding of rare plants, which at the same time increases community capacity and creates unique tourist destinations, thus answering all the problems raised.

KEYWORDS: Gumi Banten Park, Plant Breeding, Rare Ceremonial Plants, Educational Tourism, Traditional Villages

I. INTRODUCTION

The contextuality of the implementation of Yadnya in Balinese Hindu society cannot be separated from the use of ceremonial plants, which form a complex system of ethnobotanical knowledge. Ethnobotany, as a science that studies the dynamic relationship between humans and plants in their environment (Walujo, E. B., 2011), in the context of Bali has documented the richness of species and local knowledge regarding the use of flora for rituals (Ristanto, R. H., et al. 2020). However, contemporary realities present a serious threat to the sustainability of this system. Massive socio-economic transformation, including land conversion and market economy penetration, has shifted the paradigm of meeting the needs of the people from a subsistence model (picking from the yard/nature) to a commercial model (buying from the market). A study by Budiman, L., & Suhendi, D. (2024) confirms that this reliance on commercial supply chains not only causes vulnerability to availability and prices, but also erodes traditional knowledge and threatens local biodiversity, creating an empirical gap that is urgent to be addressed.

In the face of this socio-ecological disruption, conventional conservation approaches are often less effective if they are not integrated with the dimensions of values and spirituality that underlie these consumption practices. This is where the concept of religious moderation offers a solutional perspective. Religious moderation, which is defined as a way of religion that is substantive, adaptive, and balanced (Sirajuddin, S., 2020), in the context of ceremonies can be interpreted as an emphasis on the essence and sincerity of Yadnya, rather than on the quantity or luxury of the offerings. The values of essentialism, simplicity, and independence contained in it are in line with the philosophy of *Tri Hita Karana*, especially in maintaining harmony with nature (*palemahan*). The integration between the revitalization of ethnobotanical knowledge and the internalization of the value of religious moderation is hypothesized to form a strong value framework to encourage more sustainable conservation behavior (Harahap, H. S. M., et al. 2022).

This research theoretically seeks to bridge the gap by uniting the applicable ethnobotanical approach (Endraswara, S., 2024) with the principle of religious moderation in an integrative framework. Theoretical gaps arise because descriptive ethnobotanical studies often stop at documentation, without diving into how the dimension of spirituality can be mobilized as an agency force for behavior change (Angela, L., et al., 2020). Meanwhile, the concept of religious moderation is still rarely translated into

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operational frameworks in the realm of biodiversity conservation. By positioning spirituality as a core variable in the socio-ecological system (Berkes, 2018), this study aims to develop a model that is not only descriptive but also applicable and transformative.

Therefore, the methodological approach chosen is qualitative participatory. This approach is relevant because it is able to explore in depth the understanding, experience, and values that live in the community (Mikkelsen, B., 2011). Through in-depth interviews, participant observations, and FGDs with key stakeholders such as *sulinggih*, *tukang banten*, and the younger generation in Jelekungkang Traditional Village, this research seeks to understand holistically the real challenges faced, while actively involving them in designing solutions. Focusing on the specific context of an indigenous village allows for a rich deepening of cultural nuances, which cannot be answered by a generalistic quantitative approach.

Based on the above frame of thought, this research is directed to implement a concrete solution through the development of Taman Gumi Banten in Jelekungkang Traditional Village. The park is designed as an operational embodiment of ethnobotanical synergy and religious moderation, which serves not only as a collection garden but as a center for active conservation, education, and empowerment. Thus, the formulation of the problem in this study is: (1) How to develop Taman Gumi Banten as a center for the conservation and breeding of rare plants?; (2) How to increase the knowledge and skills of the community in the cultivation of ceremonial plants, especially rare plants?; and (3) How to create educational tourism destinations that support cultural and environmental preservation?

II. METHODOLOGY

This research uses a participatory qualitative approach that not only aims to understand the phenomenon in depth but also actively involve the community as a partner in the change process. This approach was chosen because it is in line with the *Tri Hita Karana principle* which emphasizes harmony and collaboration, and in accordance with the characteristics of research aimed at developing an applicative model based on local values. Through this approach, the researcher's position is not as an external expert, but as a facilitator who assists the community in identifying problems, formulating solutions, and implementing the development program of Taman Gumi Banten.

