



**ASSESSMENT OF ECOTOURISM AT TENGANAN PEGRINGSINGAN, BALI WITH
THE INDONESIA SUSTAINABLE TOURISM AWARD (ISTA)**

Oleh

Ester Yuan Rahayu¹⁾, Kisworo²⁾ & Timothy Charles Wherrett³⁾

^{1,2,3}Duta Wacana Christian University, Yogyakarta

Email: [1esteryuanrahayu@gmail.com](mailto:esteryuanrahayu@gmail.com), [2kisworo@staff.ukdw.ac.id](mailto:kisworo@staff.ukdw.ac.id) & [3tim@staff.ukdw.ac.id](mailto:tim@staff.ukdw.ac.id)

Abstrak

Assessment is needed to measure ecotourism outcomes and impacts. Assessment indicators can be used to manage and guide the practice and development of tourism destinations. Indonesia has an assessment standard developed to evaluate sustainable tourism practices, namely the Indonesia Sustainable Tourism Award (ISTA). ISTA is aligned with and officially recognized by the GSTC. This research investigates the ease and effectiveness of implementing ISTA standards in the context of a community-based ecotourism destination. The research was conducted in Tenganan Pegriingsingan village through direct observation, questionnaires and interviews with the local community and JED (jaringan ekowisata desa) managers. The results demonstrate that ISTA was a useful assessment tool for a mature ecotourism destination which was established on the basis of local culture and wisdom. It was also found that a number of criteria were difficult to understand and apply in self assessment of compliance and some modification of the standard may be necessary. The results of this research were applied to create recommendations for ecotourism management and to give feedback on the implementation of ISTA in Indonesia.

Key words: Assesment, Ecotourism, ISTA & JED.

INTRODUCTION

The tourism industry in Indonesia is slowly following market interest towards alternative types of tourism which are hoped to overcome the environmental and social issues associated with mass tourism. These developments can be seen in both the increasing number of destinations which advertise themselves as ecotourism destinations and also the development and implementation of the Indonesia Sustainable Tourism Awards (ISTA) by the Ministry of Tourism. ISTA is a direct adoption of the Global Sustainable Tourism Council's Criteria for Sustainable Destinations (GSTC Criteria - D) [11,12]. It is hoped that ISTA will provide an internationally recognised standard for assessment, development and quality assurance of sustainable tourism destinations in Indonesia enabling destinations to reach their full potential and facilitating the shift from mass to sustainable tourism.

Assessment of ecotourism and sustainable tourism businesses and destinations is essential to develop strategic planning,

monitoring, marketing and to fulfil the requirements of certification. The outcomes of assessment provide the assurance desired by government, consumers and financial backers that the tourism activities do not negatively impact the local environment, economy or society [1]. Indonesia has previously not had a national standard to guide the development of sustainable tourism and it is hoped that communities and businesses can use ISTA as a guide to develop tourism products that fulfil the principles of ecotourism.

LITERATURE REVIEW

Ecotourism

Tourism which focusses on economic growth frequently has negative environmental and social-cultural impacts [2]. Additionally, local communities rarely receive a significant share of the economic benefits as they lack the skills, language and capital needed to access or compete in the industry [3]. This reality has prompted governments, NGOs, local communities and the tourism industry to

recognise and prioritise the principles of sustainability in the development and management of tourism destinations [4]. Ecotourism is a type of tourism synonymous with sustainable tourism which has the core principles of conservation of the natural environment and local culture and traditions; educational and transformational experiences for guests; maximising use of renewable and low embodied energy resources; and finally, maximising ownership, economic benefit and development for local people [5, 6].

Ecotourism will not simply happen without training and skills specific to planning and development, project management, guiding, marketing and monitoring [3]. Basic education to understand Ecotourism is essential to unify understanding and vision. Differences in understanding of ecotourism and inconsistency in application creates divisions amongst tourism practitioners which results in poorer products, monitoring and confusion for stakeholders [7].

