

Factors and Strategy for Sustainable Tourism in Boti Village, East Nusa Tenggara

Simon Suddin

Department of Architecture, Faculty of Science and Technology, Nusa Cendana University, Kupang, Indonesia

Abstract

The potentiality and limitation of tourism development in Boti Village of Timor Island lead to the needs of a comprehensive strategy to enhance the sustainability of tourism. The aims of the research are to describes the variable influence the sustainability of tourism and drawn the design for sustainable tourism in Boti Village. This research identifies 13 variables as crucial factors to determine the sustainable tourism in Boti Village. It is including strengthening local law in Boti, implementation of tourism regulation, formalizing regulation related to tourism zonation, strengthening conservation program, infrastructure development, accessibility improvement, fundraising and generating public support for funding, strengthening community development program and implementation, promoting research for tourism development, strengthening role of local institution (or locally called *Lembaga Adat/Masyarakat*), strengthening role of government in tourism infrastructure and accessibility development, strengthening the role of private sector, and developing and improving proper marketing strategy..

Keywords: conservation, responsible tourism, sustainable tourism.

INTRODUCTION

Boti village in East Nusa Tenggara (Indonesia) is one of the remotes villages but it has been visited by international tourist to enjoy the natural and cultural attraction of the village. Boti Villages inhabited by animism community under traditional leadership system with *Usif* as a kings and creator representative in Boti. Boti community live in sustainable live, with local wisdom and traditional knowledge as an important instrument in daily life. There is social structure that organized Boti community into single traditional community with its traditional life. It can be said that Boti is the last Kingdom in Timor Island with its traditional community live system and traditional ways of life to manage their environment [1,2].

Recently, Boti is one of the target for tourism development in East Nusa Tenggara Province. Fact that this village has been visited by international visitor from Europe and Australia lead local government develop specific planning for tourism development in Boti. The development of tourism in Boti is especially relevant to the national policy of tourism development and significantly important to support local economic development and environmental conservation [3,4]. The development also important to

enhance the socio-cultural aspect of local community in Boti.

Numerous internal and external aspect influence the success and future sustainability of tourism in Boti. Sustainability recently is important issues in the global life, including in tourism sector. Scholar point out that there are numerous aspect influence the sustainability of tourism, ranging from social, economic and environmental aspect. In many case, these factors is not independent, but each factor will have correlation with other factors [5,6]. Therefore, planning to meets sustainable tourism need comprehensive approach. As far, few studies were available to provide comprehensive perspective on tourism basic planning in Boti. The aims of the research is to describes the variable influence the sustainability of tourism and drawn the design for sustainable tourism in Boti Village.

MATERIALS AND METHOD

Participatory Prospective Analysis

Strategy development for sustainable tourism development in Boti was firstly done by developing sustainability scenario using Participatory Prospective Analysis (PPA). The PPA as an instrument analysis which is designed to identify and anticipate changes with expert involvement in analysis process, including the policy holders which are related to the tourism destination development [7].

PPA is an adaptation of numerous comprehensive methods in the rapid and comprehensive

* Correspondence address:

Simon Suddin

Email : simonsuddin57@gmail.com

Address : Dept. Architecture, Nusa Cendana University, Jl. Adisucipto, Penfui-Kupang.

framework of operational work. The cognitive aspect of the methods is related to its typology. It focus on interactions and consensus building, that are able to produce a particular concencuss among the inter stakeholder interaction. It is useful in the perspective of planning. This methods based on some principles, including participation, transparation, consistency, efectivity, relevancy, arguable, and able to increase stakeholders capacity [7].

Generally, there are steps in the process of planning that are conceptualized following the objectivity and rationality, including (a) data collection, (b) data analisys, (c) policy making, (d) implementation and (e) monitoring. The first and second steps is important and influce the success of the next steps.

Participatory Prospective Analysis was done by following these steps: (a) system identification, (b) system variable identification, (c) key variable identification, (d) the impact of inter variable analysis, (e) interpretation of all impact and inter variable dependency, (f) states - of future variable, (g) scenario development, and (h) establishing implication strategic and anticipation actions [7]. System identification was done as first stage in expert meeting, and it was done with discussion methods among expert. This steps is important for the future phase.

