Practical model for Measuring progress towards Sustainable rural tourism development (SRTD) in rural area of Iran

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ABSTRACT: The basis of sustainable tourism development is the concept of reconciliation, non-defiance, combining requirements of ecology, economics and society. This concept is very topical with regard to tourism and in particular relating to rural and agricultural tourism. However, Sustainability as a notion comprising economic, ecological and social and cultural factors requires when studying sustainability of rural tourism to include the determination of a whole system of parameters. When reviewing the sustainable future development of rural tourism in Iran we have to take into account the interests of all figures on that market, because a prerequisite for sustainable development of rural tourism is the simultaneous consideration on one hand, the interests of local people in a long-term period (improvement of infrastructure, development of agriculture and promotion of the standard of living as a whole) and on the other hand, the interests of tourists (providing traditional rural atmosphere, which involves a number of components). The purpose of this paper is to develop a practical model of Measuring progress towards sustainable rural tourism development in terms of system quality along a time scale, rather than absolute levels of sustainability. In measuring progress, the perceptions of stakeholders regarding various aspects are to be examined to identify the extent to which tourism meets the three core elements of meeting the interests of local residents, satisfying the requirements of tourists, and preserving the value of the natural environment. The proposed measurement model presents measures of sustainability of individual tourism indicators, and addresses complex and various aspects such as the political, economic, socio-cultural, and environmental impacts of the industry, and the quality of tourist experiences.

Keywords: rural tourism, sustainable development, Measuring progress, sustainability

INTRODUCTION

Tourism is the world's largest industry. It employs approximately one in nine workers worldwide, comprises 6% of global gross national product (GNP) and, in many nations, in particular the developing Third World countries, has been seen as a panacea for solving many social and Economic problems. (Chapman and Hall, 1997) Thus, in recent years, tourism has become a major option for sustainable development in many parts of the world.

Good management of rural tourism can make a positive contribution for the rural economy and community and become one of the main forces influencing the direction of regional development. However, to achieve its true potential, care needs to be taken to conserve the rural heritage, biodiversity, landscapes and the local culture. If During the last decade, interest towards rural tourism has increased in all of countries especially in developing countries (Maia, 2005) after the period of time Concern over the economic, environmental and socio-cultural effects of unsustainable rural tourism has led to increasing international agreement and action promoting rural sustainable tourism development. Sustainable tourism development attempts to incorporate the principles of sustainable development into tourism to minimize its negative effects and maximize benefits. (WTO, 2004) This concept is very topical with regard to tourism and in particular relating to rural and agricultural tourism. However, Sustainability as a notion comprising economic, ecological and social and cultural factors requires when studying sustainability of rural tourism to include the determination of a whole system of parameters. When reviewing the sustainable future development of rural tourism in Iran we have to take into account the interests of all figures on that market, because a prerequisite for sustainable
development of rural tourism is the simultaneous consideration on one hand, the interests of local people in a long-term period (improvement of infrastructure, development of agriculture and promotion of the standard of living as a whole) and on the other hand, the interests of tourists (providing traditional rural atmosphere, which involves a number of components), thus, in this paper, attempt to develop a practical model of Measuring progress towards sustainable rural tourism development (SRTD).

Literature review

Sustainable Tourism and Sustainable Rural Tourism

Since the appearance of the World Conservation Strategy (International Union for Conservation of Nature and Natural Resources (IUCN), United Nations Environment Program (UNEP) & World Wildlife Fund and Our Common Future (World Commission on Environment and Development), many academics, community groups, governments, non-government organizations (NGOs) and international organizations have been attempting to convert their theoretical intentions in relation to sustainable development into practice in all areas (Sharmon, 2005) especially in area of tourism. Concern over the economic (increasing the price of necessities such as land and food, making them unaffordable for locals, different in incomes,...) (Linda et al., 2008), environmental (exceeds the carrying capacity, Over consumption of natural resources, Damage arises primarily through pollution, impacts include disruption of wildlife habitats, impact on marine resources through recreational activities such as snorkeling and diving, and increased pressure on endangered species from hunting and trading activities) (McLaren, 2003) (Perrin et al., 2001) and socio-cultural (disruption of traditional and subsistence activities, commoditization of cultures,...) (Stoykova, 2003; McLaren, 2003) effects of unsustainable tourism in all spaces especially in Rural spaces has led to increasing international agreement and action promoting sustainable tourism development. "sustainable tourism" as tourism that meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future of the tourist sector. (Linda et al., 2008) Sustainable tourism development is envisioned as the “management of all resources in a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural heritage, essential ecological processes, biological diversity and life support systems” (Maia, 2005) WTO has concluded that sustainable tourism guidelines and management practices are applicable to all forms of tourism in all types of destinations. Sustainable tourism, according to WTO, is based on sustainability principles, which refer to the environmental, economic, and socio-cultural aspects of development. Sustainability implies that a suitable balance must be established between these three dimensions. Hunter and Green (1995) developed a list of criteria for sustainable tourism, including (Linda et al., 2008)

