An evaluation of sustainable tourism in developing Asian countries by using STM model

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Abstract

Sustainable tourism, sustainable tourism development and sustainable principles are, within the framework of a sustainable development. The main concepts both tourism researchers and practitioners are trying to understand, develop, integrate and apply. Tourism planning processes have been analyzed, sustainable strategies identified and optimal goals defined. The theoretical discussion has progressed considerably. The problem is that the theoretical discussion seems to be too far ahead and too abstract in comparison to the development found on an operational level. Given the complexity of the issues surrounding the concept of sustainable tourism, the current manuscript tries to provide a unified methodology to assess tourism sustainability, based on a number of quantitative indicators. The proposed methodological framework (Sustainable Tourism Model- STM) will provide a number of benchmarks against which the sustainability of tourism activities in various countries can be assessed. The methodology used includes the following steps: identification of the dimensions (economic, socio-ecologic, infrastructure) and indicators, method of scaling, and chart representation. To illustrate the usefulness of the STM, tourism sustainability is assessed in developing Asian countries i.e., India, Malaysia and Thailand. The preliminary results show that a similar level of tourism activity across countries might induce different economic benefits and might have different consequences for the socio-ecological environment. Therefore, the STM is a useful tool to assess the heterogeneity of developing countries and detect the main problems each country faces in their tourism development strategy.

Key words: Sustainable development; Sustainable tourism; STM model; Asian countries

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1. Introduction

The selection of a core set of indicators for sustainable development of tourism necessarily depends on the understanding of the two concepts: sustainable development and sustainable tourism. Various ways to tackle the problems of interpretation of these and similar concepts have been described in the literature reviewed within this project. This discussion is especially important as the meaning or definition of the word sustainability very much depend on the professional background, the general knowledge and also the ethical and ideological orientation of the different authors. As a starting point for the discussion, some examples of the proposals or definition put forward by different authors will be given in the following.

1.1 Sustainable development

The concept "sustainable development" was widely accepted by the international community after the presentation in the Brundtland Report (Our Common Future) in 1987. It was described as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Although the wording is easy to understand, it has been criticized for being difficult to apply for more practical planning purposes within different sectors. In the handbook on national accounting (2003) the capital approach of sustainable development is discussed. Within this discussion a interpretation of sustainable development from a capital standpoint is as follows "Sustainable development is development that ensures non-declining per capita national wealth by replacing or conserving the sources of that wealth; that is, stocks of produced, human, social and natural capital". The concepts of weak and strong sustainability are also discussed from the point of view of the natural capital substitutability.

The definition of the concept environment has been discussed by Holden (2000). The human environment is understood as consisting of the sum of external conditions, including physical, social, cultural, economic, political dimensions. Furthermore, this book includes a discussion about the various ways to interpret "sustainability" and "sustainable tourism". The latter can be interpreted as the sustaining of tourism at a specific destination. On the other hand tourism may also be looked upon as the means to achieve a "sustainable development" within a much

wider region, including e.g. conservation of animals and landscapes due to tourist's preferences and expenditures.

Bramwell (2004) argues that sustainable development should be looked upon as "a socially constructed and contested concept that reflects the interests of those involved." This means that the idea of sustainability can take on different meanings, reflecting various economic or ethical positions. Nevertheless, the author regards the term sustainability as a useful concept, more or less as the ideas of liberty, democracy or social justice, which all have a generally understood meaning although there are many differences of opinion on the more precise definitions of the words. Referring to other sources (Turner 1993), Bramwell also seems to accept the possibility to speak of different levels of sustainability: Very strong, strong, weak and very weak sustainability.