Data Collection

Identification of system variable was done using questionnaire, interviews and brainstorming. It is started from variable that have impact to system arrangement and evolution. To ensure the equal participation, the visual techniques using colour charts. Respondent was requested to freely state the important variable, at least one variable in one chart. Charts were collected and attached to the board. The similar

statement (redundant), was deleted and changes with other charts. In this steps, there are concencuss from all respondents to delete and add the charts. In this steps, the discussion related to the relevancy of variables was done, and it is follow up by development of partici- pant’s opinion and concencuss.

Key variable definition was done using structured discussion that discuss the relevancy of each agreed variable. There are simple roles in developing participant opinions to defines variable or not variable, including (1) not question sentence; (2) not negative statement; and (3) not physical expression. Variabel that cannot be stated in different situation was classified as irrelevant variable. From this step, the final definitf system variable was defined and analysed.

Data Analysis

The analysis on the impact of inter-variable was done using structural analys and work group. Respondent answers analysis was focused on the influence/dependence of each variable to other variable using consensual valuations approach. The direct conception valuation of each variable to other variable was illustrated in Table 1.

The valuation of variable impact to other variable was scored from 0 as no impact to 3 as strong impact. These value was discussed among respondent and after get concessus was fill up at influence/dependence (I/D) matrix. Number of valuation depend on the number of identified variable. If there are n variable, there are $n^2 - n$ relationship among variables which should discussed and evaluated. Interpretation of influence/dependence was analized using Microsoft Excel softwre, with table and figure as output analysis. The direct and indirect graph shows the streght level of variable.

Table 1. The Valuation of Direct Conception on Each Variable to Other Variable

From ↓	Factors									
To →	A	B	C	D	E	F	G	H	I	J
A	■									
B		■								
C			■							
D				■						
E					■					
F						■				
G							■			
H								■		
I									■	
J										■

Notes: A-J = important aspects in system

The determination of key factor or dominant factor shows level of influence and links between attributes in the sustainable system. In this situation, each quadrant in diagram has specific and different characters [7]. Each quadrant has characteristics as explained below:

- 1) Quadrant I (*driving variables*) contains factors that has strong impact but has low dependent. This quadrant is called driving variables and considered as a strongest factor in system.
- 2) Quadrant II (*leverage variables*) contains factors that has strong influence but also has strong leverage variables, in which each factors in this quadrant was viewed as strong variable.
- 3) Quadrant III (*output variables*) represents the output factor, in which its influence was less but has high dependency.
- 4) Quadrant IV (*marginal variables*) is the factor with low influence and low dependency. Factors in this quadrant can be ignored in the system.

Morphology Analysis

The next step after Participatory Prospective Analysis is the morphology analysis or steps to define the condition of variable in the future. This analysis aims to estimates future domain and propose alternatives. This analysis was done

by defining future key variable following Bourgeois and Jesus [7]. Respondent was asked to identify some conditions of future variable and focus to the free alternatives. The defined variable and its condition was set up into table that shows the future scenario combination.

RESULT AND DISCUSSION

Keys Variable Factor for Sustainable Tourism Development in Boti

The keys variable as leverages factor for sustainable tourism development in Boti was given in Table 2. Result of the study found that many aspet related to sustainable tourism development in Boti can be classified into four quadrant. This classification can be described below.

- Quadrant I (*driving variables*) consist of 2 factors namely (1) tourism infrastructure and (2) local law (*hukum adat*).
- Quadrant II (*leverage variable*) contains 11 factors: (1) government regulation, (2) tourism zonation, (3) transportation access, (4) cultural heritages preservation, (5) private sectors role, (6) culture conservation, (7) historical sites, (8) role of local institution (*lembaga adat*), (9) application of science and technology, (10) cultural tourism attraction, and (11) tourism education and training.

Table 2. Global Influence and Dependency of Leverages Factors in Sustainable Tourism Development in Boti

Codes	Factors	Global influence	Global dependency	Global strength	Global strength shared
A	Tourism area zonation	136	136	0.026	1.323
B	Water spring	86	48	0.021	1.074
C	climates	95	69	0.021	1.065
D	humidity	87	77	0.018	0.903
E	Fauna diversity	75	102	0.012	0.614
F	Rainfall	91	11	0.031	1.574
G	Jobs opportunity	28	115	0.002	0.104
H	Tourism service development	87	118	0.014	0.718
I	Service diversification	93	117	0.016	0.806
J	Tourism training and education	105	110	0.020	1.002
K	Application of science and technology	117	113	0.023	1.153
L	Cultural heritage protection	122	119	0.024	1.201
M	History sites	112	119	0.021	1.056
N	Cultural conservation	119	108	0.024	1.214
O	Education content	76	108	0.012	0.606
P	Cultural attraction	103	113	0.019	0.955
Q	Transportation access	132	117	0.027	1.366
R	Tourism infrastructure	129	94	0.029	1.457
S	Health facility	80	95	0.014	0.711
T	Accommodation	86	98	0.016	0.782
U	Health water	66	81	0.012	0.581
V	Role of local institutions	110	102	0.022	1.115
W	Local law	106	95	0.022	1.087
X	NGOs	93	103	0.017	0.863
Y	Privates role	120	102	0.025	1.262
Z	Governmental regulation	136	121	0.028	1.405