Mutana and Mukwada [8] suggest that monitoring of ecotourism practice should utilise indicators which enable tourism practitioners and local communities to identify and understand what improvements need to be made. Sustainable tourism indicators are set in a framework which enables objective measurement and monitoring of the severity of current issues and measuring the risk, likelihood and consequence of future problems emerging [9]. Despite the clear benefits from the application of sustainable tourism standards, significant issues have arisen due to the abundance of different standards and accreditation bodies which have created confusion for both consumers and practitioners and reduced people's trust in both products and the assessment process [1,3].

Global Sustainable Tourism Council Criteria (GSTC Criteria)

The GSTC is an international NGO which was created with the purpose of raising the understanding, practise and application of sustainable tourism globally. In order to address the confusion surrounding ecotourism standards and accreditation they undertook an

extensive process of consultation and comparison to release a set of criteria, GSTC Criteria, and accompanying assessment and accreditation system in 2008, which are hoped to become the base standard for sustainable tourism globally [10]. The GSTC Criteria consist of 54 criteria which are divided into four categories assessing sustainable management, socioeconomic impacts, cultural impacts, and environmental impacts. Mutana and Mukwada [8] have reported that GSTC Criteria are simpler to understand and apply in practice by small businesses and operators compared to previous criteria such as those developed by the World Trade Organisation, because GSTC Criteria are designed to be adapted to the local culture and context of each organisation or destination. Despite this, several difficulties in the application of the GSTC criteria have been identified in the literature to date. Studies have identified difficulties arising from education to understand the criteria and also capacity and capital to quantitatively assess greenhouse gas emissions and other environmental criteria [2,3]. Furthermore, Mutana and Mukwada [8] demonstrated very different results from self-assessment of GSTC Criteria of an ecotourism destination when comparing responses of business operators with local guides. These reported difficulties demonstrate the need for ongoing development of the GSTC Criteria to facilitate application and also for the provision of further training for local communities and tourism practitioners as required.

Indonesia Sustainable Tourism Award (ISTA)

ISTA is a set of guideline criteria for sustainable tourism in Indonesia which were developed directly out of the GSTC destination standards by the Ministry of Tourism in consultation with GSTC, and officially ratified by the council in 2016 [11,12]. The goals of ISTA are to equip practitioners and local communities with the knowledge of sustainable tourism so that the sector can develop rapidly and to provide nationally recognised quality assurance of sustainable tourism destinations. It is also hoped that the criteria can be applied flexibly to local contexts thus strengthening the



cultural and ecological diversity of Indonesia [13]. At the time of writing no publications were found examining ISTA in practice and so research is required to assess how effective and relevant ISTA is in developing sustainable tourism in a variety of contexts cultural and environmental contexts across Indonesia. Comparison of results with existing research on GSTC will also provide further input to the development of both ISTA and GSTC.

Jaringan Ekowisata Desa (JED)

JED is an umbrella organisation which was created in 2002 by the Wisnu Foundation to help local communities which want to develop community-based ecotourism. JED is one of the oldest ecotourism ventures in Indonesia and currently has four villages in the network across Bali. JED has facilitated local communities to develop destinations which aim to fulfil the core principles of ecotourism and also obey the local wisdom, culture, traditions and beliefs which are still strictly practised in Balinese villages [15]. These principles and guidelines were not written down, but the destination was allowed to develop naturally and without pressure to conform to external views [14]. The view that written guidelines create limitations and do not guarantee that the guidelines will be applied or be harmonious with local community views and needs has also been expressed in research on the ASEAN Community-based Tourism Standard [3]. Byzcek [15] is very positive in regards to the understanding of JED villages about the potential and impact of tourism, as well as the positive economic empowerment and high-level control exercised by the villages. This unique history of JED ecotourism villages makes them an ideal case study to examine the benefits of short comings of ISTA.

METHODS

Description of the Community

Tenganan Pegringsingan is located in Manggis, Karangasem, Bali. It is one of the Balinese villages famous for continuing to authentically practise local culture and religion in their daily lives [16]. The village is surrounded by hills and mountains and most

villagers make their living through farming. Unique architecture, rituals and local fabric *tenun gringsing* arising from local beliefs and culture have supported the growth of cultural tourism in the village. Tenganan village and three other villages (Plaga, Sibetan, and Nusa Ceningan) with Wisnu Foundation began working together and established JED in 2002. The development of tourism in the village has initiated further economic growth through home industries which produce and sell handicrafts. At the time of the research there were 13 community members from a total of 214 households of Tenganan Pegringsingan who were active in managing and providing tourism services and there were 3 people who worked in the JED management office (manager, secretary and accountant).

