

Measuring Sustainable Tourism (MST): Developing a statistical framework for sustainable tourism

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Discussion Paper #1

FRAMING SUSTAINABLE TOURISM

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1. Background

The measurement of sustainable tourism through a statistical framework requires a common understanding of sustainable tourism. A common understanding is not a means by which to force the same measures on everyone. Rather, there needs to be a recognition that to progress towards sustainable tourism outcomes, and sustainable development more broadly, it will be necessary to involve numerous stakeholders from many fields each with different perspective. The capacity to involve people will be limited if there is a lack of common understanding of the issues to be faced and this is particularly so when it concerns the interpretation of data and information. The lack of a common language and terminology, the use of different definitions and measurement scopes can be a real barrier in moving towards effective outcomes.

The MST initiative generally is aimed at developing a common language around measurement but to do so, a first objective is reaching a common understanding of sustainable tourism to serve as a basis for further discussion. This discussion paper is intended to provide a starting point for the discussion of a common understanding of sustainable tourism for measurement purposes, building on the long history of research and discussion on this topic.

2. A short history of sustainable tourism

Defining sustainable tourism

Sustainable tourism has been a topic of discussion in tourism circles since the early 1990s. The interest in sustainable tourism has been driven by two key factors, first the energizing influence of the 1987 Brundtland Commission report “Our Common Future” and the subsequent 1992 Rio Summit on sustainable development. While the ideas around sustainable development had been under discussion for some time prior, this work and the high profile engagement, placed sustainable development clearly on the political “map”. The most widely used definition of sustainable development is that advanced in the Brundtland report, i.e. development that:

“meets the needs of the present without compromising the ability of future generations to meet their own needs” (Our Common Future, 1987)

The second key factor has been the tremendous growth in tourism activity in the past 20-30 years. This growth has fuelled two lines of interest in the sustainable tourism space. First, the reality that in contributing a larger share of economic activity in most countries, tourism activity was contributing more to the use of environmental resources and its impact on the natural environment was increasingly significant. Second, the idea that tourism activity might provide a path by which lower income countries and region might improve their standard of living.

These two factors come together in the definition of sustainable tourism published by UNEP and UNWTO in 2005 – see Box 1 below. The definition makes clear that sustainable tourism is a multi-faceted concept and, depending on one's perspective, different aspects and areas of focus will be relevant.

Box 1: Defining sustainable tourism

UNWTO definition:

Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.

Thus, sustainable tourism should:

1. Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural resources and biodiversity.
2. Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
3. Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary.

Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

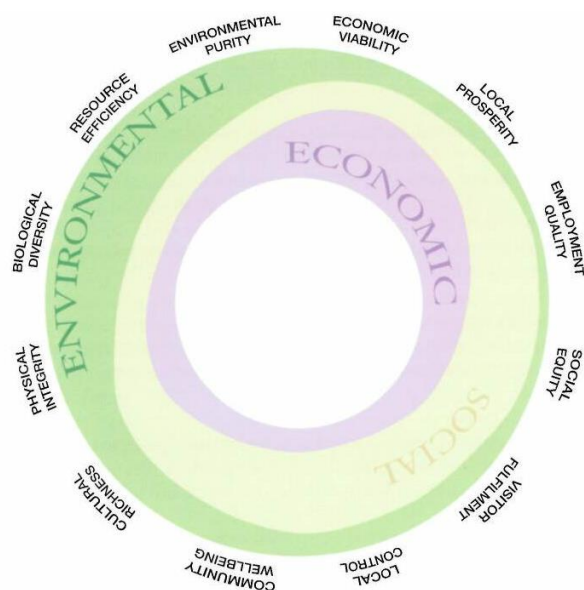
Source: UNEP/UNWTO 2005, Making Tourism More Sustainable: A Guide for Policy Makers, Box 1.1

Sustainable tourism policy themes

The work by UNEP and UNWTO also made clear that there are also a range of key global challenges, principles and policy themes relevant to sustainable tourism. Challenges highlighted in the 2005 report included climate change, poverty alleviation, support to conservation of natural resources and health, safety and security. Principles described included the polluter pays principle, the precautionary principle, the need to promote sustainable consumption and to consider the life cycle of products and services and the benefit of undertaking continuous monitoring using indicators that relate to sustainability goals.