- Quadrant III (*Output variables*) contains 6 factors, includes (1) non governmental organization (NGOs), (2) business diversification, (3) development of other tourism services, (4) education content, (5) flora-fauna diversity, and (6) jobs opportunities.
- Quadrant IV (*Marginal variables*) contains 7 factors, namely (1) climates, (2) rainfall, (3) air humidity, (4) water spring, (5) tourism accommodation, (6) health facility, and (7) healthy water.

Keys Variable which are Needed by Stakeholders in the Development of Sustainable Tourism in Boti

Keys variable and the variable dependency was shown in Table 3. Quadrant I (*driving variables*) contains 2 factors, including: (1) tourism facility and (2) local law (*hukum adat*).

Quadrant II (*leverage variables*) contain 11 factors: (1) governmental regulation, (2) tourism zonation, (3) transport access, (4) protection of cultural heritage, (5) private sector, (6) cultural conservation, (7) historical sites, (8) role of local institution (*lembaga adat*), (9) science and technology application, (10) attraction to cultural tourism, and (11) education and tourism training.

Quadrant III (*output variables*) contain 6 factor, including : (1) NGOs, (2) tourism business diversification, (3) development of tourism ser-

vice, (4) education content, (5) fauna diversity, and (6) jobs opportunities. Quadrant IV (*marginal variables*) contains 7 factors, including: (1) climates, (2) rainfall intensity, (3) air humidity, (4) fresh water, (5) accommodation, (6) health facility, and (7) fresh water.

Basically, these variable has been identified important among scholar, especially to create sustainable tourism in developing countries with huge biodiversity and local culture tradition. Among the important drive variable in sustainability was infrastructure. In which this aspect contribute significantly in sustainable tourism development [8,9].

Keys Variable Related to Leverages Factors and Stakeholders Needs

Variable keys related to leverages factors and stakeholders needs towards sustainable tourism in Boti was given in Table 4. There are various key variables identified, indicates that the development of sustainable tourism cannot be implemented into single perspectives. Therefore, developing consensus among tourism stakeholder in Boti is important towards sustainable tourism development. Tosun [10] point out that negotiating among stakeholder and establishing consensus is important, especially in the situation where community participation is the crucial issues in tourism development.

Table 3. Global Impact and Dependency of Factors Related to Stakeholder Needs in the Development of Sustainable Tourism

Codes	Stakeholders needs	Global influence	Global dependency	Global strength	Global strength shared
A	Natural attraction	132	132	0.021	1.071
B	Cultural attraction	118	132	0.017	0.903
C	Man-made tourism potentials	113	129	0.017	0.856
D	Tourism area management	120	134	0.018	0.920
E	Conservation	144	131	0.024	1.223
F	Education	99	136	0.013	0.677
G	Nature condition	104	88	0.018	0.914
H	Integrated management	118	128	0.018	0.918
I	Local product commodity	94	116	0.013	0.683
J	Tourism service development	108	134	0.015	0.782
K	Prosperity improvement	124	145	0.018	0.927
L	Infrastructure	139	113	0.024	1.244
M	Accessibility	124	111	0.021	1.061
N	Utility	129	116	0.021	1.102
O	Funding	137	121	0.023	1.180
P	Retribution	98	115	0.014	0.731
Q	Promotion	127	134	0.019	1.002
R	Marketing	133	135	0.021	1.071
S	Investors collaboration	133	126	0.021	1.108
T	Research for development program	133	118	0.022	1.143
U	Implementation	130	100	0.023	1.192
V	Community development	130	124	0.021	1.079
W	Local norm (<i>Norma adat</i>)	108	90	0.018	0.956
X	Regulation	129	96	0.023	1.200
Y	Monitoring and assistance	115	135	0.017	0.858
Z	Regular evaluation	148	148	0.023	1.200