Data collection

An initial semi-structured interview was conducted with the JED manager in January 2018 to determine the history and current status of ecotourism practise in Tenganan Pegringsingan prior to conducting research in the village. This information was also used to determine any specific questions or focuses for research in village which was conducted from March until April 2018. Data collection in the village consisted of observation, informal interviews and a structured questionnaire based on the ISTA criteria.

Questionnaires and informal interviews were conducted with the JED manager and 30 villagers of Tenganan Peringsingan with 10 from each of the groupings: villagers who are members of JED and currently active in tourism (local managers, guides and cooks); non-active members of JED who had previously been active in tourism; and villagers who had no involvement. Biodata consisting of age, sex, role, and length of time working with JED was collected from each respondent. The questionnaire used a Likert scale from 5 (strongly agree) to 1 (strongly disagree) to assess the fulfilment of ISTA criteria. The questionnaire for the JED manager was divided into four sections corresponding to the sections of ISTA: A Sustainable tourism management; B Social and economic situation; C Cultural

assets; and D Environment. The community questionnaire was identical for parts B, C and D. Part A was modified to remove management questions which were not relevant for the community and simple questions were added so that community members became confident answering using the Likert scale and these answers were used to cross check the relevant ISTA criteria. Additionally, open ended questions were asked about respondents' perspectives on tourism management and tourists. The questionnaire was completed with each respondent to circumvent misinterpretation of questions and errors assigning the scale and also to invite further explanation of responses. The results of the questionnaire were complemented with direct observation and also ongoing informal interviews with the local community members who accompanied the researcher in the village. Analysis of sustainable management criteria have been incorporated into the relevant sections of discussion of economic, cultural assets and environment.

Data Analysis

Results of the interviews, observations and questionnaires were compared and contrasted qualitatively, and also with the quantitative results, in order to test the validity of the results. Inconsistency in results between the methods indicated a need to follow up with further research.

Results of the questionnaire were analysed quantitatively with both Excel (Office 2013) and SPSS (version 23). Excel was used to calculate the percentages of each response on the Likert scale. MANOVA through SPSS was then used to test the differences in responses based on respondent data. Likert scale responses for each question were entered as dependent variables and the respondent data (JED status: active, non-active, uninvolved. Gender. Age category: 21-30, 31-40, 41-50, 51-60. Role: Manager, Guide, Cook. Length of time working for JED) were entered as fixed factors. Where a person held more than one role, they were entered into the category with higher responsibility (manager>guide>cook).

Significant differences between groups were identified using Fischer's Least Squared Difference (LSD). Repeated measures test through SPSS was also used to identify significant differences in answers between questions for the entire community.

RESULTS AND DISCUSSION

Mass tourism in Bali has actually created an opportunity for environmentally friendly tourism which supports community development through providing ready access to a market that has a growing segment which is environmentally and socially conscious. Tenganan Pegriingsingan together with JED is one destination that has exploited this opportunity. Residents of Tenganan are positive towards the ecotourism activities conducted in the village and are active to manage tourism in their village. In particular villagers are proud of their culture and the opportunity to educate tourists. The creation and promotion of ISTA by the Ministry of Tourism should further support the development of established ecotourism destinations which can utilise the tool for monitoring, promotion, quality assurance and access to funding. This paper specifically examines the capacity and ease of application of ISTA in the unique social-cultural and historical context of ecotourism at Tenganan Pegriingsingan.

Analysis of criteria related to economic benefits

Self-assessment of the criteria associated with economic benefits by all respondents of the questionnaire was largely positive. All respondents agreed or strongly agreed that JED had provided local community members opportunity to work (Table 1). Indeed, this criteria should be easy apply in the context of community based cultural tourism which is entirely dependent on the cultural practises and traditional knowledge of the local people and occurs in their home village. It would be interesting to explore however why only 17% of respondents strongly agreed with this criteria.