The range of policy areas is summarized in Box 2. Clearly there is a wide series of connections that can be drawn between sustainable tourism and economic, environmental and social concerns.

Figure 1. Relationship between policy areas and the pillars of sustainability



source: UNEP/UNWTO (2005)

Box 2: Policy themes for sustainable tourism

1. Economic viability	7. Community Wellbeing
2. Local prosperity	8. Cultural Richness
3. Employment quality	9. Physical Integrity
4. Social Equity	10. Biological Diversity
5. Visitor Fulfillment	11. Resource Efficiency
6. Local Control	12. Environmental Purity
Source: UNEP/UNWTO 2005, Making Tourism More Sustainable: A Guide for Policy Makers	

Measuring sustainable tourism

From a measurement perspective, the main contribution in the area of sustainable tourism from the UNWTO has been the ongoing work to develop relevant sets of indicators that respond to policy needs. The most significant work in this respect was the 2004 UNWTO Guidebook for Indicators of Sustainable Development for Tourism Destinations. Building on earlier work, the Guidebook for Indicators identified a very large number of indicators (over 700) across 13 issues. These and other initiatives worldwide have advocated the use and implementation of indicators, and the general principle of continuous monitoring, as a structural part of sustainable tourism development.

An exemplar project in this sense has been the establishment of UNWTO's International Network of Sustainable Tourism Observatories (INSTO) which brings together tourism observatories from around the world. Tourism observatories have been established in many destinations with the aim to better understand, monitor and advise on policy towards more sustainable development of tourism. The design, implementation and analysis of indicators are a fundamental part of their work. INSTO proposes an institutional framework, nine issue areas considered to be of highest relevant to observatories, and an economic data sheet for reporting. It encourages the systematic application of monitoring, evaluation and information management techniques, as key tools for the formulation and implementation of sustainable tourism policies, strategies, plans and management processes.

Beyond UNWTO, other international organizations and agencies have also considered the measurement of sustainability related to tourism; especially notable is the work of Eurostat¹, the OECD² and the European Commission's initiative on a European Tourism Indicators System (ETIS) for sustainable destination management³.

The Eurostat work released in 2006 was a comprehensive review of the measurement of sustainable tourism. The work proposed 20 indicators, primarily from economic and environmental domains, and a further set of possible social/cultural indicators, all set within the DPSIR indicator framework⁴. The indicator set was intended to be applied at regional/sub-national level.

The OECD work was reflected in a workshop in 2010 considering the relationship between tourism and sustainable development. It saw three main challenges for sustainable tourism – climate change, resource conservation and social cohesion – consistent with the themes identified in earlier work.

The ETIS initiative which commenced in 2013 has a focus on indicators for sustainable destination management. To frame the indicators they have identified four main themes:

- Destination management
- Social / cultural impact
- Economic value
- Environmental impact

In determining these themes they have recognized that sustainability is a contested concept but nonetheless seen the importance of aiming for integration in support of global initiatives such as the UN 2030 Development Agenda and the related 10YFP on Sustainable Production and Consumption⁵. The 10YFP has initiated the development of a flexible Monitoring and Evaluation (M&E) framework to provide directions and vision and measure its progress on capacity enhancement for the shift towards Sustainable Consumption and Production (SCP)⁶.

The European Commission launched the European Tourism Indicator System (ETIS) which has defined 43 core indicators and has been trialed in a number of destinations, including NECSTouR⁷ regions.

The European Environment Agency (EEA) is developing a reporting mechanism for indicators linking tourism and environment (TOUERM) in order to provide a more comprehensive picture of tourism in the frame of monitoring and informing on pressures and impacts as well as sustainability trends of European industry sectors.

Country and regional level work on sustainable tourism, sometimes led by academic researchers, has also been in evidence over the past 25 years. Documentation on some of these country experiences, as well as the work currently being carried out by in the pilot studies in the specific framework of MST, can be found on the MST website⁸.

At a corporate and business level there are many initiatives around sustainable tourism. Voluntary certification standards around sustainable tourism operation are also under ongoing development in sectors such as hotels and tour operators. The Global Sustainable Tourism Council (GSTC) is a leading facilitator in this space. The

¹ See "Methodological work on measuring the sustainable development of tourism", available at: <http://ec.europa.eu/eurostat/web/tourism/methodology/projects-and-studies>.