Follow ethical principles that respect the culture and environment of the area, the economy and traditional way of life, and the political patterns.

Involve the local population, proceed only with their approval, and provide for a degree of local control.

Keep intra-generational equity in mind, including fair distribution of benefits and costs.

Plan and manage tourism with regard for the protection of natural environment for future generations.

Plan in a manner integrated with other economic sectors.

Continuously assess to evaluate impacts and initiate action to counter any negative effects

Sustainable tourism emphasizes using environmental resources to maintain biological processes and conserve the natural heritage. It respects the socio-cultural authenticity of host communities and distributes socioeconomic benefits like stable employment, income-generating opportunities, poverty alleviation and social services. It provides informed and meaningful participation of all stakeholders—especially local and indigenous communities—and provides high levels of tourist satisfaction. (WTO 2004)

The basis of sustainable tourism is the concept of reconciliation, non-defiance, combining requirements of ecology, economics and society. This concept is very topical with regard to tourism and in particular relating to rural tourism. (Yarkova and Stoykova, 2008)

Within the total world, rural tourism forms a relatively small sector but is of growing importance. The reason for this is that, until now, a very large part of tourism has been concentrated on coastal zones and in cities. When governments and the tourism industry wish to develop new regions for tourism, they are increasingly considering rural areas, which, until now, have been little developed for tourism. (Maia, 2005)

Movement toward Rural sustainable tourism is a long-term goal that will require changes in the tourism sector that need to be outlined in a strategic sustainable tourism plan and implemented over the long term. (Linda et al., 2008) Once the vision for rural sustainable tourism is agreed upon and clearly articulated, then a system to determine how to measure progress toward this vision is needed. Carrying capacity, the amount of use that a natural resource or even a community can withstand without being damaged for future use, has been a key component for measuring progress because it sets benchmarks with which to assess progress as suggested by Hunter and Green (1995). Carrying capacity identifies the cultural, social, and ecological limits to tourism growth, but estimating carrying capacity, particularly cultural or social carrying capacity, is challenging. Despite the enormous potential of tourism in rural areas, there are several sustainability issues facing the industry that impact its contribution to sustainable development. (Sharmon, 2005). Based on these, any rural
sustainable development strategy must incorporate the essential dimensions of fairness and equity, progressive human development and environmental sustainability. Abdullaev (2000) shows this in as Circles Model of rural Sustainable Tourism development. (Figure 1) The model consists of three concentric circles of sustainability. The center of the model is the intergenerational equity (IE), as the main objective of the sustainable development as stated in Brundtland Report “….without compromising the ability of future generations to meet their own needs”.

Figure 1. Concentric Circles Model of STD (Abdullaev, 2000)

The aim of IE cannot be pursued without sustaining capital stock. (First circle - sustainability of local capital stock) This includes environmental, socio-cultural and economic capital. For sustainability of local capital stock, the interactions between capital stock and stakeholders, and interactions within stakeholders shall be sustainable (second circle-equity of stakeholders).

