

Sustainable tourism in Boti Dalam Village, Timor, Indonesia

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Abstract: Sustainable tourism development issues in Boti Dalam villages in Timor Island Indonesia has been identified crucial for future local community existence and its cultural and natural resources. The aim of the research is to identify five aspect related to the sustainable tourism construction Boti Dalam, namely economic, environment, socio-cultural, accessibility, infrastructure and utility, and institution. Result of the study shows that the index of economic dimension was less sustainable (41.12), environment was moderate (53.45), socio-cultural was moderate (50.53), Accessibility, infrastructure, utility was not sustainable (21.28) and institution dimension was less sustainable (31.82). There are some important leverage aspects for sustainable tourism in Boti Dalam. The most important leverage in each dimension were tourism zoning area (in environmental aspect), opportunities for job (economic aspect), community training in tourism sector (socio-economic), transportation (accessibility, infrastructure and utility aspect) and indigenous institution (institution aspect). In order to increase the sustainable tourism practices in Boti Dalam, multi-stakeholder and government intervention to numerous program improvement was needed. The participation of local community in Boti Dalam also contributes to the future sustainability of tourism.

Keywords : sustainable tourism, community-based tourism, nature conservation culture preservation, sustainable community

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I. Introduction

Tourism is important economic machine for many countries. Tourism has been promoted and developed in many countries increase economic earning and provide numerous jobs opportunities. The development of tourism also relevant with global issues related to economic growth and development, human prosperity and environmental conservation. Recent tourism development argues that sustainable tourism is the instrument to meet the agenda of Sustainable Development Goals (SDGs) 2016-2030. Sustainable tourism widely explored in many countries and recommended to be implemented as one of the sustainable industry. It is especially relevant in tropical developing countries, in which high technology still limited but natural resources for tourism industry abundance [1] [2] [3].

There are challenges for sustainable tourism development in tropical developing countries. It is especially important because tropical developing countries has rich bio-cultural diversity but many countries often face limiting science and technology. In many case, natural and cultural destruction occurs due to lack of management approach. The natural resources widely explored to meet national economic growth. The sustainable used of cultural and natural resources through creative industry such as tourism has been identified limited. With the abundance of natural and cultural resources, many tropical developing countries basically has new potential economic machine. In such a case, tourism sectors has been considered as one of the potential sector for national and local development [1] [4] [5] [6] [7] [8].

Boti Dalam village is one of the traditional village in Indonesia, in which the daily life of local community in the villages was guided by traditional belief called *Halaika*. The *Halaika* is the traditional belief rooted from indigenous local people in Timor Island. As many traditional belief in the world, *Halaika* teach the balance of human and nature relationship. In *Halaika* perspectives, people principally should respect to all of the living creature in the earth. The sustainable uses of natural resources often found in many indigenous community, represent the implementation of traditional teach and spirit to appreciate nature [9] [10].

Tourism, when properly managed, has potentiality to support traditional belief. Tourism recently become crucial economic development instrument in many developing countries, including Indonesia. The development of tourism in Indonesia is relevant with the countries' natural resources richness [8]. Located in the equatorial regions, Indonesia has tropical climates with its huge tropical forest spread from west in Sumatra Island to the east in Papua Island. The development of sustainable tourism, therefore, able to enhance the existence of many traditional community with its indigenous culture and natural resources. It is become crucial

keys for sustainability of traditional community. The aims of the research is to evaluate the sustainability potential of tourism development in Boti Dalam Village in Timor Island.

II. Methods

Study area

Administratively, Boti Villages located at Timor Tengah Selatan (TTS) regency. It is located at Timor Island. Recent Boti villages was divided into two area, Boti Luar (outher Boti) and Boti Dalam (inner Boti). The Boti community belong to Dawam, the local tribal community with its traditional belief system. In Boti Dalam, the local community still implement the traditional belief called *Halaika* under community leader called *Usif*. Among Boti Dalam community, *Usif* believed as a representative of God in the earth. The community of Boti Luar has been influenced by Christianity and modernization aspect is some aspect of local daily life; while Boti Dalam still live under traditional system guided by *Halaika* principles.

The general climates of Boti villages was semi-arid, with number of dry month dominant compared to the rainy season. In many area, drought occurs and become limitation aspect for agricultural productivity. In many area, however, green area found as an impact of local climates, vegetation and local wisdom of the community. Boti Dalam rich in term of cultural uniqueness and preserve their cultural resources which are able to attract tourist to visit Boti Dalam. Tourism grows significantly in Boti Dalam and the local government argues that Boti Dalam should be driven as competitiveness and sustainable tourism destination [11] [12].