² See e.g. Workshop on sustainable development strategies and tourism <http://www.oecd.org/cfe/tourism/workshoponsustainabledevelopmentstrategiesandtourism.htm>; Climate change and tourism policy in OECD countries (<http://www.oecd.org/cfe/tourism/48681944.pdf>)

³ See: http://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_en.

⁴ DPSIR: Driving force, Pressure, State, Impact, Response used by EEA. This framework is an extension of the pressure-state-response framework proposed for environmental indicators and indicators of sustainable development developed by OECD (1994). See also "Environmental indicators: Typology and overview" available at <http://www.eea.europa.eu/publications/TEC25>

⁵ The 10YFP, an outcome of Rio+20, is a global framework that enhances international cooperation to accelerate the shift towards SCP. It aims at developing, replicating and scaling up SCP and resource efficiency initiatives, at national and regional levels, decoupling environmental degradation from economic growth, and thus increasing the net contribution of economic activities to poverty eradication and social development. It has six initial programmes: Consumer Information; Sustainable Buildings and Construction; Sustainable Food Systems; Sustainable Lifestyles and Education; Sustainable Public Procurement; and Sustainable Tourism.

⁶ 20 general pilot indicators have been provisionally identified for the four 10YFP objectives, including 7 on Objective 4 (Contribute to resource efficiency and decoupling economic growth from environmental degradation and resource use, while creating jobs and economic opportunities and contributing to poverty eradication and shared prosperity): energy efficiency, mitigation of GHG and other atmosphere, soil and water pollutants, material use reduction, waste reduction, water-use efficiency, sustainable land-use, and decent employment.

⁷ Network of European Regions for a Sustainable and Competitive Tourism (NECSTouR).

⁸ http://statistics.unwto.org/studies_experiences

private sector is also increasingly aware of the need to measure and report in a consistent way, as demonstrated for example by initiatives such as the Hotel Water Measurement Initiative (HWMI) and its equivalent for carbon promoted by the International Tourism Partnership (ITP) of Business in the Community⁹.

It is noted that while a significant amount of research and consideration of measurement issues has taken place, there is not a widespread practice of measuring sustainable tourism that is revealed in ongoing data sets. In that sense the description of sets of indicators does not necessarily translate into ongoing measurement.

Overall however, there is no shortage of material on sustainable tourism and it is not the intent here to capture all of the research and development that has taken place. Rather, the ambition is to build on the broad foundation that has been established in defining and discussing sustainable tourism.

A particular focus will be to recognize that the work to date has considered application of sustainable tourism thinking to practical situations, usually at destination level. In progressing towards a statistical framework for sustainable tourism, it is important that the experience already gained from applying sustainable tourism at this level is reflected such that the resulting information is appropriate for the context and required decision making.

3. Linking policy scope and measurement activity

Statistical frameworks

A statistical framework is an organizing structure for data and statistics that provides a common understanding on concepts, definitions and related terminology. A statistical framework is independent from the sources from which data might be collected and the methods used to compile the statistics.

Some benefits of a statistical framework are that it

- Aligns information with the needs of users
- Underpins collection and analysis of data by promoting coherence, consistency and clear thinking about a subject
- Identifies how to measure agreed concepts: data sources, relevant classifications, methods, variables and indicators
- Helps focus, prioritize resources towards statistics that matter the most
- Helps identify data gaps and areas of duplication

Discussion paper #3 provides a more extensive description of statistical frameworks, the link to accounting and the various advantages and limitations.

Motivation for a statistical framework

There are two key observations from the past work on indicators and the measurement of sustainable tourism. First, the focus has, on the whole, been on the development of indicators that are relevant at a relatively small scale, i.e. local tourism destinations and regions, as opposed to the national level. Indeed, these sustainable development indicators have been developed largely in isolation of national tourism measurement initiatives. Second, the selection of indicators has been issues driven – i.e. first identifying a policy or analytical issue within the general scope of economic, environmental, social and cultural domains (consistent with the scope of the definition of sustainable tourism) and then, for each issue, describing indicator/s. This is the approach reflected in the UNWTO 2004 indicator work.