**Sustainability rural tourism assessment**

there has been intense debate about the process of sustainability assessment (Ko, 2005). The current literature suggests that considerable progress has been made in planning framework, policy and tourism-impact research (Bramwell et al., 1998; Gunn, 1994; Garrod and Fyall, 1998; Hunter, 1997; Wahab and Pigram, 1997) However, in spite of the efforts made by several tourism researchers (Miller, 2001; Wallace and Pierce, 1996), several studies have pointed out how little progress has been made in monitoring and measuring sustainable RTD (Goodall and Stabler, 1997; Sirakaya et al., 2001; Weaver and Lawton, 1999). This lack of progress may be due a lack of mutually accepted measurement and monitoring systems. As Moffatt (1996) argued, “y at present, no universal agreement on a specific sustainable index has been made. The lack of a single composite index or useful set of indices poses great difficulties in attempting to monitor whether or not a particular trajectory of a system is on a course of sustainable development or not.” In order to assess local tourism development, to guide present action, and to predict future development, decision makers and planners need to know potential monitoring area, data availability, and measuring methods (Chris and Surabaya, 2006). However, there has been intense debate about how sustainability should be assessed. The debate on sustainability assessment may be broadly divided into two approaches (see Bell and Morse, 1999, pp. 77–103): a reductionist approach; and a holistic (systemic) approach. The reductionist approach can be seen as reflecting the scientific paradigm that has been dominant in the Western research tradition. However, this paradigm is challenged by one alternative described as a holistic or systemic approach. The approach to measuring sustainability in absolute, traditional, reductionist terms may be non-viable because sustainability is not determined by single components. Nor sustainability can be explained and measured by holism alone because, as identified even by some of the advocates of the holistic approach (e.g. Bell and Morse, 1999), the fundamental limitation of the holistic approach is that it has failed to suggest any acceptable analysis method in measuring sustainability. There is no doubt that the holistic approach has many benefits in formulating a
conceptual framework for sustainability assessment procedure. However, in some part of the assessment procedure, particularly in data-analysis processes, traditional mathematical or technical method must inevitably be introduced if the holistic approach is to become an acceptable assessment tool (Ko, 2005). Therefore, this paper combines the two approaches and This builds on Ko (2005) and how holistic and reductionist approaches were combined. From the discussions mentioned in previous sections, this study aims to develop a practical approach to tourism sustainability assessment. Eight steps of sustainability assessment procedure are introduced in this section: identify the systems; identify dimensions; identify indicators; scale the indicators; determine gradations of sustainability; develop SAMs; extend sustainability over time; and evaluate the outcome.

MATERIALS AND METHODS

a. Study area (Rural tourism in Iran)

Iran is located in southwestern Asia and covers the land area of more than 1,648,000 km². The country possesses one of the world's oldest continuous major civilizations, with historical and rural settlements date back to more than 5000 BCE. It is rich with the history of humanity and has a high concentration of archaeological sites. Throughout history Iran has been of geo-strategic importance owing to its central location in Eurasia. It is in the juncture of cultural, intellectual, and political manifestations of both the East and the West. Despite this, the land adamantly preserves its unique identity. There are thousands of historical places in Iran and many are yet to be discovered. Today eight historical sites are listed under the World Heritage list, while 53 more sites are tentatively listed. Thus, beyond reasonable doubt heritage tourism is an important contribution to the Iranian tourism industry (UNESCO, 2007). According to O'Gorman (2007), Iran's archaeology, cultural heritage, traditions, and natural characteristics are among the main factors which attract inbound tourists to Iran. However, the lack of information and advertising, the country remained obscure to the outside world.

Rural tourism in Iran doesn't have a long history because of insufficient infrastructure and preparation. Iran definitely has the great potential for tourism especially rural and ecotourism. The only problem and difficulty are in attracting the tourists. Unspoilt nature, varied picturesque landscapes, a thousand-year-old cultural and architectural heritage, a profusion of leisure opportunities and recreation, closeness to the urban centers as well as the authentic character and rural charm, all these are the most important factors for development of rural tourism in Iran. However there are some other steps that should be taken, because Iran isn’t ready for welcome rural tourists yet: Attractions (for example development of rural tourism around a heritage site), rural infrastructure, accessibility (roads, transportation) and Building rural capacity for tourism development.

