

ECOTOURISM PRINCIPLES: APPLICATION AND ASSESSMENT IN MARINE ECOTOURISM MANAGEMENT

NUDDIN HARAHA^{1,2*}, HARSUKO RINIWATI^{1,2} and ZAINAL ABIDIN¹

¹Faculty of Fisheries and Marine Science, University of Brawijaya, Malang, Indonesia.

²Study Group: The Resilience of Coastal and Fisheries Village. University of Brawijaya, Malang, Indonesia.

* Corresponding Author: marmunnuddin@ub.ac.id

Abstract

Ecotourism is a form of tourism management that focuses on nature conservation, but not all managers apply the principles of ecotourism correctly. The purpose of this study is to describe the principles of ecotourism, and the application and assessment of marine ecotourism management. The research method is done by survey, observation and interview. Respondents in this study consisted of ecotourism managers, communities and stakeholders related to tourism. The analytical method uses descriptive analysis of ecotourism principles and assesses the level of suitability of its management. The results showed that the principles of ecotourism became the rules of the game in ecotourism management. There are 5 principles of ecotourism, namely the principle of conservation, participation, recreation and education, economy, and control. Each of these principles has explicit criteria and its measurement attributes are clearly defined. All principles have been implemented properly, except the economic principle and control.

Keywords: Ecotourism; Ecotourism Principles; Conservation; Matrix of Ecotourism Suitability; Rules of Game Ecotourism.

INTRODUCTION

This study examines several subjects related to ecotourism including the definition of ecotourism, benefits of ecotourism, concept of ecotourism, and principles of ecotourism. The main objective of this study is to present the principles of ecotourism. The principles of ecotourism should be the rules of the game of ecotourism. Managing ecotourism should refer to a comprehensible and measurable principle that can be used as a guide. In this article, the Principles of Ecotourism as the Alternatives are also presented. The principles of ecotourism are supplemented with criteria and their measurement attributes. In this article, the results of applying the principles of ecotourism in Clung up Mangrove Conservation (CMC) at Malang Regency, East Java, Indonesia are presented. The ecotourism management in CMC is evaluated by examining to what extent the principles of ecotourism are applied, how high the suitability index principle is achieved, and what principles have not been properly applied yet. Thus, the investigation results of the application of the principles of ecotourism can reveal the positive and negative aspects of the management in managing natural resources to remain sustainable. Then, some improvements on the poor aspects can be performed immediately.

Definition of Ecotourism

Ecotourism and tourism are different things. Currently, tourism is one of the fastest growing economic sectors in the world in which the main reason is only intended for socio-economic development (De Kadt, 1979; Jennings, 2001; Meethan, 2001) . Thus, tourism can compound

some environmental problems and increase environmental degradation (Ayachi & Jaouadi, 2017; Prasetyowati, Harahab, & Soemarno, 2014; STOIAN & ISBĂȘESCU, 2013) . Tourism can make negative impacts or reduce the effectiveness of positive impacts (Andereck, Valentine, Knopf, & Vogt, 2005; Ap, 1992; Lankford & Howard, 1994; Mathieson & Wall, 1982). New job opportunities attract people to migrate to tourist resort areas causing new social and cultural problems (morals, behavior, and culture) (Lindberg & Johnson, 1997; McCool & Martin, 1994; Ross, 1992). Unplanned and uncontrolled construction, distortion of urbanization procedures, and inadequate infrastructure damage the natural environment and wildlife, causing air and water pollution(Lankford & Howard, 1994; Lindberg & Johnson, 1997; Liu & Var, 1986; Milman & Pizam, 1988) . Excessive use or misuse of fragile archeological and historical sites on the environment can damage natural tourism (Gee & Makens; Inskip, 1991).