The two lowest rated criteria were those connected to routine training for those actively working in tourism and also training and



education offered to the community in general (Table 1). In both criteria 50% or more responded neutrally or disagreed. In contrast the JED manager scored both these criteria with 4. Two important results for JED to consider are that levels of agreement of members who were active for less than 5 years were significantly lower were than those employed more than 5 years and also currently active members were significantly lower than non-active members (Table 2).

Table 1. Community self-evaluation of tourism at Tenganan Pegriingsingan related to economic benefits.

Question	Mean	95% CI			SD	% D	% N	% A	% SA
		Lower	Upper						
1 The local community have access to tourism work.	4.21	4.12	4.31	0	0	0	83	17	
2 The community is offered training and development.	3.47	3.09	3.85	0	20	30	43	6.7	
3 JED supports education and awareness of the role and potential of tourism in the community.	4.09	3.93	4.25	0	3.3	3.3	67	27	
4 Employees receive wage commensurate with their role	3.80	3.65	3.96	0	10	10	67	13	
5 Tourism employees receive routine training.	3.21	2.83	3.58	0	23	37	40	0	
6 Tourism employees understand their roles and responsibilities towards the environment	4.37	4.18	4.57	0	0	3.3	53	43	
7 Promotion is accurate to the destination and its products	3.74	3.47	4.00	0	3.3	23.3	70	3.3	
8 Profits are returned to the community	4.09	3.87	4.31	0	0	13	70	17	

NB: SD - strongly disagree, D - disagree, N - neutral, A - agree, SA - strongly agree.

Both these results suggest that less training is offered presently which was confirmed by interviews indicating that in the earlier phases training was provided more intensively and the main ongoing formal training which is offered currently is in the capital city, Denpasar, a 2-hour journey away. Although not significant, community members not active in tourism gave the lowest average score for routine training tourism employees (Table 2).

Table 2. Mean responses to the questionnaire for routine training for tourism employees based on tourism involvement (n=30) and years of active involvement in tourism (n=19). Significant differences are indicated by superscript characters (Fischer's LSD, p<0.05).

Dependent Variable	Status in JED	Mean	Length of time active in JED (years)	Mean
Tourism employees receive routine training.	Active	3.28 ^a	<5	2.83 ^a
	Non-active	3.50 ^b	5-10	3.50 ^b
	Not involved	2.78 ^a	>11	3.56 ^b

If the frequency and type of training provided to JED members was communicated more clearly to the general community members it may have a positive effect on increasing ownership and belief in ecotourism and encourage more community members to become actively involved. These are important points for JED and the local community to actively discuss and ensure there is ongoing training and professional development, both

formal and informal, for all members with an active role in tourism and also to provide regular opportunities for other community members to be involved in general or tourism specific education and training.

The view of active members that training is lacking did not influence self-evaluation of awareness of their role and responsibility towards the environment (Table 1). This is in contrast to the findings of Mutana and Mukwada [8] who suggested in their study location that the local community had limited understanding about the role of ecotourism in and their responsibility to the environment caused by the training they received only being related to the specific work responsibility of the individual. Respondents were also mostly positive in their assessment of JED's effort to educate and create awareness of the potential of sustainable tourism in the community, with only one respondent disagreeing and one neutral (Table 1).

The respondent who disagreed was actively involved in tourism at the present time and no one in this group strongly agreed causing the mean response of those actively involved in tourism activity to be significantly lower than other groups (Table 3).

Table 3. Mean responses to the questionnaire for education and awareness about the role and potential of tourism based on tourism involvement (n=30). Significant differences are indicated by superscript characters (Fischer's LSD, p<0.05).