Iran have more than 60000 rural settlement that distributed across the country. The main character of rural in Iran is undoubtedly spatial diversity from the socio-cultural, physical and natural point of views over the country that provide grate potentials for developing of tourism activities. Simple review on Iranian rural distribution shows that each rural region is differ from the others. This positions In one hand providing the grate potentials for developing of tourism activities and the other hand in every rural region make possible a special kind of tourism activities. E.g some village like oraman-e takht in the west Iran compare to the abyane in central Iran and kandovan in north Iran are differ in most of indexes like architectural style, cultural characteristic, customs, clothing, life style etc. but in current situation, all of rural in Iran due to lock of systematic and adaptive planning have lots of challenges like unemploying, low income, poverty, lock of occupations, insufficient infrastructure and etc. making them unsustainable. One of the main causes is lock of adaptive planning to every region. Actually, we can just see a same plan for all of rural across the country; this fact is also true for tourism activities. While the current spatial diversity in rural arena need to the different planning systems.

B. RESEARCH METHODOLOGY

In order to select and test the sustainability assessment indicators, The research methodology draws on the work of Ko (2005) in which he developed a conceptual approach for conducting a sustainability assessment. His work is used as a basis for the research, but it is expanded on by testing the approach on two rural tourism in the Iran context. Ko (2005) proposes eight steps in the sustainability assessment procedure: Identify the systems—the human system and the natural ecosystem; Identify the main dimensions—eight dimensions for sustainable tourism development; Identify the main indicators—indicators for sustainable tourism development; Assess the scale of sustainability; Determine gradations (sectors of scale) of sustainability; Compile tourism sustainability assessment maps; Extend the barometer of tourism sustainability (BTS) and amoeba of tourism SIs (ATSI) over time; and Evaluate sustainability.

For the purpose of this study, one step has been added (data collection) and one of Ko’s steps (extend
sustainability over time) were left out, as the aim of this study is to conduct the baseline sustainability assessment and not subsequent assessments. The primary and secondary data were processed and analyzed first according to the generic set of indicators, and thereafter the rural tourism-specific indicators. The questionnaire survey data were entered into a statistical package for analysis. Two databases were set up in Microsoft Excel for each of the rural area. Data fields relate to the specific indicator they measure and the databases contain 84 fields in total that can be related to the relevant sections in the questionnaires. The results of the questionnaire surveys conducted with respondents on the rural tourism area in Iran were analyzed and the results are displayed graphically by means of AMOEBA's and BTSs.

**sustainability assessment procedure**

**Identify the systems – the human system and natural ecosystem**

Traditional Western intellectualism (dualism), whereby human beings and the natural environment are separated, and people have the right to develop or exploit the environment, has been criticized and is now changing (Mannion and Bowlby, 1992 in Ko 2005; Purdon 2003) so that alternative ideas about the relationship between human beings and the natural environment are becoming more widespread. Human beings are recognized as being part of the natural environment and not as separate entities. A rural tourism should thus contribute to the well-being of both the natural environment and the rural communities in which it is established. Therefore the process of assessing sustainability of rural tourism should focus on both the human and the natural ecosystems.

**Identify the dimensions for sustainable rural tourism development**

Although some of the researchers propose eight dimensions of sustainable rural tourism development (SRTD), in the scope of this study only four dimensions are used. The reason for using only four dimensions is to simplify the assessment procedure so that rural participants can conduct their own assessments in future. The three dimensions - economic, social and environmental, associated with the triple bottom line and the added dimension of tourism production structure (service and product quality) is used to assess the sustainability of a rural tourism. Within this framework, the economic, social and rural tourism production structured dimensions fall within the human system while the environmental dimension is contained in the natural ecosystem.

**Identify the main indicators**

According to Ko (2005) “it may not be necessary or possible to use all the indicators in all cases. Thus, it is important for a tourist destination to select a mostly appropriate group of dimensions and indicators for the assessment.”

Hence the scope of this study called for only three of Ko’s eight dimensions to be included for assessment plus the added dimension of rural assessment. Each dimension of the framework is composed of a cluster of indicators from which pertinent indicators can be chosen. The first step is to select a preliminary set of indicators which are reviewed in terms of their potential to assess rural tourism in Iran before being included in the revised or final set of indicators. The indicators need to be generic so that they can be applied in different situations and areas often with diverse features and resources.