Table 4. Identification of Keys Variable Combination of Leverages Factors and Stakeholders Needs in the Development of Sustainable Tourism in Boti

No.	Keys variable of leverages factors	Keys variable of stakeholders needs	Combination key variable	code
1.	Tourism infrastructure (A)	Infrastructure (N)	Local law (<i>Hukum adat</i>) (B)	A
2.	Local law (<i>Hukum adat</i>) (B)	funding (O)	Tourism regulation (C+R)	B
3.	Government regulation (C)	Research for development (P)	Funding (O)	C
4.	Tourism area zonation (D)	program Implementation (Q)	Tourism area zonation (D)	D
5.	Transportation access (E)	Regulation (R)	Nature-based tourism attraction (Y)	E
6.	Cultural heritage protection (F)	Utility (S)	Cultural attraction (L)	F
7.	Role of private sector (G)	Accessibility (T)	Conservation (V)	G
8.	Cultural conservation (H)	Regular evaluation (U)	Cultural conservation (F+H)	H
9.	Historical sites (I)	Conservation (V)	Infrastructure (A+N)	I
10.	Role of local institution (J)	Investors collaboration (W)	Accessibility (E+T)	J
11.	Application of science and technology (K)	Marketing (X)	Utility (A+S)	K
12.	Cultural attraction (L)	Natural attraction (Y)	Community development (M+Z)	L
13.	Education and training in tourism (M)	Community development (Z)	Integrated management (U)	M
14.		Promotion (AA)	Application of science and technology (K)	N
15.		Increasing prosperity (AB)	Research for development (P)	O
16.			Promotion (AA)	P
17.			Marketing (X)	Q
18.			Role of local institution (J)	R
19.			Role of government (Q)	S
20.			Role of private sectors (G+W)	T
21.			Increase of prosperity (AB)	U

From the systematic synthesis, the consensus of stakeholder on the possible state for sustainable tourism development in Boti was given in Table 5. From the analysis, the possible and better scenario towards sustainable tourism in Boti was given in Table 6.

The scenario with highest score 633 and average 3.25 will occurs sustainably within 2-5 years located at the combination of 1B; 2C; 3B; 4C; 5B; 6C; 7B; 8B; 9B; 10C; 11C; 12B; 13B. This scenario seems to be ideal for the implementation of sustainable tourism development in Boti. In the perspectives of stakeholders, the significant strategy was summarized in Table 7.

From these results, it clear that there are some basic principles to support sustainable tourism development. More principally, it is seems that promoting and strengthening local law becomes the fundamental aspect and spirit for any tourism development program. Result of the analysis indicates that sustaining sustainable live of community in Boti is the main issues in Boti development, and tourism is should be complemented and able to support local culture

live and traditions. Scholar point out that it's become fundamental aspect for tourism development [11].

Strengthening local culture and tradition with local law guideline has been contributes significantly in Bali. Local institution and local culture has been contribute in outstanding and sustainable landscape, in which it is important to attract tourist to enjoy Bali [12]. The local law can be complement with tourism regulation which area set up by central and local government to manage tourism development. Scholars point out that tourism regulation is important to ensure tourism contribute to social, economic and environmental aspects [13]. Tourism zonation and environmental conservation is attributes to the sustainable tourism development, and these aspect has been mentioned by authors as an important aspect in tourism destination development [14]. Another aspect, i.e. infrastructure development, accessibility and funding support has been identified as key for destination competitiveness [8].

Table 5. Respondent Consensus on the Possible State for Sustainable Tourism Development in Boti