The interpretation of the concept sustainable development has also been discussed by Hunter (2002). The author states that "it is now widely accepted that any quest for a universally applicable definition of sustainable development (SD) is not likely to be successful….." Referring to Turner (1994), the author describes the four levels of sustainability, or "sustainability positions". According to Hunter (2002) a very weak sustainability position represents: an anthropocentric and utilitarian point of view, including the opinion that "infinite substitution (is) possible between natural and human-made capital….." The contrary opinion, represented by the very strong sustainability position, is described as "bioethical and eco-centric", arguing for a minimized utilization of natural resources, for the existence of intrinsic values in nature and for a "reduced human population." The weak sustainability position is described as a more moderate but still anthropocentric and utilitarian view, accepting that "an infinite substitution between natural and human-made capital" is not possible. Finally, the strong sustainability position is understood as a resource preservationist perspective, where the maintenance of functional ecosystems is regarded as a primary value" above the secondary value through resource utilization".

So it seems, that even if no agreement on a common definition of the concept sustainable development can be found, there exists an understanding of the need for changes and of the direction of these changes to arrive at a more sustainable future. For the present project, an interpretation of the concept sustainable development, mainly in agreement with the weak position, has been used. It is probable that a strong sustainability position is more widely held

within the environmental sciences today. On the other hand, the weak sustainability position is probably more easily accepted by the various actors within the tourism sector.

1.2 Sustainable tourism

After the almost global acceptance of the expression" sustainable development", although it might have been in the very general way, as mentioned above and described by Bramwell (2004), there has been a development within various sectors or academic fields trying to incorporate the concept of sustainability into the understanding and practice of the different sectors or areas. This is true also for tourism. But as could be expected, the lack of a more precise definition of the concept sustainability, means that there is a similar confusion about what should be meant by" sustainable tourism".

According to McCool & Moisey (2001), "the meanings attached to the expression "sustainable tourism" have varied significantly, with little apparent consensus among authors and government institutions." The authors state that sustainable tourism can be regarded as a "guiding fiction", that is, an expression which functions and is valuable in general discussions, as long as the definition is vague. However, when more precise definitions are needed to assist in practical actions, there will be no consensus between different interest groups. In the case of sustainable tourism, the authors have identified three different interpretations of the concept, which they have found in the literature. In the first case the main point is "Sustaining tourism: how to maintain tourism industry businesses over a long time frame". The second case relates to the environment of the receiving community, expressed as "Sustainable tourism: a kinder, gentler form of tourism that is generally small in scale, sensitive to cultural and environmental impact and respects the involvement of local people in policy decisions". In the third case "What should tourism sustain? Tourism as a tool for development", tourism is rather looked upon as a method "to protect the natural and social capital upon which the industry is built.

It could be argued that economically "sustainable tourism" (the first case above) will only be achieved if the second type of "sustainable tourism" can be developed. In a long perspective (a century or perhaps less) the same could be true for the third case, that is, if the strong position of sustainability, as understood by Hunter (2002), is accepted. More often, however, only one type of sustainable tourism is dominating the interest and understanding of the

audience. To clarify some of the interrelations between these different types of tourism sustainability, it should be useful to keep in mind some specific aspects of the sector. Tourism depend on environmental factors, be it natural environments such as beaches, sun, mountains, wild animals etc., built up environments such as historical monuments, ancient cities or interesting modern architecture, or cultural and social environments, food, language, art, music etc. It is now well known that tourism destination areas are very much influenced by tourism itself, even to the extent that a specific destination may lose its attraction for visitors. This phenomenon is sometimes called the Butler sequence (Weaver and Lawton, 2002). As examples can be mentioned overcrowded beaches, noise disturbance, unhealthy water for swimming, fishing villages being changed to new cities of hotels and restaurants etc. Although actions have been taken in some places to counteract this situation, the problem itself continues. At the same time, the social environment may be totally changed for the residential population. Although the economic effects for the society may be regarded as positive, not everyone can participate in this development and the balance of the overall welfare for the residents may be questioned. So far sustainability of the tourism economy (the first type mentioned above) does not seem to be threatened, but the social sustainability of the area as well as the sustainability of use of natural resources and environment may have been changed in a negative direction.