Methods

The evaluation of sustainability status of environmental, economic, social, accessibility, infrastructure and utility and institution were assessed using Multidimensional scaling (MDS) with *Rap-EcoBoti* as leverages factors analyses. There are 12 environmental dimension were evaluated, including (1) natural beauty; (2) flora diversity; (3) fauna diversity; (4) tourism area zoning; (5) man-made tourism attraction (6) water spring; (7) climates; (8) rainfall; (9) air humidity; (10) conservation area; (11) air pollution; and (12) waste management. About 8 attributes of economic was evaluated, including (1) increase of community revenue; (2) economic contribution to local government, (3) jobs opportunities; (4) business diversification; (5) local product and commodity development; (6) development of tourism services; (7) tourism retribution; and (8) increase of tourist ability to buy tourism product. The socio-cultural dimension which area evaluated includes 12 dimension: (1) community education level; (2) jobless level; (3) cultural tourism attraction; (4) historical sites; (5) protection of cultural heritage; (6) education content; (7) community training in tourism sector; (8) application of science and technology; (9) cultural conservation; (10) community participation; (11) social conflict; and (12) safety.

There are 10 accessibility, infrastructure and utility dimension which are evaluated. It is including (1) tourism general infrastructure; (2) transportation access; (3) information access; (4) communication access; (5) Accommodation; (6) fresh water; (7) Electricity; (8) Health facility; (9) tourism promotion; and (10) tourism marketing. In the aspect related to institution, 10 dimension was evaluated, including (1) government regulation; (2) indigenous law (Hukum adat); (3) role of government institution; (4) role of indigenous institution (lembaga adat); (5) role of stakeholder; (6) role of research and development; (7) NGOs; (8) management coordination; (9) mechanism for effective coordination; and (10) development of management model. The questionnaire were distributed to x respondents. In each aspect, there are available answer value related to the specific question, ranging from 0 (bad) to 2 (good). Data was analyzed using *Rap-EcoBoti* (Rapid Appraisal Sustainability Index for Ecotourism Boti) as an analysis for multidimensional scaling (MDS) with the modification from Rapfish (Rapid Appraisal for Fisheries. The leverage value of each dimension was based on standard error data between score with attributes and score without attributes. These can be found through the *Rap-EcoBoti* analysis with maximum *root means square* (RMS) [13].

III. Result And Discussion

The status of sustainability

The MDS analysis using *Rap-EcoBoti* in environmental aspect (Table 1) shows the moderate levels of sustainability (53.45). In environmental aspect, the highest leverages aspect to Boti Dalam Villages tourism sustainability includes tourism zoning area (9.13); fresh water spring (7.14); climates (7.10); air humidity (6.07); animal diversity (5.80); and rainfall (5.68). The sustainability level of economic dimension was 41.12, in less sustainability level. The important leverages in economic dimension includes job opportunities (5.75), development of tourism services (3.82) and business diversification (2.32). The social-cultural aspect has sustainability index value 50.53 or moderate level. The important leverages aspect towards sustainability includes community training in tourism sector (7.06), application of science and technology (6.86), protection of cultural heritage (6.67), historical sites (5.87), cultural conservation (5.15), education content (4.52) and cultural tourism attraction (4.51). The MDS analysis using *Rap-EcoBoti* in the dimensions of accessibility,

infrastructure and utility was 21.28. This value shows that such aspect was not sustainable. The important leverages to enhance the sustainability includes transportation (1.24); tourism general infrastructure (1.20); health facility (1.08); accommodation (0.81); and fresh water (0.80). In the aspect of institution, the sustainability index was 31.82, or less sustainable. The leverages factors for sustainability was includes role of indigenous institution (8.04); indigenous law (Hukum adat) (5.58); NGO (4.58); role of stakeholder (4.48); and government regulation (4.24). Overall, the status of dimensions sustainability was given in Table 1.

Table 1. The status of sustainability of related dimension aspect towards sustainable tourism in Boti Dalam Village

Sustainability dimension aspect	Sustainability		R ²	Parameter	
	Index value	Status		Stress	Decision
Environment	53.45	moderate	94.78%	13.14% (< 25%)	Goodness of Fit
Economic	41.12	Less	95%	14.07% (<25%)	Goodness of Fit
Socio-cultural	50.53	Moderate	94.83%	13.19% (<25%)	Goodness of Fit
Accessibility, infrastructure, utility	21.28	Not sustainable	95.43%	13.64% (<25%)	Goodness of Fit
Institution	31.82	Less	95.3%	13.14% (<25%)	Goodness of Fit

The economical aspect of sustainable tourism in Boti Dalam related to the issues of job opportunities (Fig.1). Jobs has been considered as a crucial issues in many development project, including tourism [14]. Many community wish that tourism will provides jobs, and many government promoted tourism development basically with consideration to provides jobs and triggering local economic development. The development of tourism in Boti should be able to provides job. In such a case however, development of tourism service and diversification of business related to tourism is important [15].