Keys variable	Codes	Possible state in the future		
		A	B	C
Local law (<i>Hukum adat</i>)	1	(1A)	(1B)	
		Local law provides less support sustainable tourism	Local law strongly support sustainable tourism	
Tourism regulation	2	(2A)	(2B)	(2C)
		There are regulation but no socialization	There are regulation, socialization but not implemented	There are regulation, socialization and implemented
Tourism area zonation	3	(3A)	(3B)	
		There are no zonation	Tourism zonation exist	
Environmental Conservation	4	(4A)	(4B)	(4C)
		Conservation exist and implemented by local community	Conservation exist, implemented partially and implemented sustainably	Conservation exist, implemented integrally and sustainably
Infrastructure	5	(5A)	(5B)	
		Infrastructure degraded, insufficient to support tourism	Infrastructure support tourism development	
Accessibility	6	(6A)	(6B)	(6C)
		Limited access, insufficient to support tourism development	Access sufficient to support tourism development	Access excellent to support tourism development
Funding	7	(7A)	(7B)	(7C)
		No funding available for tourism development	Funding available but limited	Funding available in sufficient amount to support tourism development
Community development	8	(8A)	(8B)	(8C)
		No community development program	Community development exist	Community development well done
Research for development	9	(9A)	(9B)	
		No research for development	Research for development available	
Role of local institution	10	(10A)	(10B)	(10C)
		There are no role of local institution in tourism development	There are role of local institution in tourism development	Role of local institution very strong in tourism development
Role of government	11	(11A)	(11B)	(11C)
		There are no governmental role	Role of government limited	Role of government significant in tourism development
Role of private sector	12	(12A)	(12B)	
		There are no role of private sector in tourism development	There are role of private sector in tourism development	
Marketing	13	(13A)	(13B)	
		There are no marketing strategy	Marketing strategy exist and implemented	

Table 6. Summary of Possible and Better Scenario towards Sustainable Tourism in Boti

Scenario combination	Score		Category
	Total	Mean	
Local low support sustainable tourism development (1B)	52	3.47	Implemented sustainable in realistic status in this moment
There are regulation, socialized and implemented (2C)	53	3.53	Implemented sustainably more than 6 years
Tourism zonation available (3B)	48	3.20	Implemented sustainably in 2-5 years
Conservation programmed and implemented integrally and sustainably (4C)	39	2.60	Implemented sustainably in 2-5 years
Infrastructure support tourism development (5B)	38	2.53	Implemented sustainably in 2-5 years
Good access, support tourism development (6C)	50	3.33	Implemented sustainable in realistic status in this moment
Funding available, very limited (7B)	51	3.40	Implemented sustainable in realistic status in this moment
Community development available following needs (8B)			Implemented sustainable in realistic status in this moment
Research for development available (9B)	52	3.47	Implemented sustainable in realistic status in this moment
Local institution contribute significantly in tourism development (10C)	56	3.73	Implemented sustainable in realistic status in this moment
Government contribute significantly in sustainable tourism development (11C)	58	3.87	Implemented sustainable in realistic status in this moment
Private sector contribute sufficient in sustainable tourism development (12B)	40	2.67	Implemented sustainably in 2-5 years
Marketing strategy available and well implemented(13B)	38	2.53	Implemented sustainably in 2-5 years
	633	3.25	Implemented sustainably in 2-5 years

Table 7. Identification of Strategy for Sustainable Tourism Development in Boti

No.	Key variable	Scenario	Strategy
1.	Local law (<i>Hukum adat</i>)	Local law support sustainable tourism development	Strengthening local law
2.	Tourism regulation	Regulation available, socialized, and well implemented	Implementation of tourism regulation
3.	Tourism zonation	Tourism zonation exist	Formalizing regulation related to tourism zonation
4.	Environmental conservation	Conservation programmed and implemented integrally and sustainably	Strengthening conservation program
5.	Infrastructure	Infrastructure support tourism development	Infrastructure development
6.	Accessibility	Good access, support tourism development	Accessibility improvement
7.	Funding	Funding available but limited	Fundraising and generating public support for funding
8.	Community development	Community development available following needs	Strengthening community development program and implementation
9.	Research for development	Research for development available (9B)	Promoting research for tourism development
10.	Role of local institution	Local institution contribute significantly in tourism development	Strengthening role of local institution (<i>Lembaga Adat/Masyarakat</i>)
11.	Role of government	Government contribute significantly in sustainable tourism development	Strengthening role of government in tourism infrastructure and accessibility development
12.	Role of private sector	Private sector contribute sufficient in sustainable tourism development	Strengthening role of private sector
13.	Marketing	Marketing strategy available and well implemented	Developing and improving proper marketing strategy

CONCLUSION

There are 13 variable identified as factors that contributes to the sustainable tourism in Boti Village, Timor Island. It includes strengthening local law, Implementation of tourism regulation, Formalizing regulation related to tourism zonation, Strengthening conservation program, Infrastructure development, Accessibility improvement, Fundraising and generating public support for funding, Strengthening community development program and implementation, Promoting research for tourism development, Strengthening role of local institution (*Lembaga Adat/Masyarakat*), Strengthening role of government in tourism infrastructure and accessibility development, Strengthening role of private sector, Developing and improving proper marketing strategy.

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