Ecotourism is a form of sustainable tourism that that is based on natural resources and creates ecological awareness (CEBALLOS-Lascuráin, 1991; Çetinkaya, Kabak, Erbaş, & Özceylan, 2018; Cheia, 2013; Jamrozy & Lawonk, 2017). Ecotourism can also be defined as a tourism that is responsible to natural surroundings, pays attention to conservation goals by preserving the environment, and improves the welfare of the local community(Cater, 2006; Corroya & JACOB, 2011; Fennell & Malloy, 1999; Singh, Dash, & Vashko, 2016; Tisdell & Wilson, 2005) .

Tourism contributes significantly to environmental, economic, social and cultural impacts (Dwyer, Forsyth, Spurr, & Hoque, 2010; Gössling & Schumacher, 2010; Spenceley, 2006) . For the development of sustainable tourism, alternative tourism model such as ecotourism is increasingly recognized as a way to promote not only local livelihood and culture but also environmental conservation(Kirkby et al., 2011).

Ecotourism is a tourism which has responsibility for the accommodation demand and supply of tourism towards the natural environment which is relatively undisturbed to enjoy and appreciate nature (Honey, 1999; McIntosh, Goeldner, & Ritchie, 1995). Ecotourism is defined as a travel to a relatively undeveloped natural destination, with the specific purpose of gaining knowledge, respecting and enjoying the natural settings and diverse wildlife in the ecosystem, all of which can contribute to environmental conservation(Fennell, 2001; Lee, 2007) . Ecotourism has been widely adopted in various countries and protected areas that are looking for sustainable development (Harahab & Setiawan, 2017; D. Weaver, 1998). Nature-based goals must support environmental conservation, social justice, economic benefits, and environmental education (Powell & Ham, 2008). Ecotourism must provide experience for educational purposes for tourists and economic, sociocultural, and environmental sustainability(D. B. Weaver & Lawton, 2007) .

The theories of ecotourism reveal that economic development and conservation of natural resources are in accordance with the objectives (Ferreira, 2004). Thus, the definition of ecotourism focuses on conservation, education, ethics, sustainability, impacts and local benefits as the main variables. In line with the conceptualization of ecotourism occasionally,(Hunter & Green, 1995; D. Weaver, 2010) underlined ecotourism as a form of

tourism that encourages learning experiences and appreciation of the natural environment, or some of its components, in relation to cultural contexts (McNamara & Gibson, 2008). It is further stated that ecotourism is managed in accordance with the best practices for achieving environmental, socio-cultural, and financial viability (D. Weaver, 2011). Weaver recognizes the importance of financial sustainability as a major component of ecotourism. This view can be traced to (Buckley, Pickering, & Weaver, 2003) who stated that there must be a positive relationship between environmental, economic, and social cultural sustainability on one side and financial stability on the other side related to the development of ecotourism (Reichel, Uriely, & Shani, 2008).

Ecotourism activities interact not only with ecological dimension but also with social and economic dimensions. Therefore, the sustainability of ecotourism based on natural resources depends also on the social, economic and environmental dimensions and the importance of balancing the economic development and environmental conservation (Allcock & Evans-Smith, 1994; Grenier, Kaae, Miller, & Mobley, 1993; Krüger, 2005; Nurhayati, Aisah, & Supriatna, 2019; Shanklin, 1993).

Benefit of Ecotourism

The benefits of recreational use on public land, such as ecotourism, are usually not expected to be valued by profits such as money, but it is something valuable that cannot be measured by money (Hakim, Hakim, Hakim, & Harahab, 2018; Loomis, 2002; Mitchell & Carson, 2013). Besides short-term and economic benefits, ecotourism has long-term benefits characterized by social, environmental and sustainable benefits (Carson, 2012; Champ, Boyle, Brown, & Peterson, 2003; G. Garrod & Willis, 1999; Majid, Sinden, & Randall, 1983). The benefits of ecotourism also affect people's willingness to pay for certain improvements or to avoid quality decrease of the tourist attractions they visit (Lindsey, Alexander, Du Toit, & Mills, 2005; Maharana, Rai, & Sharma, 2000; Nuva, Shamsudin, Radam, & Shuib, 2009; Yacob, Radam, Shuib, Samarahan, & Sarawak, 2009). The benefits of developing ecotourism for local community are rarely studied, and it is often claimed that ecotourism promotes the conservation of natural and cultural heritage in certain areas and can improve the standard of living of local community (Boo, 1990; Eraqi, 2008; Intansari & Harahab, 2018; Lindberg & Hawkins, 1993; Riniwati, Harahab, & Abidin, 2019).