These two factors have resulted in, or coincided with, little development of an underlying body of statistics for monitoring sustainable tourism, especially at a national level. Further, there is a distinct lack of environmental data available in relation to tourism activity. Indeed, the International Recommendations on Tourism Statistics (IRTS), adopted in 2008, acknowledges this situation in a short section on “Tourism and Sustainability” that concludes with the recommendation that “linking tourism and sustainability be considered a priority” for future statistics methodological work.

⁹ <http://tourismpartnership.org/water-stewardship/>

Given this background, the core rationale for MST is that, despite the long-standing interest and discussion in sustainable tourism, and the important, but separate, advances in tourism statistics, there is as yet no standardized basis for the collection of relevant information, at either the destination or national level. This is a significant gap, and one that limits the potential for the development of policies directed at advancing sustainable tourism. This is especially so at a national level where sustainable tourism is just one among many policy areas which governments must consider.

It is also important to note the importance of moving towards harmonizing information across the different territorial levels: global, national and sub-national (regional and local). While it is true that many effects/dependencies of tourism and actions to influence it are only manifest or meaningful at small spatial levels, there are also important sustainability questions that have national or global implications (CO₂ emissions and climate change are obvious examples).

In addition, much policy direction, and resource allocation, is determined at national rather than local levels. It may also be interesting for regions or destinations to understand their performance not only relative to other destinations but also relative to the national level. The SDGs are global goals and national governments will be monitoring and benchmarking their countries' performance.

These multiple connections to different policy issues at different spatial scales, highlight a particular limitation of a direct thematic indicator approach to measurement that is based on discussions among local stakeholders. That is, while a locally based approach will likely have strong resonance within a local community, it will make communication and engagement with those outside of the local community more difficult since it is likely that different terms and measurement boundaries are used.

A particular strength of indicators derived through a statistical approach is that for any given indicator there will be a consistent definition applied thus enabling comparison and discussion. Note that a statistical approach does not require that every community use the same indicators - different indicators can be chosen for different circumstances and should be selected taking into account the priority policy themes. However, for any selected indicator there will be a consistent definition.

The ambition of MST is therefore to develop a statistical framework for the multiple domains of sustainable tourism, such that there is:

- a) a standardized framework for the collection of information;
- b) a means to integrate tourism statistics with other economic, social and environmental information; and
- c) a coherent information base for the derivation of indicators that are relevant for the monitoring and analysis of sustainable tourism.

The rationale for statistical and accounting frameworks and the role of these frameworks in measurement and analysis is discussed at some length in Discussion paper #3.

Ensuring the relevance of a statistical framework

The ultimate test of a statistical framework is that it organizes information that is relevant for decision making. If this test is not passed, then the effort involved in establishing a statistical framework and populating it with data is of little value.

As alluded to above, in the indicator work that has been carried out to date, the maintenance of the link between indicators and decision making has been on the basis of identifying policy themes or areas. In one case, the Eurostat 2006 study, the DPSIR framework was used to frame the indicator set, but even in this case, the actual selection of themes was driven from a policy or analytical standpoint.

What is interesting is that each approach to the development of sets of indicators seems to have taken its own method of determining (i) the relevant themes, (ii) how many themes are listed and (iii) how they should be described. While the resulting indicator sets are no doubt relevant in their context, it does make comparison between measurement initiatives challenging and limits the potential for investment in underlying information sets required for ongoing monitoring.

Concerning policy themes, the proposal here is to use the list of 12 policy themes from the 2005 UNEP/UNWTO report as the starting point for ensuring that the statistical framework has appropriate policy relevance. An interesting test in this case is shown in Box 3, where these 12 policy themes are shown alongside the 13 indicator areas described in the 2004 UNWTO guidance on indicators for sustainable tourism.

Box 3: The UNWTO policy themes and indicator areas side by side

Policy themes	Sustainable tourism indicator areas
1. Economic viability	1. Well being of host communities
2. Local prosperity	2. Sustaining cultural assets
3. Employment quality	3. Community participation in Tourism
4. Social Equity	4. Tourist satisfaction
5. Visitor Fulfillment	5. Health and safety
6. Local Control	6. Capturing economic benefits from tourism
7. Community Wellbeing	7. Protection of valuable natural assets
8. Cultural Richness	8. Managing scarce natural resources
9. Physical Integrity	9. Limiting impacts of tourism activity
10. Biological Diversity	10. Controlling tourist activities and levels
11. Resource Efficiency	11. Destination planning and control
12. Environmental Purity	12. Designing products and services
	13. Sustainability of tourism operations and services
<i>Source: UNEP/UNWTO (2005) Making Tourism More Sustainable: A Guide for Policy Makers, Box 1.1</i>	<i>Source: UNWTO (2004) Indicators of Sustainable Development for Tourism Destinations: A Guidebook</i>