Dependent Variable	Status in JED	Mean	SD	% D	% N	% A	% SA
JED supports education and awareness of the role and potential of tourism in the community	Active	3.80 ^a	0	10	0	90	0
	Non-active	4.30 ^{ab}	0	0	0	70	30
	Not involved	4.40 ^b	0	0	10	40	50

Although minor, this is another indicator that the current generation of guides are slightly less satisfied with training from JED. However, the overall positive self-assessment of all respondents indicates that from the community's perspective these ISTA criteria have been fulfilled through JED's general education about tourism to all residents of Tenganan Pegriingsingan. Despite the positive self-assessment, it would be valuable to test if their perceived knowledge actually corresponds

with the role and potential of ecotourism and responsibility of individuals.

Table 4. Mean responses for the correlation of income with role based on tourism involvement and age (n=30). Significant differences are indicated by superscript characters (Fischer's LSD, p<0.05)

Dependent Variable	Status di JED	Mean	Usia (tahun)	Mean
	Employees receive wage commensurate with their role	Aktif	3.86 ^{ab}	21-30
Non		4.00 ^a	31-40	4.19 ^c
Tidak		3.50 ^a	41-50	3.40 ^a
			51-60	4.00 ^{bc}

In the remaining criteria there was broad agreement within the community and with JED. More than 70% of respondents agreed that promotion was accurate to the destination and the tourism product (Table 1). The JED representative also stressed the importance for JED to only offer what is available so they have made significant effort to be accurate in their promotion of Desa Tenganan. Mutana and Mukwada [8] found the opinion of tour operators and employees to be very different with operators agreeing that wages were commensurate to the employment role and employees disagreeing. However, at Desa Tenganan the majority of respondents were in agreement that wages are commensurate with the role worked (Table 1). A major reason for the difference is probably that at Desa Tenganan the local community works together with JED in a co-op where the community managers give the local community a strong voice and capacity to control these decisions. This is also reflected in the positive rating for return of profits to the community (Table 1). Looking in more detail at responses to wages being commensurate with role, community members with no tourism involvement were less positive than past and present tourism workers (Table 4) probably due to a lack of knowledge. Interestingly for this criterion respondents aged 41-50 years and 21-30 years rated fulfillment lowest, and significantly lower than 31-40 years (Table 4). This may be explained by discussions with a number of respondents who suggested the supplementary nature of income generation through tourism and the disposition of both age categories to

hope for a larger income as the 41-50 year olds are conscious of the approaching end of their working careers and 21-30 year olds at the beginning of their careers and looking to maximize income. The relative satisfaction of respondents aged over 50 years are probably reflective of a change in focus to enjoy more time in the home and reduced drive to search for supplementary work or wish for higher wages from tourism. The supplementary nature of tourism work in the present study is similar to findings at *Wisata Pulesari Village* where tourism work did not draw people away from other income generating activities [12].

Analysis of criteria related to cultural and community assets

All respondents agreed or strongly agreed that JED has actively engaged the local community; historical, natural and cultural sites are preserved; the local community still have access to tourism sights and the mountain; and tourism has supported local handicrafts (Table 5).

Table 5. Community self-evaluation of tourism at Desa Tenganan related to cultural assets, community, and tourists.

Question	Mean	95% CI		% SD	% D	% N	% A	% SA
		Lower	Upper					
1 These is a code of ethics and behavior for visitors	3.52	3.25	3.78	0	6,7	30	63	0
2 Historical, natural and cultural sites are protected	4.52	4.34	4.71	0	0	0	50	50
3 Laws and rules which guard local intellectual property	3.36	3.13	3.58	0	3,3	57	40	0
4 Engagement of local community	4.44	4.20	4.67	0	0	0	57	43
5 Supports local culture	4.07	3.88	4.27	0	0	6,7	77	17
6 Supports local handicrafts	4.16	4.05	4.29	0	0	0	86,7	13,3
7 Community have access to tourism sites	4.44	4.24	4.64	0	0	0	60	40
8 Community access to the mountain is maintained	4.62	4.47	4.78	0	0	0	40	60
9 Law and rules to prevent all forms of exploitation	3.24	2.95	3.53	0	23	23	53	0
10 The community is involved in long term planning	3.14	2.79	3.49	0	40	13	43	3,3
11 The community can share their opinion in decision making	3.77	3.47	4.07	0	10	20	63	6,7
12 Monitoring and reporting are completed routinely	3.09	2.73	3.45	0	37	13	50	0

NB: SD - strongly disagree, D - disagree, N - neutral, A - agree, SA - strongly agree.