Other examples of how the concept tourism sustainability has been treated can be mentioned. Johnson (2002) has suggested some guidelines to achieve a sustainable development of tourism. These include two examples mainly related to the physical environment (no. 2 and 4) and four proposals directed more to the social and cultural aspects. The guidelines are:

1. Integrate activity, long term planning and partnership development
2. Maintain and develop diversity
3. Support local economies
4. Use resources sustainable
5. Involve local communities, stakeholders and public
6. Research, share learning and experience.

As in the discussions of the concept of sustainable development, it seems that even if a precise dentition of “sustainable tourism” is difficult to agree upon, a common understanding of the general direction of necessary changes may exist.

Finally it should also be stressed that there is always a need of additional information to a specific set of indicators. For deeper or more serious analyses of a situation, other aspects than those covered by the available indicators are required. This insight has been formulated e.g. by Tisdell and Wen (2001) as follows: "…many simple tests for sustainability of tourism are found to be wanting. None seem to be adequate indicators of the sustainability of tourism. They must, at least be supplemented by deeper analysis to decide whether a tourist development is going to show long-term sustainability."

2. Objectives of the research study

The objectives of this research paper is based on the methodological work carried out in the field of tourism and environmental research to put together a methodological framework for the measurement of the sustainable development of tourism and to test a selected number of indicators described in the manual. The results of the study provide recommendations on how to compile statistics on tourism sustainability and concentrate specifically on the definition of sustainable development in the terms of tourism statistics. Both the positive and negative impacts of tourism in this field are considered.

3. Sustainable tourism indicators

Most studies assessing tourism activities often deal with one aspect of tourism. For instance, the economic impact of tourism activities is usually estimated on the basis of data on number of arrivals, receipt per tourist, average length of stay and other economic indicators. In order to correctly estimate tourism activity and tourism's impact on national economies, some studies have developed tourism account methodologies (e.g. Frechtling, 1999). Other studies have focused on the use of tourism resources (natural, cultural, etc). However, a growing literature deals with the sustainability assessment, trying to develop indicators and provide methodologies for sustainable tourism. For instance, Miller (2001) focuses on the development of indicators measuring tourism sustainability. Unlike many studies that cover only the physical and human environment, Miller (2000) presents several indicators covering all aspects of sustainability: environmental issues (physical and human), employment, financial leakages and customer's aspects (satisfaction levels, etc.).

Another notable attempt to create a comprehensive methodology to assess sustainable tourism is found in Ko (2004). After a review of the existing literature, he argues that "methods of systemic sustainability assessment are not currently used in tourism" (Ko 2004:4). He finds that most studies on sustainable tourism development are descriptive, based on qualitative data and subjective in their conclusions, thus lacking a rigorous methodology to assess sustainability issues in the tourism sector. After identifying this gap in the literature, he develops a conceptual framework for tourism sustainability assessment based on eight dimensions: political, economic, socio-cultural, production- related aspects, environmental impact, ecosystem quality, biodiversity and environmental policies. Each dimension is assessed on the basis of several quantitative and qualitative indicators which are scaled and clustered to assess the sustainability of a tourist destination.

The current analysis follows the same objective as Ko (2004), notably to develop a quantified methodology to assess tourism sustainability. However, the current paper departs in a number of respects from the methodology outlined in Ko (2004). Firstly, Ko (2004) argues that the issues and concerns related to sustainable tourism vary from one tourism destination to another. Hence, he suggests that dimensions, indicators and data gathering methods could vary from one tourist destination to another, in order to adapt the methodology to the specific conditions of each tourist destination. While this methodology has its merits, it limits the ability to compare results across tourist destinations. To address this gap, our methodology is intended to create sustainable tourism benchmarks based on a generally applicable and consistent methodology that allows comparability of results across tourist destinations. Secondly, Ko (2004) works with hypothetical data to give an illustration of his methodology. In the current paper, the STM is tested using real data from three case studies. This allows us to show the usefulness of such an approach in identifying policy-relevant indicators and making policy recommendations to increase the sustainability of the tourism sector in developing countries. Thirdly, unlike previous studies, our methodology covers a wide range of tourism-related dimensions: economic sustainability (tourism assets, tourism activity, linkages and leakage effects), the role of overall infrastructure and environmental and social sustainability.