There is evidently a reasonably good linkage between the two with both lists covering topics on the economy, the environment, community engagement and involvement, tourist and visitor experience, and planning and management of destinations – albeit with different orderings and apparent coverage. In short, a thematic approach to developing indicators sets for measuring sustainable tourism is likely to ensure the relevance of the indicator set with respect to policy.

The challenge from a statistical perspective is isolating within these high-level domains the relevant statistical variables and the associated measurement boundaries and definitions. Furthermore, a thematic approach does not take into account the way in which the information underpinning indicators can be organized to ensure a comprehensive, consistent and continuous recording of the various economic, environmental and social dimensions of sustainable tourism.

By way of example, the policy theme of economic viability (Theme #1) seems to be reasonably well matched to the indicator area of capturing economic benefits from tourism (Indicator area #6). However, investigation of the detail within the indicator area, based on the 2004 UNWTO guidance on indicators, reveals that there are over 140 suggested indicators covering a wide variety of aspects including e.g. the seasonality of tourism, employment, poverty alleviation, and competitiveness.

Thus, while it might be possible to make a connection between each indicator area and the general policy theme, there is no clear sense of the structure of the underlying datasets that might need to be established and maintained in order to derive the indicators that have been selected.

Notwithstanding this limitation of an indicator focused approach, both the list of themes and the list of indicator areas provide good coverage of the concept of sustainable tourism. To test this coverage, a re-ordering of the policy themes is shown in Box 4, where the distinction is made between the asset base underpinning the provision of sustainable tourism and the flows of benefits and costs associated with the use of these assets. This

distinction between assets and benefits provides a means of understanding whether there is appropriate coverage in the consideration of collected data; i.e. whether all relevant assets are in scope and whether all relevant flows of benefits are included.

The use of assets and benefits as concepts to assess coverage is based in the way in which these two concepts form the two key dimensions in the assessment of sustainability. That is, the assessment of sustainability requires an understanding of the underlying stock of assets and the flow of benefits – both of these aspects are featured in the definition of sustainable development quoted earlier where the discussion concerned maintaining the ability (i.e. resource or asset base) to support current and future needs (i.e. benefits).

The logic of considering assets and benefits is also central to the design of accounting approaches where terms such as stocks and flows and capital and income are commonly applied. Thus accounting frameworks are a natural fit for the assessment of sustainability.

From a statistical perspective then, understanding the coverage of indicators can be considered by assessing whether a comprehensive range of assets and benefits has been included. Considering Box 4 the coverage of assets includes social, cultural, governance and environmental perspectives but seems more limited in relation to economic assets – such as transport infrastructure, roads, airports, etc. In terms of benefits, there appears good coverage of economic and social outcomes but less coverage of environmental benefits and the outcomes from governance. Clearly much further discussion could be undertaken. This short discussion is simply to provide an entry point for consideration of the coverage of measurement relative to the key sustainable tourism issues.

Box 4: Policy themes in terms of assets and benefits

Assets	Benefits
	1. Economic viability
	2. Local prosperity
	3. Employment quality
4. Social Equity	
	5. Visitor Fulfillment
6. Local Control	
	7. Community Wellbeing
8. Cultural Richness	
9. Physical Integrity	
10. Biological Diversity	
	11. Resource Efficiency
12. Environmental Purity	
<i>Source: Adapted from UNEP/UNWTO (2005) Making Tourism More Sustainable: A Guide for Policy Makers, Box 1.1 and Section 1.8</i>	

4. Linking statistical domains to sustainable tourism indicator sets

The previous section suggested that a measurement focus on indicator areas did not provide a suitable basis for understanding how the underlying datasets might be identified and compiled on a regular basis. To give more context to this concern, Table 1 provides a listing of statistical domains¹⁰ broadly grouped under tourism activity,

¹⁰ The statistical domains used in this paper have been developed by the author for illustrative purposes.. They are based on a general understanding of the main areas about which official statistics are published and take into consideration the likely application of data and common data sources. To the extent that the approach described in this paper is taken forward in the MST project a more formal process of defining statistical domains may be required.

economic, environment, social and governance headings¹¹. The list of domains has been formed by working through the list of over 700 indicators included in the UNWTO 2004 Guidebook which covers 13 main issue areas. 19 main statistical domains have been identified with each domain reflecting a specific area of statistics delineated by the type of data and/or the source of the data. An additional 12 domains were also identified as relevant for sustainable tourism as they provided data for a small number of indicators. These additional domains are listed at the bottom of Table 1.