Strong agreement was also found for tourism supporting the preservation of local culture (Table 5). This stands in contrast to Pasape *et al.* [5] who report changes in community living, and negative impacts on the environment and the genuine practice of culture as they became commodities to sustain tourism in an ecotourism destination in Tanzania. They suggest many of these problems arose when local communities sign agreements with ecotourism operators which give the community access to the industry but eventually disempower them so they cannot



develop and govern the destination [5]. The very positive results at Desa Tenganan are probably due to the community-based development and empowerment process utilised in establishing the destination. The genuine practise of culture is still prioritised and observed in their management such as not permitting guests to stay in the village overnight despite the extra income generation potential of managing guesthouses. One of the main reasons non-active members of JED shared they had stepped down from active membership was so that they could focus on cultural and religious ceremonies. Ecotourism has also helped to preserve traditional methods and cultural values of *tenun gringsing* fabric production through provision of a market willing to purchase the handmade fabrics at a greater cost than the machine-made counterfeits which are sold cheaply in nearby tourist markets. The community is currently applying for intellectual property rights for *tenun gringsing* fabric production to further protect their culture and traditions. Despite this only 40% of respondents agreed that there were regulations to guard intellectual property (Table 5). This is an ISTA criteria which is difficult to be understood and applied by village people without external guidance.

Despite the involvement of the community in establishing and continuing to manage the destination 10% of respondents disagreed that the community can share their opinion and make decisions related to tourism and 40% disagreed that the community was involved in long term planning (Table 5). In contrast, the JED manager agreed that the community were involved in long term planning. Table 6 shows that involvement in long term planning was rated lowest by active members and those with no involvement in tourism activities. JED members explained that several meetings per year are held between JED managers and JED community members, which are not open to non-members. Involvement in long term planning is also influenced by a local custom *Banjar* whereby people must share their perspective with a leader who then brings those opinions to the meetings. This explains the

negative ratings given by those not involved in tourism in regards to planning. Those not involved also had the most negative responses to the community being able to share opinions in decision making (Table 6).

Table 6. Mean responses for reporting of JED to the community based on tourism involvement (n=30). Significant differences are indicated by superscript characters (Fischer's LSD, $p < 0.05$).

Dependent Variable	Status in JED	Mean	% SD	% D	% N	% A	% SA
	Non-active	3.40 ^b	0	30	0	70	0
	Not involved	2.50 ^a	0	60	30	10	0

highlighting a need for JED to continue to have an active and open consultation process with the whole community. The negative rating of currently active members for involvement in long term planning, despite being positive about opportunities to share their opinion (Table 6), indicates a perceived lack of influence which is also reported in other ecotourism destinations [8]. Again, this is an important indicator that JED may need to review their meeting and planning processes.

Each location visited by tourists at Desa Tenganan has its own code of practice for visiting, however this is not written but communicated by guides to visitors before each site is visited. This may be adequate, but only if local knowledge is effectively taught to each subsequent generation of guides. Interestingly whilst 60% of respondents agreed there was a code of ethics, the two respondents who disagreed are currently active in tourism (Table 5). It may be wise for the community to preserve the code of ethics and practise in a written format which could be used for multiple purposes including teaching future generations, communicating expectations and preparing guests prior to arrival and even published with photos as a cultural-historical anthropology and sold to tourists. A common understanding of the code of ethics and practice is essential to avoid disagreements and differences in practice reported in other areas [8, 17]. Besides a code of ethics guiding visitation, there are both local cultural laws and national laws which should prevent exploitation and harassment, although

some respondents expressed uncertainty as to which laws should be applied or have priority when there were differences between local and national laws. It is suggested that this confusion has led to only 53% of respondents agreeing that the criteria had been fulfilled (Table 5). Prevention of exploitation and harassment is dependent not only on the existence of rules but also how they are put into practise. It is suggested that JED regularly facilitates community discussion to ensure exploitation and harassment does not occur.