**a) Preliminary list of sustainability indicators**

Drawing from the literature and the researcher’s experience as a rural tourism developer, a list of indicators was compiled. The list contains 42 indicators in total i.e. 14 social, 15 economic, and 13 environmental indicators. In addition to these the list also contains indicators that relate to the functionality of the rural tourism production itself. The list serves as an assessment hierarchy with its foundation being the human system and the natural ecosystem. The hierarchy expands by introducing the four dimensions, followed by the specific issues and the SIs. The list also includes the collection method for each of the indicators that need to be measured.

**b) Refined list of sustainability indicators**

Many of the indicators included on the preliminary list related to destinations and were thus not applicable to rural tourism in Iran (7 indicators). Each indicator was assessed and either adapted to suit rural tourism in Iran or excluded from the list. The list was thus refined to focus on elements that are applicable to rural tourism in Iran. Some of the indicators would still relate to issues at the rural destination level, but would have an impact on the rural space in some way. The set of generic indicators is intended to be applicable to rural tourism in any area or region and it focuses on issues that generally occur anywhere. The refined list of indicators aims to address four main issues, namely social, environmental and economic issues, and rural tourism production structure. Each of these main issues has sub-issues and specific indicators that measure their outcomes.
Determining the measurement scale of sustainability indicators

According to Ko (2005), a clear scale is required to be able to compare and evaluate different factors against each other and therefore argues that indicators needs to be transformed into some measurable form. Lee-Smith (1997) suggests making use of an ordinal or interval scale. Interval scales like Prescott-Allen’s (1997) barometer of sustainability, which uses an interval scale of 1-100, can be mapped onto the ordinal scale: bad-poor-medium-OK-good. Ko (2005) suggests measuring the perceptions of the main stakeholders in tourism (residents, tourists and experts) by making use of a 10-point interval scale.

Ko (2005) has put forward five reasons why perception studies may be justified in the development of tourism indicators:
- Existing technical and scientific data cannot always be used in tourism sustainability assessment as it is difficult to prove the contribution of tourism to the technical data;
- Perception studies have been widely employed, among others, in examining tourism impacts, the quality of service and marketing Participation of stakeholders is one of the key elements of STD;
- Perception studies are one of the most appropriate methods to assemble the different opinions of various stakeholders and to suggest average scores for their opinions. This implies that a perception study is a relatively easy mechanism to measure diverse opinions; and
- Because sustainability has an element of uncertainty, we are still not sure about the best methods to achieve SD.
- There are numerous tourism indicators that are difficult to measure numerically. Consequently, the level of perception or attitude of stakeholders can be used to provide information to measure the quality of indicators. Where technical data are unobtainable, a perception study may be a useful alternative tool for rural tourism sustainability assessment.

Determining gradations of sustainability

Grading of sustainability is necessary for ease of communication and comparing different networks on the same scale. Ko (2005) proposes four different scales of gradation ranging from a two-class scale up to a five-class scale depending on the level of detail required. The two-class scale consists of only two categories with 50 points each (sustainable or unsustainable), while the five-class scale contains five sectors with 20 points each (sustainable, potentially sustainable, intermediate, potentially unsustainable and unsustainable). The other two scales fall within the outermost scales and consist of a three-class scale with 33.3 points each, and a four-class scale with 25 points each. This study makes use of a five-class scale. A five-point scale was selected for the baseline assessment as many of the indicators will have low scores initially. A five-point scale will enable subsequent assessments to capture even slight progress, or decline on the aspect being measured. The scale is divided into the following categories:
- Sustainable: 81-100%
- Potentially sustainable: 61-80%
- Intermediate: 41-60%
- Potentially unsustainable: 21-40%
- Unsustainable: 0-20%

The next step entails representing the results in graphical form by making use of sustainability assessment maps (SAMs).

Develop tourism sustainability assessment maps

The results from the assessment can be usefully presented in graphical forms. Systemic representations (such as SAMs) illustrate the interrelations between the components of a complex system (Simon, 2003). They can be constructed collectively, hence inviting participation in debates and in decision-making.

Ko (2005), drawing on the work of Clayton & Redcliffe (1996), summarizes the purpose of SAMs as follows:
- To help identify the current situation in the community;
- To generate possible future scenarios from the situation;
- To clarify the trade-offs implicit in indicator selection;
- To make tourism concerns or issues more accessible to stakeholders;
- To assist stakeholders to define their goals and objectives;
- To make all parts of the sustainability assessment clear and explicit; and
- To serve as an educational tool.

