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Coral reefs ecotourism sustainability assessment based on the integration of government-private-local community in Hoga Island, Wakatobi Regency

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Abstract. This study aims to assess the sustainability of ecotourism activities on the status of coral reef ecosystems in Hoga Island, Wakatobi Regency. The research was conducted from October to December 2012. Both primary and secondary data were used in this research. Primary data were taken using a questionnaire containing subjective parameters, such as taxes, permits, community participation in ecotourism, government policies related to ecotourism, income, labour. Secondary data retrieved by a search of relevant scientific literature and relevant technical agencies in Wakatobi. The sustainability of ecotourism was analyzed using a multivariate or multidimensional scaling (MDS) method. A Sustainability index using four scales commonly used index, as a state by Gyou Ko in 2005, was also applied. The results of this study were a score of 60.5 indicated that the sustainability status of ecosystem-based marine ecotourism Hoga Island reefs in terms of integration between the government-private-local community was potentially sustainable.

1. Introduction

Marine ecotourism is a coastal and marine tourism activity developed with a marine conservation approach. Ecotourism is environmentally oriented tourism to link the interests of protecting natural resources and the natural tourism industry [1]. Ecotourism development can also provide multiplier effects on improving the welfare of local communities, both directly and indirectly [2].

However, tourism development directed at marine ecotourism in Indonesia has not shown optimal results, and the participation of stakeholders is low. Even if it develops, it also causes conflict between stakeholders and follows by environmental degradation, which can threaten the sustainability of marine resources and the sustainability of marine tourism activities [3,4].

Marine ecotourism in Hoga Island managed by Operation Wallacea in partnership with Alam Wakatobi Foundation is currently increasing from year to year, especially from overseas. Inevitably, the research tourism activities carried out with the concept of ecotourism have had an economic impact on tourism managers, local communities, and the local government of Wakatobi Regency.

The relationship of the local community with Operation Wallacea and Alam Wakatobi is still going well until now, thanks to the opportunity to work and strive given to the community. While the relationship with Wakatobi National Park is still ongoing both with the entry tax (entrance fee), which is routinely paid annually.



The development of marine ecotourism using an integrated approach involving the private sector, government, and society in a harmonious synergistic relationship needs to be done so that the marine ecotourism developed can be sustainable [5-7]. The harmonious relationship of synergy can only be realized if the stakeholders involved synergize, and each of the benefits from the developed marine ecotourism activities [8]

However, the involvement of stakeholders such as the government and the community through partnerships that have been built has not been able to guarantee the sustainability of ecotourism activities in the Wakatobi Islands, especially those in Hoga Island. Therefore, so that marine ecotourism activities in Hoga Island can be developed sustainably, it is necessary to conduct research on the analysis of the sustainability marine ecotourism of coral reef resources for integrated based among stakeholders.

2. Method

This research was conducted from August to November 2013, using primary and secondary data. Primary data is collected through direct surveys in the field, also by using questionnaires, in-depth interviews, and through focus group discussions (FGD). Secondary data was obtained from TNC-WWF Wakatobi, Fisheries and Marine Service of Wakatobi Regency, Tourism Office of Wakatobi Regency, District Revenue Service of Wakatobi Regency, BAPPEDA Kab. Wakatobi and BPS Kab. Wakatobi.

The number of respondents taken in this study was 79 people, according to the Slovin formula [9]. The method of determining respondents uses purposive sampling method by looking at stakeholder involvement in marine ecotourism activities. The sample groups in this study include managers of marine ecotourism, tourists, local communities, and government agencies, and policymakers related to the development of marine ecotourism in the Wakatobi Regency.