Our methodology has also several limitations. The STM does not account for quality considerations, nor does it at this stage include any qualitative data (perception surveys, questionnaires, etc.). Also, another specificity of our approach is that economic sustainability

is broken down into several dimensions whereas the environmental and social aspects are bundled together in socio-ecological sustainability. However, the fact that each detailed indicator has its own score allows the STM users to combine or separate the various sustainability dimensions in different ways.

4. Methodological Framework

The main reason for a comprehensive methodology aimed at improving the prospects for sustainable tourism in developing countries stems from the growing importance of tourism activity in developing countries. Tourism has already emerged as one of the world's most important socio-economic sectors, and has been steadily expanding at an average rate of about 4-5 per cent annually. The combination of domestic and international tourism is now acknowledged as comprising the world's "largest industry". In 1995, tourism globally generated an estimated US$3.4 trillion in gross output, contributing 10.9 per cent of the world's gross domestic product (GDP), creating employment for about 212 million people and producing $637 billion in government tax revenues.

Developing countries are receiving an increasing number of international tourists as they improve transportation access, develop tourist attractions, facilities and services and become known as desirable tourist destinations. Their share in the international tourist arrivals2 grew up from 28 per cent in 1990 to 31 per cent in 1997. Moreover for developing countries, this tourism activity constitutes a large fraction of total export receipts and the share in GDP can rise above 40 per cent in some Caribbean countries. Moreover, unlike many primary products whose share in world consumption might decrease, in the case of tourism, there is a favourable income elasticity of demand. With increasing incomes, tourist expenditures increase at a faster rate than income. Moreover, even though the tourism sector has been severely hit by a number of crises (e.g. international terrorism, SARS, natural disasters), the standard deviation of growth rates of 'export value' for several primary commodities and tourism shows that tourism revenue is less volatile than commodity revenues (Maloney and Montes Rojas, 2001). Finally, tourism activities bring much-needed foreign exchange which allows developing countries to finance the import of capital goods and raw materials required for the economic development and diversification of their economies. Despite such considerable potential, some economies have not been able to take advantage of the growth in tourism activity. For example, tourist expenditures in Latin America have risen by only 0.51

per cent annually for the last 20 years; the region has dramatically lost market shares and the apparent expenditure per visitor appears to be declining over time (Maloney and Montes Rojas, 2001).

Major sustainability problems have emerged in some other countries as well. Often, on islands such as Tahiti or in the Caribbean, increased tourist flows create shortages that have negative effects on the local population (e.g. increases in food prices, lodging problems, water supply, etc.). Moreover, the local population does not always benefit from tourism revenues. Previous research has shown that a large share of the price that tourists pay for their holidays goes to the multinational companies that own the airlines and run the hotels. This gap between the realities and potential in sustainable tourism needs a methodology that could cover the complex issues described above. Moreover, such methodology would need to develop some benchmarks in order to allow developing countries that are dependent on the tourism to improve the sustainability of the sector.

5. The Sustainable Tourism Measurement (STM) Model

The objective of the STM is two-fold. Firstly, this methodology should be able to detect the sustainability problems in a tourism destination. Secondly, using benchmarks and policy-relevant indicators, the methodology should enable policymakers to make informed decisions and improve the prospects for sustainable tourism development in their countries. The following steps were followed to construct STM. First, seven key dimensions were singled out, namely:

1. Tourism assets;
2. Tourism activity;
3. Tourism-related linkages;
4. Tourism-related leakages;
5. Environmental and social sustainability; and
6. Overall infrastructure
7. Attractiveness

Second, once these dimensions defined, the next step was to find appropriate indicators that could capture essential aspects of each dimension. Third, the indicators were scaled to allow cross-country comparisons. Fourth, the indicators were placed on a conceptual chart that frames the specific issues addressed by the STM.