Ko (2005) uses two different SAMs for displaying the results of an assessment:
- The barometer of tourism sustainability (BTS) is helpful when illustrating a broad level of tourism sustainability in a tourist destination, thereby providing stakeholders with an immediate picture of where they are and where they are going (Ko 2001). The BTS is the only performance scale designed to measure human
and natural ecosystem well-being together without submerging one in the other (Prescott-Allen 2001). It provides a way of systemically combining and organizing indicators so that conclusions can be drawn about both the human system and the natural ecosystem. An example of the barometer making use of hypothetical data, a 5-class scale and indicating scores of 6.4 and 3.8 for the human system and natural ecosystem respectively is given in Figure 3. The BTS uses a matrix to illustrate the relationship between the human system and the natural ecosystem. Each system’s sustainability score is plotted on an axis graded from ‘unsustainable’ to ‘sustainable’. The intersection of the plots indicates the sustainability level of the destination. It follows that the BTS can have many different combinations of sustainability levels for a tourist destination.

The second SAM that can be applied is the AMOeba of tourism sustainability indicators (ATSI). The ATSI focuses on individual indicators and thus overcomes some of the shortcomings of the BTS. AMOeba, is an acronym in the Dutch language that stands for ‘general method for ecosystem description and assessment’ (Wefering et al, 2000). Figure 2 is an ATSI illustrating the sustainability levels of individualized tourism indicators by making use of hypothetical data in which the number of tourism sustainability indicators (SIs) totals 32. Four indicators are used for each of the dimensions in the human system (political, economic, socio-cultural and service quality) and four each in the natural ecosystem (environmental policy and management, biodiversity, ecosystem quality and general environmental impacts), and a sustainability scale value is given to each indicator.

Figure 2. A hypothetical AMOeba (Source:Ko (BTS) using hypothetical data 2005: 441)

Grading for the ATSI making use of a five-class scale will have the following sectors:
Sustainable: 8.1 to 10.0
Potentially sustainable: 6.1 to 8.0
Intermediate: 4.1 to 6.0
Potentially unsustainable: 2.1 to 4.0
Unsustainable: 0.0 to 2.0
According to Ko (2005: 441) the implications of the ATSI models are as follows:
Individual levels of sustainability are presented in a diagram;
The level of sustainability is represented by quantitative data;
The quantitative data may be obtained by primary or secondary sources;
The sector of the sustainability scale is clearly defined with numerical sources;
Four types of sustainability gradations (ATSI1 –4) are suggested;
In the process of data gathering and analysis, a holistic (systemic) and reductionist approach are adopted; and
The larger the AMOeba, the more sustainable is the system, while the smaller the AMOeba the less sustainable the system.”

The benefit of models like the BTS and ATSI is that when uniform indicators are used, the statistical results of different rural area can be compared to determine the difference between them. The next step in the assessment procedure is to extend the BTS and ATSI over time. The scope and time-frame of this study did not allow for the models to be extended over time and only a one-off assessment will be conducted. Ongoing monitoring of the rural areas' progress can be done by periodically compiling the BTS and ATSI models. After compiling the models repeatedly, an assessment of the results will enable an overall evaluation of the sustainability of the rural area.
Evaluation of sustainability assessments

Evaluation of the results of the assessment is important and consideration should be given to the 'evaluative' component of the research process (Ko, 2005). The process can either be evaluated technically, in terms of the efficiency and effectiveness of the data, or in terms of its usefulness to stakeholders. The models can be presented to stakeholders to determine whether they help with decision-making and to warn stakeholders of possible negative impacts. While the BTS and ATSI models are useful in comparing different rural areas in general, every rural destination has elements that are rurally-specific. Because rural destinations are established under different circumstances, in different locations and with different spatial scales, a set of rural destination-specific indicators needs to be developed to deal with these differences.

Data analysis and processing

The following sections document the processed results of the fieldwork. The results are based on the monitoring and assessing tool that has been developed and they are organized according to themes. The results show that the Iran's rural areas scored relatively low in the sustainability assessment. However, this exercise serves only as a baseline assessment as some indicators could not be measured. The assessment should be conducted on an annual basis and comparisons made with previous years. The results of the questionnaire surveys conducted with respondents on the rural tourism area in Iran were analyzed and the results are displayed graphically by means of AMOEBAs and BTSs.