Table 1. Scores for each attribute from interactions between stakeholders

Attribute (stakeholder contributions)	Scores	Good	Bad	Reference assessment
Government to Private Sector				
Prohibition of Local Governments (equal authority) to take and or damage coral reefs and or protected marine biota which are objects of marine ecotourism attractions	0;1;2	2	0	0= no prohibition regulation; 1= there is a prohibition regulation; 2=there are two or more prohibition (Coremap II, 2007)
There are restrictions on the number of tourist visits by local governments	0;1	1	0	0=no limitation; 1=there is a limitation.
There is a marine ecotourism infrastructure built by the Regional Government (equal authority)	0;1;2;3;4	4	0	0=no facilities; 1=there is a cottage or homestay 2=there is (1), road or transportation facilities; 3=there are (1), (2), and jetty; 4=there are (3) and airport (PHKA, 2001)
Promotion or marketing of marine ecotourism activities by local governments (equal authority)	0;1;2;3	3	0	0=no promotion or marketing; 1=there is promotion at province level; 2= there are (1) and national level;

Guaranteed security at marine ecotourism locations	0;1;2	2	0	3=there are (1), (2) and international level 0=not safe; 1=safe; 2=(1) and there are government security officers
Private Sector to Government				
Tax collection related to marine ecotourism	0;1;2	2	0	0=not paying; 1= pay not according to tax bill; 2= pay according to tax bill
Enterance fee	0;1;2	2	0	0=not paying; 1= pay not according to the visitors; 2= pay according to the visitors
Input marine ecotourism policies to local governments (equal authority)	0;1;2	2	0	0=no input for ecotourism policies; 1=there are 1 – 2 policies input; 2=more than 2 policies inputs
The promotion of marine ecotourism carried out independently by the private sector	0;1;2	2	0	0=there is no self promotion; 1= there is self promotion; 2=self promotion is done regularly
Government to Local Community				
Local government regulation (other equivalent rules) that regulate community involvement in work and / or business in the marine ecotourism sector	0;1;2	2	0	0=no regulation; 1= there are regulations for work or business; 2= there are regulations for work and business
Increasing community capacity by local governments (equal authority) to support marine ecotourism activities.	0;1;2	2	0	0= there has never been training; 1=there are 1-3 training; 2=more than 3 times training
Awareness of the preservation of coral reefs and protected biota as marine ecotourism	0;1;2	2	0	0= there has never been counseling 1= there are 1-3 counseling 2= more than 3 times counseling
Local government stimulant assistance (equal authority) to foster community involvement in the marine ecotourism sector	0;1;2	2	0	0=never; 1= there are already 1-2 times; 2=more than 2 times
Local Community to Government				
The attitude of the community is related to the policies of the Regional Government (equal authority) about marine ecotourism in the region.	0;1;2;3	3	0	0=disagree; 1=indifferent; 2=agree; 3= agree and participate (FGD, 2013)
The attitude of the community is related to the government's efforts to preserve coral reefs and protected biota as marine ecotourism objects in the region	0;1;2;3	3	0	0=disagree; 1=indifferent; 2=agree; 3=agree and participate (FGD, 2013)
Paying tax on homestays / cottages / resorts owned by the community	0;1;2	2	0	0=not paying; 1= pay not according to tax bill; 2= pay according to tax bill.

The attitude of the community towards marine culture as an attraction for marine ecotourism	0;1;2	2	0	0=no cultural preservation efforts; 1=there are cultural preservation efforts; 2=the community holds a cultural festival regularly
Private Sector to Local Community				
Land used for marine ecotourism activities	0;1	1	0	0=own land; 1=buy or rent community land
Social assistance to the community	0;1;2	2	0	0=nothing; 1=there is; 2=there is a routine
Community involvement in the marine ecotourism sector	0;1;2	2	0	0=not involved the community; 1=the community is involved in working/business; 2=the community is involved in working and business
Income of people working in the marine ecotourism sector	0;1;2	2	0	0=under of the regional minimum wage (RMW); 1=relatifly same of the RMW; 2= upper RMW (Result of FGD, 2013)
Local Community to Private Sector				
Community attitudes towards ecotourist	0;1;2	2	0	0=closed to tourist; 1=ordinary; 2=be open (mingle and interact)
Community attitudes towards managing marine ecotourism	0;1;2	2	0	0=ignorant / apathetic; 1=ordinary; 2= be open (harmonious relationship)
The attitude of the fishing community towards the marine ecotourism zone	0;1;2	2	0	0=do not know the tourism zone; 1=know the tourism zone; 2=(1) and obey its signs
Workers in the marine ecotourism sector	0;1;2	2	0	0=do not want to be labor; 1=want to be labor; 2=want to be labor with high-paying