The STM framework is based on several dimensions (assets, activity, linkages, leakages, sustainability, infrastructure and attractiveness) and the complex interaction between these interactions (see arrows A-G). Such a framework will make it possible to create a descriptive map of the score for individual countries on each dimension (assets, linkages, etc.), but will also allow a comparison of different countries in different areas. Moreover, the framework allows us to address specific tourism-related issues in developing countries by analysing various linkages between specific areas. For instance, as Figure 1 shows, several key connected issues could be addressed using the STM model:

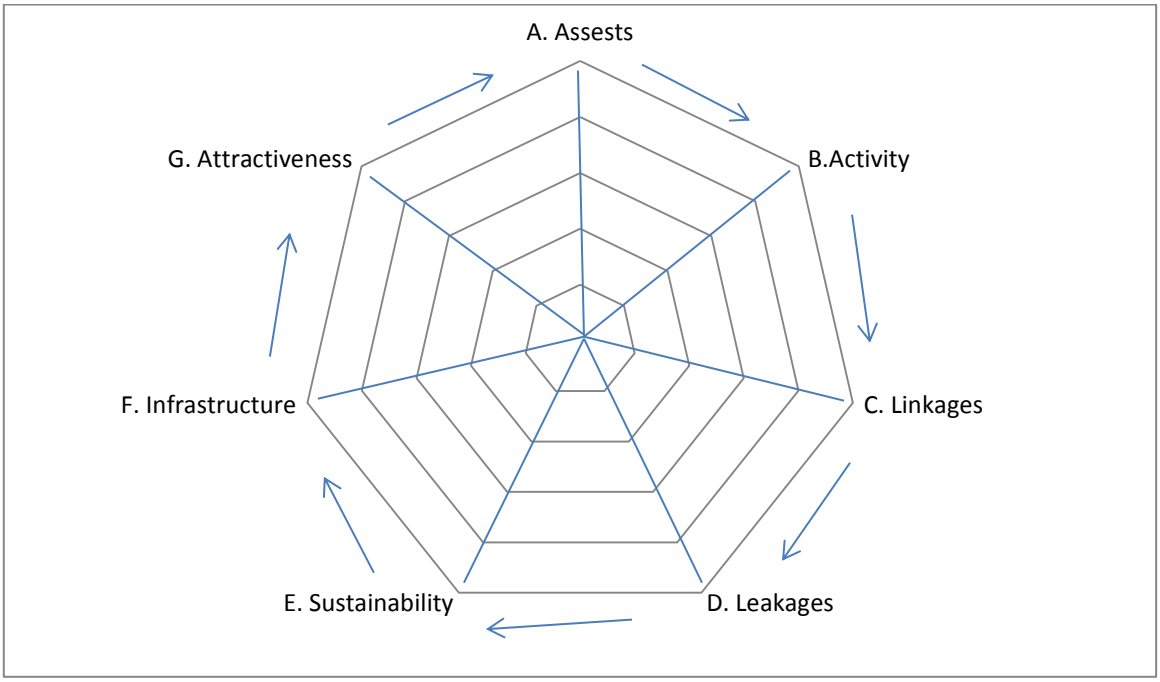

Figure 1: The conceptual structure of the STM model

A: Assets-activity: Is the country able to increase the tourism value?

The link between assets and activity relates to a country's ability to exploit its tourism asset. If the tourism activity indicators show lower values than the ones for tourism assets, this could indicate that the country does not attract sufficient tourists or that expenditure per tourist is low.

B: Activity-linkages: How are linkages with the all economy?