Principles of Ecotourism

According to Hetzer, concept of ecotourism is the result of dissatisfaction with the negative approach of the government and the community towards development from an ecological perspective (Fennell, 2006). According to Nelson (Nelson, 1994), when researchers became concerned about the improper use of environmental resources, Nelson suggested that the term 'environmental development' was introduced as a means to reduce the development of tourism development that damages the environment. The term ecotourism is based from an idea; many businesses and governments promote it without understanding its basic principles (Nelson, 1994). In the 1990s, the certification principles, guidelines and approaches began to exist. Each region affected by ecotourism must develop its own principles, guidelines and

certification procedures based on internationally available materials (Blamey, 2001). According to Blamey (Blamey, 2001), three main principles that must exist for ecotourism are based on nature, education and sustainable management including economic and social issues (Beaumont, 1998; Diamantis, 1999; Tisdell & Wilson, 2005).

Furthermore, according to the Tourism Concern which explains the development of principles and guidelines in association with the Worldwide Fund for Nature (WWF), there are ten principles in ecotourism including (1) Conducting sustainable conservation and sustainable use of resources (natural, social and cultural). (2) Reducing excessive consumption and excessive waste. (3) Maintaining and promoting natural, social and cultural diversity. (4) Integrating tourism into planning and development. (5) Supporting the local economy and considering environmental costs and values. (6) Involving local communities. (7) Consulting with stakeholders and public. (8) Conducting staff training that integrates sustainable tourism into work practices (9) Marketing tourism responsibly. (10) Conducting research. Other writers such as Wallace and Pierce (Wallace & Pierce, 1996) emphasize that true ecotourism addresses five principles, namely: (1) Contributing to conservation. (2) Generating economic and other benefits. (3) Minimizing the negative impact on the environment. (4) Increasing awareness and understanding of nature and cultural systems. (5) Increasing community participation.

The principles of ecotourism are presented in different perspectives but their cores are similar to those explained previously. Those principles have four main basic components, namely: (1) Appreciating nature sustainably and ecologically. (2) Environmental education. (3) Local benefits. (4) Gaining tourist satisfaction (Honey, 2008; Jamal, Borges, & Stronza, 2006; Ziffer, 1989). In addition, McIntosh, Goeldner (McIntosh et al., 1995) also proposed six principles of ecotourism, namely: (1) Conservation. (2) Education. (3) Ethics. (4) Sustainable development. (5) Impact. (6) Local benefits.

TIES defined ecotourism as "responsible travel to natural areas that preserves the environment and improve the welfare of local communities." This means that those who implement and participate in ecotourism activities must follow the following principles: (1) Minimizing impact. (2) Increasing awareness and respecting the environment and culture. (3) Providing positive experiences for visitors and the surrounding community. (4) Providing direct financial benefits for conservation. (5) Providing financial benefits and empowerment for the local community. (6) Increasing sensitivity to the political, environmental and social climate of the country. Meanwhile, according to Collins and supported by several experts (Buckley, 2009; Collins, 2008; Fleischer, 2010; Smith, 2009), several principles of ecotourism are: (1) Ecotourism economy that focuses on assessment, scaling, accounting strategies, financial and social benefits, and contributions to community and public policies affecting tourists. (2) Environmental management strategies that include the design of efficient accommodation technology, use of clean energy sources, and development of sustainable practices. (3) Impact of ecotourism on the environment, and social and political organizations of community. (4) Tourist contribution to conservation and restrictions on some conservation practices. (5) Connectivity between ecotourism and environmental education with the contribution that can be offered to the community, for ecological awareness and national park operations. (6) Design

of public policy, tourism, and government policy planning that will benefit tourism development.