This study contains the final indicator scores for the rural tourism area in Iran. Each indicator is given a number that corresponds to the number in the AMOEBAs. The scores of individual indicators were plotted on the AMOEBA to represent the results visually. The following sections present these findings.

Figure 4 is the AMOEBA for the rural tourism area in Iran. Although the rural tourism area scored high on a few of the indicators, scores are generally low. A number of indicators could not be measured as part of the baseline as they relate to growth of the rural tourism products and individual businesses on it.

The AMOEBA shows that much still has to be done in terms of sustainability on the rural tourism area in Iran. An area of concern in relation to the social issues is the number of participants involved in community upliftment (SI3). With regard to economic indicators, many participants indicated that their businesses are seasonal (SI12), meaning that there are less visitors during certain periods in the year. The rural tourism production scored low on most of the environmental indicators with few participants making use of environmentally friendly technologies (SI19-22 and SI25-27).

Figure 4. AMOEBA for the rural tourism area in Iran.
The fact that only one participant (listed as a protected area) indicated that rural tourism is the main source of biodiversity conservation shows that tourism development is still needed in many of these protected areas. Most of the conservancies in the rural tourism destinations in Iran still rely on hunting concessions as a main source of income. As the rural tourism destinations were still being developed at the time the survey was conducted, the rural tourism production structure functionality indicators (SI30-35) could not be measured. This accounts for the absence of scores in this part of the assessment.

Figure 5 is the BTS for the rural tourism destinations in Iran. The rural tourism scored 2.3 and 2.1 on the human system and the ecosystem dimensions respectively. This graphically illustrates the overall (un)sustainability of the rural tourism in the two dimensions. It is clear that both dimensions call for attention from the rural tourism forum (RF) if the rural tourism is to be sustainable. This BTS serves as a baseline assessment and improvements will hopefully manifest in subsequent assessments.

CONCLUSION AND RECOMMENDATIONS

Rural Tourism development is a development tool that is increasingly employed for Developing rural area and local economies in Iran. Rural Tourism development can also play an important part in fostering community participation in the rural area and contribute towards conservation of the natural environment. It is crucial, however, that the activities of individual tourism operators and this type of tourism be evaluated for sustainability. This research developed a set of indicators that can be used to monitor rural tourism development in any area, with special consideration given to the Iran context. It also investigated a method of developing rural tourism-specific indicators in a participative approach by making use of the PSR framework. The results are scored on the barometer of rural tourism sustainability and presented graphically by making use of sustainability assessment maps.

The research serves as a baseline assessment for sustainability in the case study of the rural area in Iran and subsequent assessments can provide useful information on progress made in terms of the Sustainability issues in these rural areas. The results of the baseline assessment indicate that rural tourism in Iran still have much to do in terms of becoming sustainable.

The rural tourism concept has the potential to contribute significantly to community development, local economic development and conservation, especially if done by making use of a bottom-up approach. Communities are involved in the actual development of a rural tourism and its management once developed. This encourages true participation and could contribute to positive relationships between industry players and host communities.

Recommendations

The time constraints on this study prohibited assessments being extended over time. Subsequent research can be conducted to determine whether the methods identified in this study produce the desired results when extended over time.
The methods should also be introduced to RTDs and their feedback should be obtained about the usefulness of the data and information acquired by the surveys. Aspects that could not be covered by this study, like the community and customer-exit surveys, can be presented to RTDs in order to determine if they add value to the existing assessment procedure.

The assessment method for generic SIs can be quite technical and may pose difficulties for some RTDs. The procedure can be simplified by making use of fewer indicators. The RTDscan use the list identified in this study as a compendium from which to select indicators that they feel are the key elements to monitor on their rural tourism. By making use of a two- or three-class interval scale, analyses of the data can also be simplified.

Furthermore, research can be conducted in employing geographic information systems b (GIS) to display results spatially. Because the location of all the participants in this study was surveyed with a global positioning system (GPS) instrument, the data can be spatially oriented. By using raster models, the results can be displayed visually by means of GIS.

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