2.1. Sustainability Analysis

The level of sustainability of marine ecotourism management based on the integration of stakeholders (government, private sector, and local community) is analyzed using multivariate or multidimensional scaling (MDS) methods, namely by incorporating various variables or attributes that are appropriate in the management of integrated and sustainable marine ecotourism.

Stage I is reviewing attributes, namely identifying conditions and ideal goals to be achieved from each contribution between stakeholders. Identification will produce several attributes that will be used to determine the sustainability status of marine ecotourism based on stakeholder integration. The attributes based on the interaction of contributions from the three stakeholders studied are then compared with the ideal conditions to determine the level of sustainability of marine ecotourism management. This ideal condition is obtained from the analysis of suitability and carrying capacity, as well as the economic value of ecotourism, as well as tracking secondary data according to the needs of attributes (Table 1).

Stage II scoring or ranking, namely giving in the form of a "bad" value if the most unfavorable conditions in the management of marine tourism, and can also be a "good" value on the other hand, which conditions the management of marine tourism the most profitable. Between these two extreme values, there is usually one or more intermediate values, depending on the number of ranks on each attribute.

Stage III determines the scale of the sustainability index, which is by entering the value of the results of multidimensional scaling analysis to the sustainability index scale that has a value of 0-100. The categories used are four sustainability scales, namely unsustainable (1 - 25), potentially unsustainable (25,1 - 50), potentially sustainable (50,1 - 75), sustainable (75,1 - 100) [10].

Stage IV sensitivity analysis was conducted to see the most sensitive attributes contributing to the sustainability index of marine ecotourism management.

3. Result

3.1. *Government contribution to the community*

The results of ordination attributes of government contributions to the community have a value of 52.7 (potentially sustainable) (Figure 1). This is because the Government of Wakatobi Regency does not yet have a local regulation that regulates community involvement in work and / or business in the marine ecotourism sector; The capacity building of the community carried out by the Wakatobi Government to support marine ecotourism has been carried out at least twice, namely training in souvenir making in 2005 and 2007 and cooking training in 2008; Awareness of the preservation of coral reefs and protected biota as marine tourism objects has often been carried out by Coral Reef Management and Rehabilitation Program (Coremap) II Wakatobi from 2007 - 2011 (sensitive attributes, Root Mean Square / RMS = 24.56); The Wakatobi Regional Government has never provided stimulant assistance to trigger community involvement in the marine ecotourism sector.

The root of unsustainable tourism development is at the local level, so to achieve sustainable tourism development in developing countries, at the local level requires strong political support and local government needs confidence in the decision-making process [11] [12].

Furthermore, [13] said that tourism conditions could not be classified as sustainable development if the results do not consider the quality of life of local communities.

3.2. *Local community contribution to government*

Ordination of local community contribution attributes to the government has a 44.7 (potentially unsustainable) marine ecotourism sustainability index (Figure 1). This is due to the attitude of the community to approve the policy of the local government to make the tourism sector the leading sector in Wakatobi, but less participating because of lack of capital; The attitude of the community also approves the government's efforts to preserve coral reefs and marine biota for the sustainability of marine ecotourism; Local people were apparently not willing to pay their homestay taxes to the Wakatobi Regional Government on the grounds that taxes had been paid by Alam Wakatobi; Local people also try to preserve their local culture, but not the main goal as a tourist attraction.