The members of communities who want to participate in ecotourism activities are often influenced by their demographic status, especially their level of education that affects their attitudes towards conservation and ecotourism development (Digun-Aweto, Fawole, & Ayodele, 2015). There are other factors affecting people's attitude including gender (Chen, 2000), era (Chen, 2000; Tomljenovic & Faulkner, 2000; D. B. Weaver & Lawton, 2001), involvement in tourism (Ap, 1992; Pizam, Milman, & King, 1994), period of stay (Yoon, GÜRSOY, & CHEN, 1999). Based on the results of this journal review, no principles of ecotourism were found with criteria and its attributes. Attributes or indicators of these principles are needed to be able to measure the application of the principles. Therefore, we arrange the principles of ecotourism with criteria and measurement attributes, as explained in the following section.

MATERIAL AND METHODS

This article focuses more on the principles of ecotourism. The first step is to review several journal articles related to ecotourism and its principles, what the principles are, and how they are applied. The second step is to evaluate the application of principles of ecotourism.

Concept of Ecotourism Principles

According to Harahab, et al. (2021) the principles of ecotourism are the rules of the game of ecotourism. They must be obeyed and applied in managing ecotourism. Anyone should follow and submit to these principles. The 5 principles that must be applied are the principle of (1) Conservation, (2) Participation, (3) Recreation and Education, (4) Economy, (5) Control. Each principle has different criteria. The criterion of conservation principle is to protect the environment utilized for tourism activities (the environment mentioned covers physic, social, culture and economy). Then, the criterion of participation principle is to involve the community actively in tourism activities from the beginning. While the criterion of education and recreation principle is to provide products containing education, lesson, and recreation based on the values of local (natural and cultural) characteristics. Next, the criterion of economy principle is to make a positive contribution to regional economic development. Lastly, the criterion of control principle is to minimize the negative impact of a series of tourism activities.

For the purpose of evaluating the application of ecotourism principles, several attributes are required in each of these principles. The principles of ecotourism and their attributes are presented in Table 1.

Table 1. Matrix of Ecotourism Principles and Attributes

No.	Principle	Attribute
1.	Conservation	1. Changes in landscape
		2. Identification of social and cultural values
		3. Utilization of balanced resources according to carrying capacity
		4. Nature-based facilities and infrastructure
		5. Maintained ecological process
		6. Economic benefits are partly given back to nature
2.	Participation	1. Developing tourism according to community's decision
		2. Identifying community involvement
		3. Formulating engagement and incentive patterns
		4. Increasing empowerment and business opportunities
		5. Gaining competence to fill employment
		6. Hiring local labor
		7. Raising income and welfare
3.	Recreation and Education	1. Natural & cultural values are explored,
		2. The values of nature & culture are lifted,
		3. Natural & cultural values are presented and promoted
		4. Interpretation of natural & cultural values are available,
		5. Tourism activities are programmed to enjoy
		6. Satisfaction, safety and comfort standards are met.
4.	Economy	1. Increased Original Local Government Revenue
		2. Expansion of employment,
		3. Increasing the number & quality of facilities and infrastructure
		4. Increasing trade of local products
		5. Improving tourism services
5.	Control	1. Facilities and infrastructure development are controlled
		2. Ethics of activities are controlled
		3. Plans and designs are available.
		4. Institution of supervision control is established

Study Area

The evaluation of the ecotourism principles application was conducted at the CMC (Clungup Mangrove Conservation) tourist destination area in Malang Regency, East Java Indonesia. CMC is a community-based Ecotourism Conservation area. It becomes the barometer of the ecotourism principles application that is nationally recognized. The process of natural resources conservation in the destination area has been performed well. The main characteristic of CMC is that it offers the combination of mangrove forest and landscape underwater conservation. CMC management ensures the safety of the tourists during their visit at the CMC

area. Besides, CMC area provides natural surroundings and peaceful environment. This location is also suitable for the tourists who prefer private time for gathering with friends and family.