This connection assesses the capacity of the tourism sector to contribute to the activity of other economic sectors. It could also indicate if the action needs to be taken to promote increased positive spill-over effects to other domestic economic sectors.

C: Linkages-leakages: Could the tourism be more beneficial to the local economy?

By examining the interaction between linkages and leakages, the STM could detect ways in which developing countries could not only identify leakages in tourism activity, which are generated by tour operators, hotels owners, other foreign economic actors, imported goods, but also ways to transform them into linkages with the local economies.

D: Activity-sustainability: Are tourism activities sustainable?

As mentioned above, this issue is related to the social and environmental capacity to develop tourism activity. For the environmental issue there are two aspects: the current state of the environment and the environmental impact of tourism activity. The social aspect captures the impact of tourism activity on employment, job quality and tax revenues for local communities.

E: Activity-infrastructure: Is the infrastructure sufficiently developed to support tourism development?

This issue is related to the ability of the existing infrastructure to respond to tourism demand. It concerns tourism-related infrastructures (hotels, restaurants, etc.), transport and communication infrastructures, as well as other basic infrastructures.

F: Attractiveness-Activity: Is the country sufficiently attractive to enhance tourism activity?

Attractiveness of tourism destinations is a key factor in choosing a destination by tourists. Therefore, a higher attractiveness index would have a positive impact on tourism activity.

6. Results and discussion: three case studies of developing Asian countries in India, Malaysia and Thailand

The STM methodology has been evaluated on three Asian developing countries: India, Malaysia and Thailand. The applied STM methodology can be best presented as a multidimensional graph (see Figure 2). All indicators have been scaled from 0 to 100, with maximum values being desirable from a policy perspective. Because of data constraints; we could not include all the indicators presented above in our methodology, especially those concerning the leakages field. The STM allows us to analyse the issues raised above.