The results of leverage analysis show that all attributes influence the sustainability index because of the results of the analysis of leverage > 1. Therefore, if you want to increase the sustainability index in terms of community contributions to the government, the four attributes must be intervened, especially the public awareness to pay homestay taxes to the government and attitudes the community has to do with the conservation of coral reefs.

3.3. *Local community contribution to the private sector*

The results of the sustainability analysis of marine ecotourism on Hoga Island in terms of community contributions to the private sector received a value of 54.0 (potentially sustainable) (Figure 1). This is because the attitude of the local community towards tourists visiting Hoga Island is very open and tourists mingle with the community safely; While the attitude of the community towards marine

ecotourism managers is mediocre; In general, local people who do not have permanent jobs want to be involved in becoming workers in the marine ecotourism sector, but due to limited human resource capacity so that there are still limited employment opportunities for local communities; The community knows zoning or special tourism areas but does not comply with its signs.

According to [14] [12] that the level of community participation in tourism activities is strongly influenced by human and financial capabilities, as well as the tastes or goals of the community towards tourism activities. These factors can also be a trigger for conflicts between communities and tourism activities.

The results of the leverage analysis show that the four attributes used to influence the sustainability of marine ecotourism based on the integration of stakeholders on Hoga Island.

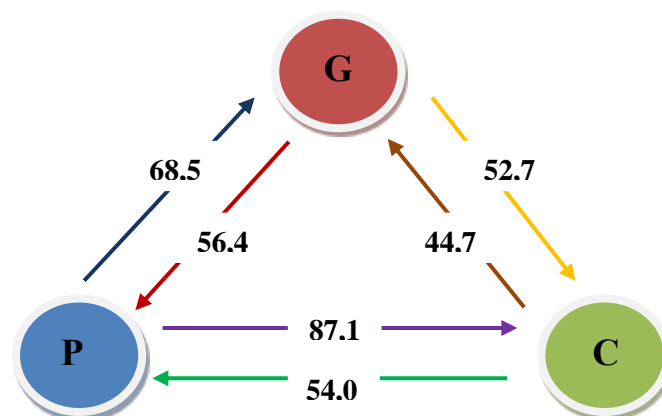


Figure 1. Sustainability value of marine ecotourism based on stakeholder integrity (note: G = government, P = private, and C = community).

3.4. Private sector contribution to the local community

The sustainability analysis of private contributions to the community gets a sustainability value of 87.1 (sustainable) (Figure 1). This is because the land used by Alam Wakatobi / Opwall is 2 hectares in the area to develop marine ecotourism on Hoga Island using community land rented annually at Rp. 75 million; Opwall routinely provides social assistance to the community for the celebration of independence around Rp. 3 million and non-routine assistance to repair village infrastructure; Opwall also involved 78 people from the local Bajo community working and around 20 people who opened businesses related to marine ecotourism activities on Hoga Island; Local people employed at Alam Wakatobi / Opwall have relatively the same income as the regional minimum wage (UMR) of Rp 950 thousand / month in Wakatobi.

The results of leverage analysis if sustainability is to be improved, the private sector increases opportunities and provides access to the community to work and do business in the marine ecotourism sector on Hoga Island.

3.5. Private sector contribution to government

The results of the sustainability analysis conducted from private contributions to the government get a value of 68.5 (potentially sustainable) (Figure 1). This is because the tax that goes into the Wakatobi Regional Government's cash from marine ecotourism activities on Hoga Island is paid not in accordance with the target of the regional government achievement; Opwall / Alam Wakatobi has also provided 2 inputs (suggestions) for policies to develop ecotourism on Hoga Island.

Operation Wallacea has also contributed to promoting the beauty of Hoga Island coral reefs internationally to the world through its headquarters in the UK.