The types and sources of data collected are multi-dimensional to ensure the integrity of the analysis. Primary data consisted of: (1) Qualitative data obtained from in-depth interviews with key stakeholders (*bendesa adat*, *sulinggih*, *tukang banten*, *kelian subak*, and the younger generation) to explore ethnobotanical knowledge, perceptions of religious moderation, and challenges in the cultivation of ceremonial plants; (2) Observational data from participants' observations in the yard of the house (*teba*), the location of Taman Gumi Banten, and ritual processions to understand the real practice of plant utilization; and (3) Collaborative data from Focus Group Discussions (FGD) which are specifically designed to develop the concept of educational tourism. Secondary data sources include *awig-awig* (customary rule) documents, ritual records, and relevant previous studies.

The data collection mechanism to organize educational tourism in a participatory manner is carried out through a series of Joint Design Workshops. The workshop is designed in two stages. *First*, the Potential Exploration FGD which gathers builders, youth, and tourism actors to map the most visually and philosophically interesting types of ceremonial plants, as well as formulate a cultural narrative to be conveyed. *Second*, Simulation and Preparation of Tourist Routes where participants directly test routes in the Taman Gumi Banten area, design interaction scenarios with visitors, and prepare workshop materials for the preparation of *simple banten*. *The entire process is documented through field notes, audio recordings (with permission), and photos.*

The data analysis process follows an interactive thematic analysis model (Rahmawati, S., 2023) which is iterative. Interview transcript data, FGDs, and workshop notes were coded to identify themes such as "conservation priority plant species", "the value of moderation in *banten practices*", and "expected forms of tourism experiences". This thematic is then analyzed for its relationship to form a conceptual framework for the development of parks and educational tourism. The validity of the data is maintained through triangulation of sources (comparing the perspectives of *sulinggih*, *tukang banten*, and the younger generation) and member check, where the results of analysis and draft of the tour design are returned to FGD participants for verification and refinement.

The process of preparing the final product in the form of the Banten Gumi Park Masterplan and the Educational Tour Package "Jejak Gumi Banten" is a crystallization of all previous stages. This product was compiled collaboratively between researchers and the community, which contains: (1) a park zoning blueprint (conservation, nurseries, education); (2) Curriculum and training modules for the cultivation and breeding of rare plants for the community; and (3) Educational tourism Operational Guidebook which contains routes, guide narratives, and workshop implementation procedures. Thus, this methodology ensures that the final product is not an academic imposition, but an action plan that is legitimate, contextual, and has a high sense of ownership from the people of Jelekungkang Traditional Village, so that the opportunity for sustainability becomes much greater.

III. RESULTS AND DISCUSSION

The development of Taman Gumi Banten as a center for the conservation and breeding of rare plants has been successfully realized through a data-based approach and community empowerment. Preliminary data collected through in-depth interviews and field observations revealed a worrying condition in which various types of major ceremonial crops, including the White Cempaka Flower and Sandat Leaf, have been classified as rare with a very high level of community dependence on the market. Further analysis shows that the root of the problem lies not only in the limited land and technical knowledge, but also in the interruption of intergenerational transmission of knowledge about traditional breeding techniques. These findings then form the basis for formulating an integrative conservation strategy, by drafting a zoning-based masterplan that divides the park area into three functional zones – core conservation, nurseries, and education – each of which is designed to address the specific challenges identified in the study.

The implementation process is carried out through three interrelated empowerment phases, starting with the revitalization of ethnobotanical knowledge through systematic documentation of traditional propagation techniques from senior banten builders. This phase not only succeeded in bringing together various almost extinct vegetative breeding techniques, but also revived local practices through participatory workshops involving participants from different generations. The second phase is focused on developing conservation infrastructure by building adequate nurseries equipped with drip irrigation systems and special beds for highland plants. Most importantly, the third phase creates a participatory monitoring system where the community is actively involved in monitoring plant growth through a recording mechanism that can be accessed openly.

The results of the entire process are manifested in several key achievements that comprehensively answer the formulation of the first problem. From the institutional aspect, a solid farmer group was formed with a clear organizational structure and a sustainable seed revenue sharing system. From the production aspect, a breeding system was created that was able to produce a significant number of seedlings with a satisfactory propagation success rate, as well as being able to meet some of the needs of village cempaka flowers that were previously completely dependent on external supply. This achievement is not only ecologically significant, but also contains a deep spiritual dimension through the integration of the values of religious moderation.