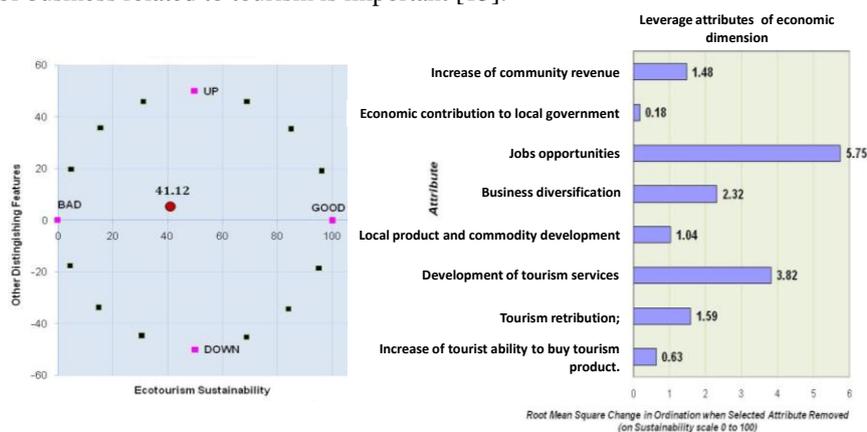


Fig. 1. Sustainability status of economic aspect in Boti Dalam tourism development

In dimension of environmental (Fig.2) the proposal for zoning is important to accommodate the grows of tourism without potential impact to nature, culture and social aspect of Boti Dalam community. The importance of zoning as leverages aspect in sustainable tourism practices in Boti Dalam was shown by the highest value (9.13), compared to the other evaluated leverages dimension. This finding relevant with the recommendation of tourism planner [16] [17]. Another important crucial issues towards the sustainability of tourism in Boti Dalam area is water conservation. Water is fundamental resources for living, and water was used for numerous purposes to enhance the sustainability living of local people in Boti dalam. Therefore, it is important to consider that water is not merely management for tourism [18] [19] [20].

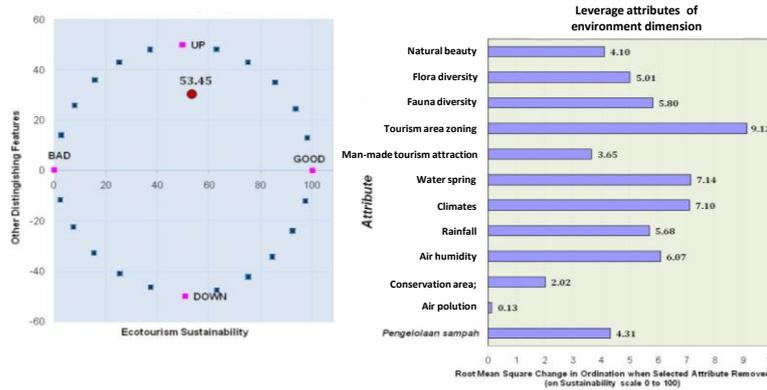


Fig. 2. Sustainability status of environmental aspect in Boti tourism development

The important leverages aspect of tourism sustainability in Boti Dalam is training and education (7.06), followed by science and technology application (6.86). There is also important leverages factor regarding protection of cultural heritage (6.67) (Fig.3). This data indicates that human resources is important and become the significant leverages factor towards sustainable tourism development in Boti Dalam. In many countries, scholar point out that improving human resources was important aspect towards sustainable tourism industry [2] [7].

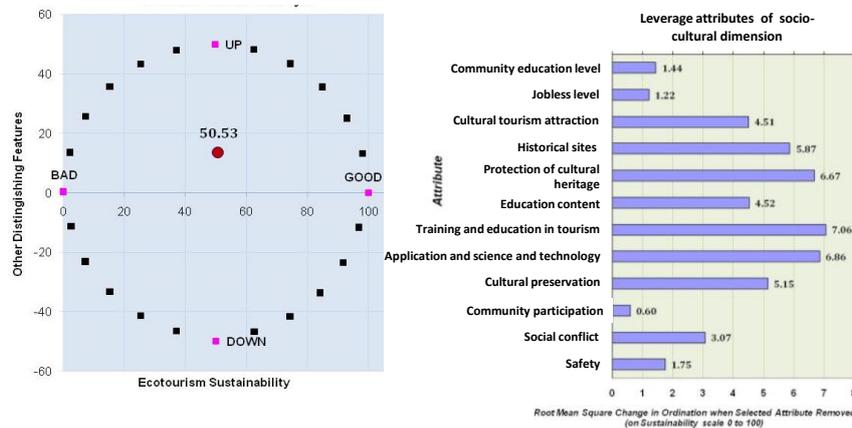


Fig. 3. Sustainability status of socio-cultural aspect in Boti Dalam tourism development

In the perspectives of accessibility, infrastructure and utility aspects. The important leverages factors towards sustainable tourism destination includes transportation access (1.24), tourism general infrastructure (1.20), and health facility (1.08) (Fig.4). Scholar point out that transportation is basic aspect in tourism destination because transportation allow tourist visit particular attraction in destination systems. Without proper transportation system, the sustainability of destination in problems. In case of Boti Dalam, effort to be paid in transportation system [21].