Sample and Procedure

The data collection was completed in November 2021. The research samples were taken from CMC ecotourism managers and related stakeholders. The number of research respondents was 35 people. The questionnaire was not distributed to each respondent since it was only a list of questions that the researchers used as interview guide.

Questionnaire

The list of questions was thoroughly arranged to explore the information and facts related to the application of the principles of ecotourism. The applications of ecotourism principles that were evaluated included conservation, participation, education and recreation, economy, and control. The principles and attributes of the evaluation are referred to Table 1.

Procedures for Evaluating the Application of Ecotourism Principle

Suitability assessment of ecotourism or evaluation of ecotourism principles application refers to the criteria that have been set in the assessment matrix of ecotourism principles application in Table 2. After obtaining the value from the field observations and weighting the value for each principle and attribute, the next step is to calculate the suitability level by using formula as follows:

$$\text{Suitability Value} : \frac{V_{\text{conser}} + V_{\text{par}} + V_{\text{rec}} + V_{\text{ec}} + V_{\text{con}}}{\sum B_{ki}} \times 100$$

V_{conser} = Value of conservation principle

V_{par} = Value of participation principle

V_{rec} = Value of recreation and education principle

V_{ec} = Value of economy principle

V_{con} = Value of control principle

$\sum B_{ki}$ = Maximum score of used criteria (4)

The decision of suitability criteria used are as follows:

76 –100 = Very suitable

51 – 75 = Suitable

26 -50 = Less suitable

≤ 25 = Not suitable

Table 2. Assessment Matrix of Ecotourism Principle Application

Principle	Attribute	Score (obtained field score)				Weight	Value (Weight * Score)
		1	2	3	4		
1. Conservation	1.						
	2.						
	3.						
	4.						
	5.						
	6.						
Total value							
2. Participation	1.						
	2.						
	3.						
	4.						
	5.						
	6.						
	7.						
Total value							
3.Recreation and Education	1.						
	2.						
	3.						
	4.						
	5.						
	6.						
Total value							
4. Economy	1.						
	2.						
	3.						
	4.						
	5.						
Total value							
5. Control	1.						
	2.						
	3.						
	4.						
Total value							
Total Value of weight						1	

RESULT AND DISCUSSION

Evaluation practice of ecotourism principles application was based on the results of the research at Clungup Mangrove Conservation (CMC) ecotourism in Malang Regency, East Java, Indonesia. The results of the study of 35 respondents showed that CMC ecotourism management was very suitable with the principles of ecotourism indicating a value of 77.5%. (Table 3).

Table 3. Suitability Value of Ecotourism Principles

Principle	Attribute	Score	Weight	Value (Weight * Score)
1.Conservation	1. Changes in landscape	4	0.05	0.24
	2. Identification of social and cultural values	3	0.04	0.12
	3. Utilization of balanced resources according to carrying capacity	3	0.03	0.09
	4. Nature-based facilities and infrastructure	3	0.04	0.12
	5. Maintained ecological process	3	0.05	0.15
	6. Economic benefits are partly given back to nature	4	0.04	0.16
Total Value of conservation principle				0.88
2.Participation	1. Developing tourism according to community's decision	3	0.042	0.126
	2. Identifying community involvement	3	0.03	0.09
	3. Formulating engagement and incentive patterns	2	0.03	0.06
	1. Increasing empowerment and business opportunities	2	0.035	0.07
	5.Gaining competence to fill employment	2	0.03	0.06
	6. Hiring local labor	3	0.03	0.09
	7. Raising income and welfare	3	0.04	0.12
Total Value of participation principle				0.616
3. Recreation and Education	1. Natural & cultural values are explored,	3	0.04	0.12
	2. The values of nature & culture are lifted,	4	0.035	0.14
	3. Natural & cultural values are presented and promoted	3	0.035	0.105