The transformation of spiritual values in conservation practices is the most significant aspect in the development of Taman Gumi Banten. Through the approach of religious moderation, the community develops an understanding that the conservation of rare plants is not just an ecological activity, but an integral part of the implementation of a substantive *yadnya*. The practice of breeding and self-cultivation is understood as a tangible manifestation of spiritual independence that is in line with the essence of *tri hita karana*, especially in maintaining harmony with nature. This understanding is the main driver of behavioral change from passive dependence to active independence in fulfilling ritual needs.

Overall, Taman Gumi Banten has been transformed into more than just a collection garden - it has become a living conservation center that integrates ecological, cultural, and spiritual aspects. This success is reflected in various positive indicators in the form of reducing market dependence for several types of ceremonial crops, increasing the knowledge of the younger generation about breeding techniques, and the establishment of a sustainable village seed reserve system. Thus, the formulation of the first problem has been comprehensively answered through a conservation model that not only saves germplasm, but also restores traditional knowledge and strengthens the spiritual dimension in environmental conservation.

The participatory training developed in this study is designed as a transformative process that integrates ethnobotanical approaches with the values of religious moderation. The training program not only presents technical material on plant cultivation, but also emphasizes on revitalizing local wisdom through the "learning by doing" method. Each training session is designed to build a collective awareness that self-reliance in the provision of ceremonial crops is an integral part of substantive religious practice. Through this approach, participants are not only receiving technical information, but are invited to reflect on the spiritual meaning of each plant cultivation process – from seeding, care, to harvesting for ritual purposes.

The active involvement of the builders and the younger generation in the training creates unique and effective learning dynamics. Senior Banten builders act as a source of traditional knowledge who teach ancestral heritage cultivation techniques, while the younger generation brings the spirit of innovation and adaptation to contemporary conditions. This intergenerational collaboration is manifested in practical workshops where young participants learn pressing and grafting techniques directly from traditional experts, while jointly developing new methods that are more suited to urban land limitations. This dialogical process not only ensures the transfer of traditional knowledge, but also creates space for the birth of new innovations in the cultivation of ceremonial plants.

The level of public understanding has increased significantly, which can be seen from the paradigm shift in looking at ceremonial plants. Before the training, most participants tended to view *upakara* plants as a commodity to be purchased, but after following the learning process, they developed into conservationists who understood the life cycle and how plants reproduced. This understanding is not only technical, but has permeated at the level of values, where participants increasingly appreciate the

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philosophical meaning behind each type of ceremonial plant and understand the essence of religious moderation in the context of the independence of providing ritual facilities.

Overall, this participatory training succeeded in creating a strong foundation for strengthening community understanding and independence in managing ceremonial crops. The transformation that occurs is not only in increasing the technical capacity of cultivation, but more importantly in changing the mindset from passive consumers to active producers who have ecological-spiritual awareness. The independence built through this process reflects the practice of substantive religious moderation, where people are no longer trapped in ritual consumerism, but are able to organize their *yadnya* with means that are prepared independently, meaningfully, and sustainably.

The development of educational tourism in Taman Gumi Banten is designed as a multi-stakeholder strategy that not only creates new tourist destinations, but at the same time becomes a means of supporting economic independence and cultural preservation. The form of educational tourism developed consists of three main packages, namely "Jejak Gumi Banten" which is an interpretive tour with a local guide to get to know the philosophy and function of ceremonial plants, "Workshop Banten Dasar" which invites participants to prepare simple offerings using materials directly from the park, and "Rare Plant Adoption Program" which allows tourists to participate in conservation activities. Each tour package is designed to create an authentic immersive experience, where tourists are not only passive spectators but directly involved in the process of conservation and cultural learning. Through this approach, Taman Gumi Banten has succeeded in transforming conservation values and local wisdom into tourism products that have a unique attraction as well as educational meaning.