For each of the 19 main domains, Table 1 notes the corresponding indicator area (#1 to #13 as listed in Box 3 above) to which the data in that domain are relevant. This correspondence is important because it shows that a focus on measurement only in terms of individual indicator areas will ignore the reality that the information required to report on the indicators will come from various different statistical domains, thus reinforcing the need for a statistical framework that explicitly establishes these links. It also highlights that information from a single statistical domain will be relevant in a number of indicator areas.

¹¹ These groupings are indicative rather than definitive in nature. Tourism is commonly defined as a cross-domain activity (IRTS para 1.1). However, from a statistical viewpoint there has been little development of the environmental, social and governance perspectives and hence the framing here reflects current practice rather than longer term intent.

Table 1 Some links between statistical domains and UNWTO indicator issue areas

Statistical domains		Indicator areas (from Box 3)												
		Well-being of host communities #1	Sustaining cultural assets #2	Community participation #3	Tourist satisfaction #4	Health & safety #5	Capturing economic benefits #6	Protecting natural assets #7	Managing natural resources #8	Limiting impacts of tourism #9	Controlling tourist activity #10	Destination planning & control #11	Designing products & services #12	Sustainability of tourism operations #13
Tourism activity														
	Tourist numbers and movements	X			X	X	X				X	X		
	Tourism demand and expenditure	X			X	X	X				X	X		
	Tourism business production and characteristics	X				X		X	X			X	X	
	Tourism satisfaction and ratings				X	X	X	X	X		X	X		
	Events, sites and cultural assets	X	X							X	X	X		
Economic														
	Employment and income	X				X	X							
	Transport statistics	X									X			
	Infrastructure						X	X	X		X			
Environment														
	Water and sewage					X	X	X	X					
	Waste					X	X		X					
	Energy and GHG emissions							X	X		X			
	Environmental condition						X		X		X			
	Environmental expenditure							X	X					
Social														
	Community attitudes and participation	X		X		X	X				X	X		
	Training and qualifications	X				X	X		X		X		X	
	Health					X		X	X		X			
	Crime and safety	X				X					X			
Governance														
	Tourism planning, promotion and management	X		X		X	X	X	X	X	X	X		
	General planning and other policies	X				X	X	X	X		X			
OTHER DOMAINS														
Economic	Housing and cost of living; Financial statistics; International trade and payments; Government finance													
Environment	Land use; Climate events / disasters													
Social	Population data; Gender; Children and family; NGO activity; Disability and mobility; Indigenous													

On the whole, there are statistical definitions and classifications relating to each of these statistical domains. In general, definitions and classifications have not been developed with the measurement of tourism in mind, except for, of course, what concerns those domains listed under the heading of tourism activity. The challenge therefore in building a statistical framework for sustainable tourism is investigating the extent to which the existing statistical definitions for the various domains would need to and could be appropriately adapted.

Two aspects of statistical information are not shown in Table 1 but will need to be overlaid in certain situations to ensure the usefulness of the information. These are:

- (i) the spatial scale, and
- (ii) the reference period (daily, monthly, annual) of the data published.

The first aspect is needed to ensure data can be applied appropriately at sub-national (destination and region) and national levels; and the second aspect is needed to account for issues such as seasonality but also to cater to some user requirements for quick data. Potentially, all of the information structured in Table 1 may be measured at detailed spatial scales and with high frequency but generally this will not be required for all variables and a balance between meeting user requirements and data collection costs will need to be made. This is very much related to quality assurance, i.e. the data's "fitness for use", and dimensions of, for example: relevance, accuracy and reliability, timeliness and punctuality, accessibility and clarity, coherence and comparability, etc¹².