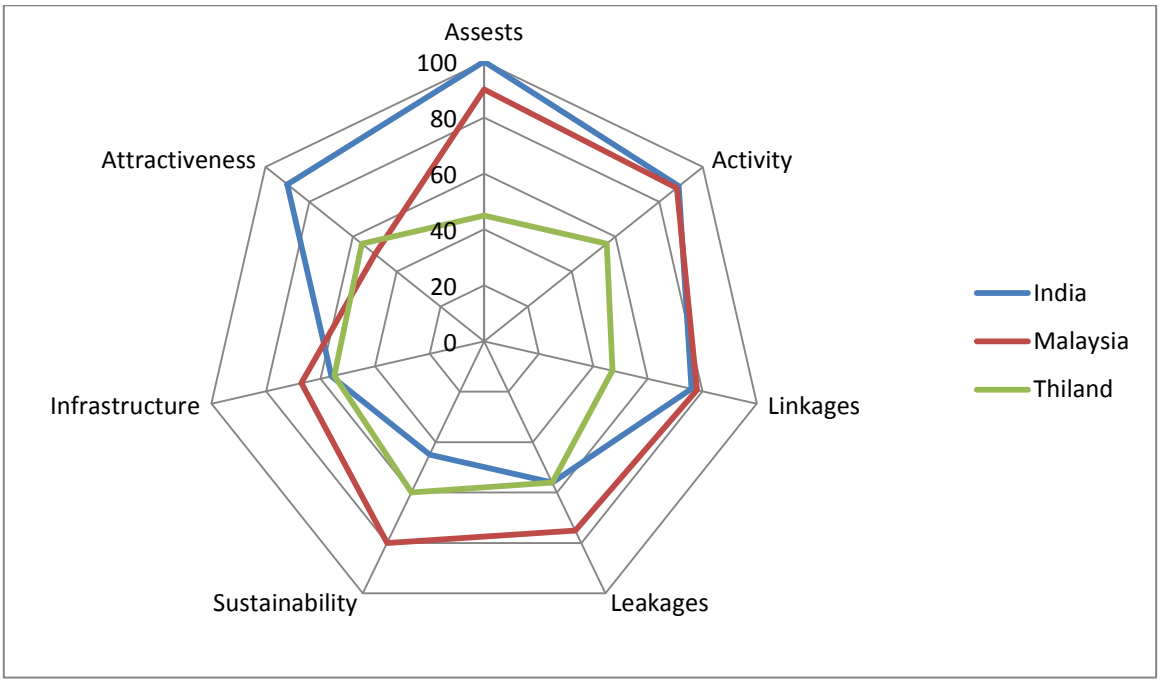

Figure 2: The STM network chart

Assets-Activity issues

India has the highest score for tourist assets, whereas Malaysia and Thailand rank far below. However, despite lower scores for tourist assets, the scores for tourism activity are very close

for all three countries. The STM suggests that Malaysia and Thailand appear to be more efficient in exploiting their assets than India. A closer look at each of the indicators that were aggregated the STM chart reveals other important findings. For instance, Malaysia attracted the largest number of tourists but spends relatively little per tourist. In contrast, Thailand seems to be oriented towards high value tourism. Both Malaysia and Thailand score low on the length of time tourists spend in these countries. Finally, India does not have good score on the number of tourists but achieves a good score on revenues per tourist, not necessarily due to high value tourism but because tourists tend to stay longer in the country.

These indicators suggest that Malaysia needs to raise expenditure per tourist and length of stay, as well as develop tourist assets that attract special interest tourists, leading to a higher value-added tourism. Similarly, the STM framework suggests that Thailand needs to take action aimed at raising the length of stay of tourists by providing for instance new attractions or special events as part of tourist packages. On the other hand, India would need to improve its score on the number of tourists, by more actively using new marketing techniques such as the Internet

Activity-linkages: What are the linkages with the overall economy?

The STM framework suggests that tourism in India and Thailand creates fewer linkages in the economy relatively to the amount of expenses by tourists. This stands in contrast to the Malaysian case, where despite the lowest score for tourism activity, the biggest score for linkages is recorded. A more detailed analysis could indicate which sectors need to be encouraged to expand or create new products. Establishing stronger inter-sector linkages will typically require special analysis and specific programmes. When the potential linkages are identified, specific programmes to strengthen linkages can be formulated and applied. For example, certain food items of interest to the tourism sector may exist in the country but production may need to be expanded to ensure a steady source of supply, transport from the production area to the tourism enterprises improved and marketing mechanisms adopted. Some types of food items may need to be improved or modified before they are acceptable for use by tourism enterprises. Farmers may require technical and financial assistance to improve and expand their production. For manufactured items, incentives may need to be provided to manufacturers to produce needed items and standards adopted to ensure that the

items are suitable for use in tourism. Craft production may require better organization and the implementation of quality standards and marketing facilities.

Linkages-leakages: Could the tourism be more beneficial to the local economy?

The STM framework pointed out some interesting cross-country comparisons with regard to linkages and leakages generated by the tourism sector. Malaysia, which had the best score for linkages, has the worst score for leakages. This apparent paradox may be explained by the fact that a large part of the tourism-related activities generated in other sectors needs to import most of their input to supply the required products by the tourism sector. On the contrary, tourism in India provides "relatively" less leakages but this activity is conducive to a large extent to linkages with the local economy. Several policy recommendations to contain leakages could be advanced. To reduce leakages generated by imports of goods and services, developing countries need to encourage investment by local entrepreneurs to improve their existing products and to diversify into new products. To reduce internal financial leakages, the country can impose a limitation of foreign capital for some tourism-related projects and activities where financial leakages are important. Similarly, leakages generated by foreign management personnel could be reduced if such skills already exist in the country. Policies should also aim to provide incentives to re-invest profits that otherwise would be repatriated or invested abroad.

Activity-sustainability: Are tourism activities sustainable?