The process of preparing educational tourism modules is developed through a participatory approach involving various stakeholders. The builders of Banten contribute to compiling the philosophical narrative and symbolic meaning of each element of Banten, the younger generation develops techniques for delivering material that appeals to contemporary tourists, while park managers develop a flow of visits that combine conservation aspects with cultural experiences. This module not only contains technical information, but also emphasizes the delivery of the values of religious moderation, particularly in understanding the essence rather than quantity in offerings. The development of the module went through a series of trials and refinements, ensuring that the content delivered remains culturally authentic yet easy to understand by visitors from different backgrounds.

The impact of the development of educational tourism can be seen in two main aspects, namely increasing economic independence and strengthening conservation awareness. From an economic aspect, income from entrance tickets, workshops, and plant adoption programs creates a sustainable source of funds for park maintenance and the welfare of managers. This economic cycle allows Taman Gumi Banten to reduce dependence on external funding and become more independent in its operations. In parallel, interaction with tourists has strengthened people's pride in their cultural heritage, as well as becoming a medium for disseminating conservation values and religious moderation to a wider audience. Thus, educational tourism is not only a source of income, but also an effective strategy to communicate the importance of preserving ceremonial plants as part of the sustainability of Balinese culture and environment.

IV. CONCLUSION

Based on the entire research and implementation process that has been carried out, it can be concluded that the development of Taman Gumi Banten in Jelekungkang Traditional Village has succeeded in comprehensively answering all three problem formulations through an integrative approach that combines ecological conservation, revitalization of local wisdom, and creative economy innovation. Regarding the formulation of the first problem, Taman Gumi Banten has proven to develop into an effective center for the conservation and breeding of rare plants, not only through the development of physical infrastructure in the form of collection zoning and nurseries, but more importantly through the formation of a sustainable knowledge system. This success is reflected in the revitalization of traditional breeding techniques that are on the verge of extinction, the formation of a mechanism for distributing seeds between families, and increasing collective awareness of the importance of preserving germplasm of *upakara* plants as an ancestral heritage. This transformation is inseparable from an ethnobotanical approach that is able to reconnect society with traditional knowledge of the life cycle and plant propagation techniques, while strengthening the spiritual dimension through the internalization of the values of religious moderation that emphasizes independence and essentialism in ritual practices.

In the formulation of the second problem, the improvement of community knowledge and skills in the cultivation of *upakara* crops, especially rare plants, has shown significant results beyond just technical achievements. The participatory training process developed succeeded in creating a space for intergenerational dialogue where senior and younger generation builders complement each other in transforming traditional knowledge into contextual conservation practices. The most fundamental of this process is the paradigm shift in the view of ceremonial plants—from mere commodities to be purchased to spiritual entities that need to be preserved through active involvement in cultivation and breeding. This increase in community capacity is not only seen from the

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mastery of seedling techniques and plant care, but especially from the emergence of a new awareness that independence in the provision of ceremonial facilities is an integral part of substantive and dignified religious practices.

Meanwhile, the answer to the formulation of the third problem is realized through the creation of educational tourism destinations that successfully transform conservation values into authentic and meaningful cultural experiences. The "Jejak Gumi Banten" tour package and the Banten preparation workshop are not only a source of additional income for the community, but more importantly serve as a medium for disseminating cultural and environmental preservation values to a wider audience. The double impact that has been generated—both from the economic aspect through the financial independence of park managers, and from the socio-cultural aspect through strengthening the identity and pride of the community—shows that this educational tourism model has become an effective instrument in creating a mutually reinforcing sustainability cycle between conservation, empowerment, and cultural preservation.

Overall, the three answers to the formulation of the problem boil down to one main conclusion that the development of Taman Gumi Banten through the breeding of rare plants in the Jelegungkang Traditional Village has succeeded in creating an organic and sustainable life conservation model. The success of this model does not lie in the development of physical infrastructure alone, but in the ability to cultivate an ecosystem of knowledge that revives local wisdom, blends it with contemporary spirituality values, and transforms it into conservation practices that have social, economic, and cultural relevance. Taman Gumi Banten has proven that biodiversity conservation should not be separated from cultural conservation, and that the breeding of rare plants is essentially the breeding of human values itself. Through an approach that combines ethnobotanical analytical acumen, the depth of spirituality of religious moderation, and the power of community participation, Taman Gumi Banten is not only a center for the conservation of rare plants, but has been transformed into a living learning space about the harmony between humans, nature, and spirituality that continues to evolve and be sustainable for future generations.

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