In an attempt to provide some clarity on the statistical areas in which the MST should focus, Table 2 shows the 19 main statistical domains from Table 1 (column 1) and links to the 29 UNWTO 2004 "baseline indicators" and 21 ETIS core indicators (columns 2 and 3 respectively). The numbers in the columns indicate the number of indicators that primarily relate to the respective statistical domain. For example, five of the UNWTO baseline indicators are related to the measurement of tourist numbers and movements.

The table suggests that there are some areas in the current indicator sets that are not covered, i.e. in the social and governance dimensions of sustainable tourism. However, beyond a focus on the domains relating to tourism activity, it is proposed here, to focus on the employment and income domain and also the various environmental domains. As far as these domains are concerned, there is a very good coverage of the baseline and core indicators.

¹² See, for example, the Template for a generic national quality assurance framework (NQAF), as developed by the UN Expert Group on National Quality Assurance Frameworks: <http://unstats.un.org/unsd/dnss/docs-nqaf/2012-13-NQAF-E.pdf>

Table 2 Some links between statistical domains and UNWTO and ETIS core indicators

Statistical domains	UNWTO 2004 29	
	baseline indicators (number)	ETIS 21 core indicators (number)
Tourism activity		
Tourist numbers and movements	5	2
Tourism demand and expenditure	1	4
Tourism business production and characteristics	5	4
Tourism satisfaction and ratings	2	1
Events, sites and cultural assets	-	-
Economic		
Employment and income	2	2
Transport statistics	-	1
Infrastructure	-	-
Environment		
Water and sewage	3	2
Waste	3	2
Energy and GHG emissions	2	1
Environmental condition	-	-
Environmental expenditure	-	-
Social		
Community attitudes and participation	2	1
Training and qualifications	-	-
Health	1	-
Crime and safety	-	1
Governance		
Tourism planning, promotion and management	-	-
General planning and other policies	3	-

Sustainable tourism indicators in the context of the UN SDG

Following the adoption of the UN 2030 Agenda for Development and the associated Sustainable Development Goals (SDGs) in 2015 there has been an active discussion on the definition of indicators for measuring progress towards the SDGs. Within the array of targets and indicators there have been a number that are tourism centered, notably

Target 8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

Target 12.b: develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

Target 14.7: By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

For Target 8.9, the current proposal at the IAEG-SDG is for the measurement of sustainable tourism using information that can be derived from tourism satellite accounts, i.e. the indicators tourism GDP (TGDP) and tourism employment/jobs. These two indicators are intended to cover the economic dimension of sustainable tourism and, in part, the social dimension. The UNWTO has recently put forward (jointly with the Working Group on MST) the proposal that a third indicator be included, "Energy use in tourism" - an economic/environmental one, so as to ensure more appropriate coverage of the concept of sustainable tourism.

For Target 12.b, the current proposal is the “Number of sustainable tourism strategies or policies and implemented action plans, with agreed monitoring and evaluation tools”. The UNWTO proposal has been that this indicator should be adapted to focus on measurement of the stage of implementation of the SEEA and TSA frameworks.

The indicator “Fisheries as a percentage of GDP” is currently proposed for Target 14.7. The UNWTO proposal has been to expand the indicator set for this target to include indicators of direct relevance for sustainable tourism; UNWTO’s recommendation is that the three indicators related to sustainable tourism proposed for monitoring target 8.9 are used.

Perhaps the primary reason for the limited scope of SDG tourism indicators considered by IAEG-SDG at this stage - in particular concerning the environmental dimension and the cultural and local aspects of sustainable tourism - is the lack of statistics on tourism and the environment measured following agreed frameworks. The UN General Assembly has requested the SDG indicators to be statistically driven¹³ and, in general, the indicators that will be used to monitor progress towards the SDGs are those that have well accepted definitions and which are supported through international statistical processes. The MST is an opportunity to make the connection between the substantive work on sustainable tourism and the available statistical frameworks, and advancing along these lines is of direct relevance with regard to a potential significant increase in the use of indicators that relate to sustainable tourism.

5. Conclusion

The intent in this discussion paper is to give an appropriate framing for the concept of sustainable tourism and to describe the gap that has developed between the definition and measurement (via indicators) of sustainable tourism on the one hand, and the progress on defining statistical frameworks that would underpin indicator derivation, on the other.