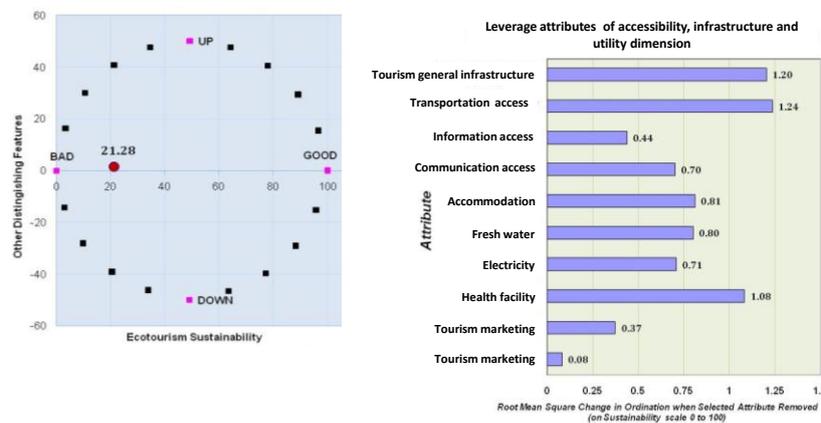


Fig. 4. Sustainability status of accessibility, infrastructure and utility aspects in Boti tourism development

The institution plays an important role in tourism destination development. This study found basic leverages aspect which are important in sustainable issues in tourism in Boti Dalam. Among the important leverages aspect in sustainable tourism, the role of indigenous institution is important (8.05). (Fig. 5). In Boti Dalam, the role of local institution still considered as crucial component to maintain harmonious live among local culture in Boti. Local institution – *Lembaga Adat*- provides basic role and code of conduct among local community to interact with community member and it surrounding biophysical environment [22] [23].

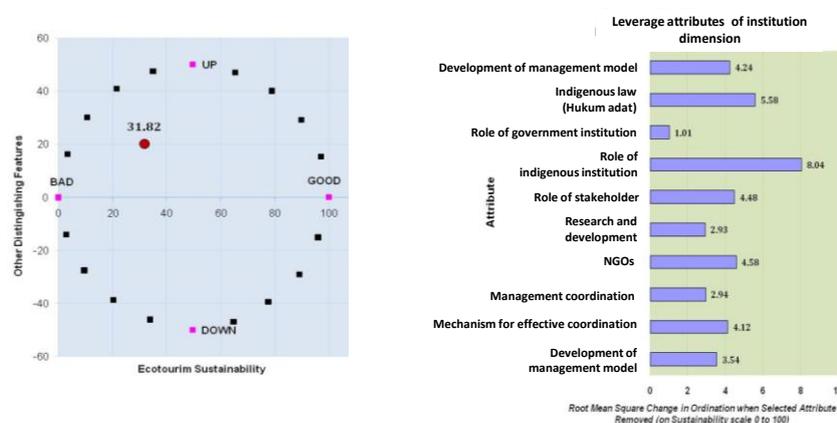


Fig. 5. Sustainability status of institution aspect in Boti tourism development

Action for sustainability improvement

Sustainability is the crucial issues in the recent ecotourism development in developing countries, including in Boti Dalam. Since the sustainable resources consumption perspectives recently becomes the key for tourism destination competitiveness, the planner and local government The field findings shows that there are crucial policy and action to be implemented to enhance the sustainability of tourism in Boti Dalam. The limitation sustainability aspect principally related to the budget availability for numerous purposes in order to increase human resources and tourism facility. In such a case, involving and strengthening local community and generate stakeholder support is important [24]. In the situation where government budget for development limited, another potential sources to support tourism in many remotes area were needed. The interaction between government, private sector and local community in tourism development in developing countries are very complex. In case of Boti Dalam tourism development, a further collaboration are therefore important. The collaboration was not limited to the planning, but it is also important to build collaboration in monitoring and evaluation. It is also important to foster further collaboration in marketing destination [25] [26]. It s especially important because local government and community in Boti Dalam facing serious problem in human resources, especially in term of managing natural and cultural resources for sustainable tourism issues.

IV. Conclusion

The development of sustainable tourism in Boti related to the dimension of economic, environment, socio-cultural, accessibility-infrastructure and utility, and institution. In Boti Dalam, each dimension has specific leverages aspect towards sustainable tourism destination. A number of tourism development approach can be applied to Boti Dalam community to increase its sustainability. These includes community development and stakeholder participation in tourism development.

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