3.6. Government contribution to the private sector

Sustainability analysis of marine ecotourism based on the integration of stakeholders on Hoga Island, from the relationship of the government to the private sector to obtain a value of 56.4 (potentially sustainable) (Figure 1). This is because the local government has made 4 local regulations (regional regulations) that regulate taxes (levies) related to marine tourism and 1 regional regulation on coral reef protection; Until now there has been no regulation from the regional government regarding the restrictions on the number of tourist visits related to the carrying capacity of the region; The marine ecotourism infrastructure that the local government has built is quite a lot, such as the Matahora airport, port and ferry boat; Marine tourism promotion is carried out by regional governments every year at the national level; there is a security guarantee given by the local government in carrying out marine tourism activities on Hoga Island.

The existence of this regulation is in line with [15], which says that sustainable tourism development requires government regulation and intervention, not submitted to the tourism industry to regulate itself. Tourism resources can be arranged using the price or non-price method.

Information such as the above must be owned by a tourism management agency or agency so that resources (natural capital) are not damaged. In addition, the net economic benefits obtained must be kept in a trend so as not to decrease [16].

The issue of accessibility is one of the key factors in the development of marine tourism so that with the opening of access to Wakatobi, it quickly enables tourism to develop in the island districts well.

4. Conclusion

The sustainability status of marine ecotourism on Hoga Island is still categorized as potentially sustainable, with an average value of the overall contribution between stakeholders 60.54. The status of the sustainability of marine ecotourism development on Hoga Island can be improved through increased community participation in the government in relation to marine ecotourism activities on Hoga Island needing serious attention, especially from the community itself. Awareness of the importance of paying homestay taxes needs to get serious attention, especially from the public, so that the management of marine ecotourism can be sustainable.

Reference

- [1] Vaughan D 2000 Tourism and biodiversity, a convergence of interest? *International Affairs* **76**:283-297
- [2] Yoeti O A 2008 Ekonomi Parawisata: Introduksi, Informasi, dan Implementasi Kompas Media Nusantara Jakarta
- [3] Orams M 1999 *Marine Tourism: Development, Impacts and Management*. London and New York Routledge
- [4] Mason P 2003 *Tourism Impact, Planning and Management*. Elsevier, London
- [5] Turner R K 2000 Integrating natural and socio-economic science in coastal management *Journal of Marine Systems* **25**:447-460
- [6] Tsaur SH, Yu-Chiang Lin, Jo-Hui Lin 2006 Evaluating ecotourism sustainability from the integrated perspective of resource, community and tourism *Tourism Management* **27**:640-653
- [7] Ying T, Y Zhou 2007 Community, governments and external capitals in China's rural cultural tourism: a comparative study of two adjacent villages *Tourism Management* **28**:96-107
- [8] Ryan C 2002 Equity, management, power sharing and sustainability –issue of the 'new tourism' *Tourism Management* **23**:17-26
- [9] Sevilla, C G 1993 Pengantar Metode Penelitian Jakarta Universitas Indonesia Press
- [10] Gyou Ko J T 2005 Development of a tourism sustainability assessment procedure: a conceptual Approach *Tourism Management* **26**:431-455
- [11] Tosun C 1998 Roots of unsustainable tourism development at the local level: The case of Urgup in Turkey *Tourism Management* **19** (6) 595–610

- [12] Scheyvens R 1999 Ecotourism and local community development. *Tourism Management* 20:245-249
- [13] Farrell B H (1992) Tourism as an element in sustainable development: Hana, Maui. In V. L. Smith (Ed.), *Tourism Alternatives: Potentials and Problems in the Development of Tourism*. Philadelphia: University of Pennsylvania Press
- [14] Tosun C 2006 Expected nature of community participation in tourism development. *Tourism Management* **27**:493-504
- [15] Mak J dan Moncur JET 1995 Sustainable tourism development: Managing Hawaii's unique touristic resource—hanauma bay. *Journal of Travel Research* **33**(4) 51–57
- [16] Driml S dan Common M 1996 Ecological economics criteria for sustainable tourism: Application to the great barrier reef and wet tropics world heritage areas, Australia. *Journal of Sustainable Tourism* **4**(1) 3–16