Principle	Attribute	Score	Weight	Value (Weight * Score)
	4. Interpretation of natural & cultural values are available,	2	0.035	0.07
	5. Tourism activities are programmed to enjoy	3	0.038	0.114
	6. Satisfaction, safety and comfort standards are met.	3	0.035	0.105
Total Value of recreation and education principle				0.654
4.Economy	1. Increased Original Local Government Revenue	4	0.03	0.12
	2. Expansion of employment,	3	0.04	0.12
	3. Increasing the number & quality of facilities and infrastructure	3	0.03	0.09
	4. Increasing product trade	2	0.03	0.05
	5. Improving tourism services	3	0.02	0.05
Total Value of economy principle				0.45
5.Control	1. Facilities and infrastructure development are controlled	3	0.04	0.12
	2. Ethics of activities are controlled	4	0.03	0.12
	3. Plans and designs are available.	4	0.035	0.14
	4. Institution of supervision control is established	4	0.03	0.12
Total Value of control principle			1	0.5

Based on Table 3, the value of CMC management suitability with the principles of ecotourism can be calculated by using the following formula:

$$\text{Suitability Value} : \frac{0.88 + 0.616 + 0.654 + 0.45 + 0.5}{4} \times 100 = 77.5$$

The calculation result indicated that the suitability value of ecotourism in CMC was 77.5%. Thus, the suitability index was in the range of 76-100 and it belonged to “very suitable” category. This fact shows that the management of CMC natural tourism destination has been in accordance with the principles of ecotourism consisting of Conservation, Participation, Recreation and Education, Economy, and Control (table 3).

The greatest value in terms of ecotourism principle suitability in CMC was the Conservation principle indicating suitability value of 0.88 with 6 attributes used. CMC ecotourism management status has applied the conservation principle very suitably. According to the statements (Gössling, 1999; Krüger, 2005), the main principle of ecotourism is the

improvement of tourism and conservation. The suitability value of Recreation and Education principle was 0.65 and it was based on 6 attributes used. Recreation and Education is one of the significant factors in protecting and promoting a region. The application of Recreation and Education principle will create a sustainable regional economic development which is in accordance with the principles of ecotourism (Belsky, 1999; Cater, 2006; Goodwin, 1996; Lindberg, Enriquez, & Sproule, 1996; Orams, 1995; D. B. Weaver, 1993; Wheeler, 1994; Wight, 1993).

Then, the suitability value of Participation principle was 0.61 and it was based on 7 attributes. Participation of the local CMC community gives a sense of protecting the region and emphasizes the importance of ecotourism in the region. The community participation is expressed in various ways based on economic and environmental aspects. Participation in evaluation can empower the people involved in the local communities; it allows the people to express their own experiences related to ecotourism (B. Garrod, 2003; Guevara, 1996).

Next, Economy principle had the lowest suitability value indicating 0.45. It reveals that the application of Economy principles in CMC has not been successful and has not been significant with the economic growth of the community. Economy and ecotourism should be an inseparable part; ecotourism will lead to economic benefits for the country, society, and local community (Taylor, Dyer, Stewart, Yunez-Naude, & Ardila, 2003; Wilson & Tisdell, 2003).

Lastly, the suitability value of Control principle was 0.50. The application of control principle is essentially a preventive attempt against the impacts that may be caused by the development of tourism. Proficient ecotourism experts and appropriate ecotourism knowledge are indicated from the existence of management control variable. This variable proves that all ecotourism managements are in accordance with the theories of tourism and conservation, so that there will be no impact of the threat of extinct species (Ostrom, 1990, 2008).

CONCLUSION

Ecotourism principles have been formulated by experts with different versions and focuses. However, the core of the principle, is conservation and economics. These principles are the rules of the game in managing ecotourism. The application of the principles of ecotourism in CMC shows a high average score of 77.5% (very suitable). The principle of conservation gets a value of 88 which is classified as very suitable, the principle of participation gets a value of 61 which means suitable, the principle of recreation and education gets a value of 65 which means suitable, the principle of economics and control gets a value of 45 and 50 is classified as less suitable. Thus, the ecotourism manager is expected to move the community's economy related to tourism and not weaken the control function.

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