Ecotourism activities in Desa Tenganan, and the other JED destination, are monitored by the central JED management office. A stark contrast was observed between the opinion of the JED manager and the community over monitoring and reporting being conducted routinely and on time. The JED manager strongly agreed that this was done whilst only 50% of the community agreed and 37% disagreed (Table 5). Those not involved in tourism showed the largest level of disagreement (Table 7).

Table 6. Mean responses for community involvement in long term planning and opportunity to share opinions and make decisions based on tourism involvement (n=30). Significant differences are indicated by superscript characters (Fischer's LSD, p<0.05).

Dependent Variable	Status in JED	Mean	% SD	% D	% N	% A	% SA
The community is involved in long term planning	Active	2.80 ^a	0	50	20	30	0
	Non-active	3.70 ^b	0	20	0	70	10
	Not involved	2.80 ^a	0	50	20	30	0
The community can share their opinions and make decisions	Active	3.80 ^b	0	10	10	70	10
	Non-active	3.90 ^b	0	10	0	80	10
	Not involved	3.30 ^a	0	10	50	40	0

Again related to their exclusion from the regular meetings of JED members with management meaning they don't know the results of reporting unless they proactively question active members. The Jed manager indicated that they believed they fulfilled the criteria adequately through annual reporting to the whole village. ISTA criteria B.4.a also incorporates community satisfaction as an important indicator of fulfilment of the criteria [13] so it is recommended that JED re-evaluate their processes for monitoring and reporting in consultation with the community.

Tabel 8. Community self-evaluation of tourism at Desa Tenganan related to environment.

Question	Mean	95% CI			% SD	% D	% N	% A	% SA
		Lower	Upper						
1 Processes wastewater so it can be reused or disposed of safely	1.95	1.66	2.24	13	70	13	3,3	0	
2 Solid waste is managed so there are no negative impacts	4.03	3.73	4.34	0	6,7	10	63	20	
3 Reduction of water consumption to not exceed basic needs	2.63	2.25	3.01	3,3	47	30	20	0	
4 Tourism seeks to reduce air and sound pollution	2.72	2.48	2.96	0	30	57	13	0	
5 Measurement and reduction of non-renewable energy use	2.49	2.13	2.84	0	57	33	10	0	
6 Use of environmentally friendly transport options	4.43	4.19	4.67	0	0	0	60	40	
7 Protects and conserves the local environment	4.48	4.28	4.68	0	0	0	60	40	

NB: SD - strongly disagree, D - disagree, N - neutral, A - agree, SA - strongly agree.

Analysis of criteria related to the environment

Conservation of the environment and minimising impacts are essential to ecotourism. Both the local community and JED had 100% agreement that ecotourism activities at Desa Tenganan had protected and conserved the environment (Table 8). Despite this, a number of criteria looking at environmental sustainability and impact were rated very poorly and there were discrepancies between community assessment and direct observation. 83% of respondents disagreed or strongly disagreed that wastewater was managed adequately so that it could be reused or disposed of safely. Further questioning revealed that many responded negatively because they considered wastewater management to be something done by industry but not households or villages and so did not consider that waste water was managed at Desa Tenganan. Interviews and direct observation revealed that black water from houses and the public toilet constructed for tourists was managed through the use of septic tanks which were regularly maintained. No direct negative impacts in the village were found, but the downstream processing by businesses who emptied the septic tanks could not be determined. In regards to solid wastes the community were positive in their self-assessment of management (Table 8). However significant collections or plastic and other hard wastes were observed in areas not visited by tourists. On further questioning several community members explained that they believed the issue was not with tourism but with the behaviour the community themselves and their individual management of waste. This illustrates that education of the benefits and importance of conservation and



environmental management has not yet resulted in transformation of the worldview or daily habits of the local community and should be a focus for JED.

Only 20% of respondents agreed that there were active efforts made to reduce water consumption. Many of those that were neutral or disagreed explained that they have never experienced water shortages so they do not believe there was any need to modify their current practices. Similarly, 57% were neutral and 30% disagreed that there were efforts to reduce air and sound pollution because it wasn't yet necessary in the village. This opinion was also shared by the JED manager. There is a risk that JED and the community may ignore these criteria until a problem arises which illustrates the benefit of using ISTA as it promotes communities to proactively prevent degradation rather than be reactive.