With regard to tourism sustainability, Thailand and Malaysia present the most problematic situation, the former on the human component, and the latter in the environmental component. The good score for India in the sustainability segment confirms that an increase in the number of tourists would not be detrimental to tourism sustainability. Improvements in tourism sustainability can be achieved through a number of specific actions. Puppim de Oliveira (2003) presents four types of environmental actions: building institutional capacity; establishment of protected areas; investment in environmental projects (sanitation, water, waste management); and control of private actions (e.g. land mostly owned by the state, control number of tourists and new tourism investments). Strategies for managing those impacts are also discussed in detail by WTO (1997). At the policy level, development plans, which include tourism and which set out zones for tourist use, should determine rights of

access to areas and consider what sort of activities are suitable for the area. Economic mechanisms such as subsidies could be used to encourage more sustainable practices and provide incomes to protect conservation of the environment. For the development of infrastructures, projects should use minimal impact construction techniques, native species for landscaping and appropriate architecture styles. Infrastructure development should also take into account recycling, waste minimization and energy efficiency programmes.

Activity-Infrastructure: Is the infrastructure sufficiently developed to support tourism development?

Looking at the infrastructure in the STM chart, India seems to be lagging behind in terms of infrastructure potential. In terms of hotel rooms for instance, the STM framework suggests a considerable gap between tourism activity and the number of tourists. Thailand also needs to improve its supply capacity of tourism services, mostly in terms of tourism infrastructure. Based on the STM indicators, Malaysia seems to have more adequate infrastructure to support tourism development than India and Thailand.

Activity-Attractiveness: Is the country sufficiently attractive to enhance tourism development?

The most attractive destination among the three countries examined is Thailand. The low score for attractiveness in India could explain the weaker score in activity. This lack of attractiveness in India, and to a lesser extent in Malaysia, is mainly due to the lower score levels on safety and civil liberties indicators. Furthermore, in India a detrimental factor for tourism attractiveness is the weaker score on quality of governance.

7. Conclusions

Based on the extent to which it has been quantified and discussed in cross-country analyses, the concept of sustainable tourism is still considered to be in its infancy. The current manuscript tried to fill this gap by providing a simple methodology to assess tourism sustainability, based on a number of quantitative indicators. The proposed methodological framework would allow the creation of a comprehensive database against which the sustainability of tourism activities in various countries can be assessed. The STM

methodology developed in this paper relies on quantitative indicators that are policy-relevant and, as such, it is hoped that it will become a useful tool for decision-makers, researchers and businesses involved in tourism activities in developing countries.

The usefulness of the STM methodology is illustrated by using three case studies: India, Malaysia and Thailand. While the STM methodology used in this paper may need further refinement and elaboration, the results and findings obtained suggest that the STM can become a valuable tool for researchers and policymakers involved the assessment and design of sustainable tourism strategies. This illustration shows us that an equal level of tourism activity might induce different sorts of improvements and might have different consequences on development. Some countries therefore need to increase the number of tourists' arrivals, while others have to extend length of stay or receipts per tourists. Furthermore, the STM can be extended to other fields linked to tourism activity, in particular by expanding the analysis of leakages.

The main advantage in following this methodology is that grouping many countries into one analytical toolbox is relevant and does not remove the heterogeneity aspect, contrary to Ko (2004) argument. Indeed, the heterogeneity of developing countries is useful to detect the main problems of each country in their tourism activity. Therefore, The STM could form a solid basis for a rigorous analysis that could shed further light on the main problems detected by conducting country specific studies by following a consistent methodology that allows comparability of results across tourist destinations.

Acknowledgements

The present research work is financially supported by the University Grant Commission (UGC), New Delhi under All India Senior Research Fellowship scheme. I am grateful to the concern agencies and institutions for providing information on tourism planning and development initiatives and also to the faculty of Delhi School of Economics, University of Delhi for their kind and generous support in this work. Finally, my heartfelt thank to my mentor Dr. Lalita Rana for her constructive suggestions in this regards.

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