Assessment of the criteria on measurement and reduction of non-renewable energy use was also very low with only 10% of respondents agreeing that this occurred and 57% disagreeing (Table 8). In other studies, this criteria is also rarely fulfilled largely because of the difficulties faced in measuring [3, 8]. Local communities do not have the technical skills and knowledge to conduct measurement and are unlikely to have the commitment to pay consultant fees to conduct measurements. The local community manager also explained that there had never been any measurement of energy consumption or greenhouse gas emissions at Desa Tenganan, however they had attempted a micro-hydro project on a nearby stream. Micro-hydro projects in Bali also need to closely consider the impact on downstream water movement and communities through the local belief system of *Subak* [19]. The local manager said that the micro-hydro project did not interfere with *Subak*, but it is suggested that they should also communicate with downstream communities. Unfortunately, the project has been abandoned because it failed to generate the level of energy expected.

These difficulties in understanding and applying some of the environmental criteria suggest that there is a need for greater

coordination and support from government agencies and NGOs to facilitate local communities to apply these criteria. Alternatively, some modification of the criteria could be made, such as a focus on reducing the use of non-renewable energy sources as the main component of the criteria and quantitative measurement of energy usage and production of greenhouse gases as an optional, but recommended extra. Without concerted effort by the Ministry of Tourism it is likely that these criteria will rarely be fulfilled because of lack of support such as happened in Thailand with the ASEAN-CBTS (Community Based Tourism Standard) [18] and differences in values placed on sustainability principles as was observed in Tanzania [8].

CONCLUSION AND SUGGESTIONS

Utilising ISTA as a tool to assess the fulfilment of baseline criteria for sustainable tourism at Tenganan Pegringsingan Village revealed that on the whole ecotourism practise was of a good standard based on both direct observation and self-assessment by the community and JED management. This is a positive affirmation that an open-ended planning and development process guided by local wisdom can have the capacity to produce a quality ecotourism destination. This approach however is not guaranteed to provide positive outcomes as it is entirely dependent on the collective wisdom of the local people and any external mentors involved. The use of ISTA as a baseline standard to help destinations ensure they do not neglect aspects and approach an international standard was proven by the identification of a number of criteria which need attention at Tenganan Pegringsingan Village. Communication, monitoring, management and planning processes should be reviewed so that they more effectively involve and empower all community members. Structured training should be provided for each subsequent generation of guides and others involved in the community, either by senior practitioners from the community or JED. There is also a need for further education of the general community of the importance and value

of minimising environmental impacts and supporting conservation through daily life. It is recommended that they utilise ISTA as a supplementary tool to guide ecotourism development. This need not displace the priority of local wisdom and organic growth. Rather best practice application of standards such as ISTA will always facilitate and maximise the application of local wisdom and determine community and tourist needs. Formal recognition of compliance with ISTA should also lead to benefits to recognition, advertising and capacity to raise capital. Despite the benefits of using ISTA, a number of shortcomings were revealed. As a document ISTA is still relatively difficult to understand and apply for local communities and particularly if individuals have a low level of education. This means that in its current format local communities are still largely dependent external support to be able to apply and derive benefits from it. If ISTA remains a tool which can only be applied by external bodies then it will fail to fulfil the basic ecotourism principle of community empowerment and development. Therefore, it is recommended that the Ministry of Tourism actively provide training for communities to understand and apply the ISTA criteria. The development of a simpler guide, which can be easily applied by communities for assessment, monitoring and planning in line with the ISTA criteria would also help facilitate community empowerment. It is also suggested that the Ministry of Tourism creates a proposal and grant system to provide funding in the early phase of development of sustainable tourism destinations. As it is currently ISTA awards are given to those destinations which are already compliant. Finally, it is recommended that the criteria for measuring and reducing the use of non-renewable energy sources and production of greenhouse gases is made to focus on reduction and qualitative measurement. Quantitative measurement can become a recommended, but optional extra.

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