From an environmental perspective on sustainable tourism, there appear to be six statistical domains of primary relevance: water (including sewage); energy, GHG emissions; solid waste; environmental condition and environmental expenditure. Developing appropriate statistical definitions and classifications with particular reference to tourism would fill important data gaps and provide the basis for the derivation of many relevant sustainable tourism indicators.

With this in mind, it is proposed that the statistical framework to be developed for sustainable tourism focus on these areas with additional consideration of the need for locally relevant destination level data and also the need for assessment of both longer term and seasonal trends.

It is further proposed that an accounting framework rooted in international standards provides the appropriate framing for organizing the information. In particular the use of the recently adopted statistical frameworks, the System of Environmental-Economic Accounting (SEEA) Central Framework and Experimental Ecosystem Accounting, is recommended as not only does it provide the frameworks that inherently support the assessment of environmental sustainability, but it also can be linked to the Tourism Satellite Account framework that is well established.

¹³ See <http://unstats.un.org/sdgs/iaeg-sdgs/>

6. Areas for discussion

This discussion paper aims to provide a framing of sustainable tourism that supports the development of a statistical framework. It is important to have a common understanding of sustainable tourism such that the substantial history of work on this topic can be used to best effect and such that the full advantages of having a statistical framework, particularly comparable and consistently compiled data, are aligned with the requirements for decision making. With this aim in mind, the discussion paper has focused on the links between a broad set of proposed statistical domains and the types of sustainable tourism development policy and indicator areas identified in previous milestone work.

Feedback on the descriptions is welcome with a particular focus on the following questions:

- Are there key parts of the sustainable tourism history that have been overlooked or misrepresented?
- Is the description of the proposed statistical domains clear?
- Are the 12 policy themes from the UNEP/UNWTO 2005 report and the UNWTO 2004 Guidebook an appropriate starting point for describing the breadth of sustainable tourism policy issues?
- Are there other significant examples of sustainable tourism indicators sets that should be referred to?
- Is a focus on the economic and environmental dimensions of sustainable tourism a reasonable starting point for MST?
- What concerns are there about the use of an accounting based approach to the organization of information on sustainable tourism?

Annex 1: UNWTO and EU ETIS baseline indicators

UNWTO baseline indicators: UNWTO (2004) Indicators of Sustainable Development for Tourism Destinations: A Guidebook

Baseline Issues	Baseline Indicators
Local satisfaction with tourism	<ul style="list-style-type: none"> ➤ Local satisfaction level with tourism (questionnaire)
Effects of tourism on communities	<ul style="list-style-type: none"> ➤ Ratio of tourists to locals (average and peak period/days) ➤ Percentage who believe that tourism has helped bring new services or infrastructure. (questionnaire-based) ➤ Number and capacity of social services available to the community (percentage of which are attributable to tourism)
Sustaining tourist satisfaction	<ul style="list-style-type: none"> ➤ Level of satisfaction by visitors (questionnaire-based) ➤ Perception of value for money (questionnaire-based) ➤ Percentage of return visitors
Tourism seasonality	<ul style="list-style-type: none"> ➤ Tourist arrivals by month or quarter (distribution throughout the year) ➤ Occupancy rates for licensed (official) accommodation by month peak period relative to low season and percentage of all occupancy in peak quarter or month) ➤ Percentage of business establishments open all year ➤ Number and percentage of tourist industry jobs which are permanent or full-year (compared to temporary jobs)
Economic benefits of tourism	<ul style="list-style-type: none"> ➤ Number of local people (and ratio of men to women) employed in tourism (also ratio of tourism employment to total employment) ➤ Revenues generated by tourism as percentage of total revenues generated in the community
Energy management	<ul style="list-style-type: none"> ➤ Per capita consumption of energy from all sources (overall, and by tourist sector – per person day) ➤ Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques ➤ Percentage of energy consumption from renewable resources (at destinations, establishments)
Water availability and conservation	<ul style="list-style-type: none"> ➤ Water use: (total volume consumed and litres per tourist per day) ➤ Water saving (percentage reduced, recaptured or recycled)
Drinking water quality	<ul style="list-style-type: none"> ➤ Percentage of tourism establishments with water treated to international potable standards ➤ Frequency of water-borne diseases: number/percentage of visitors reporting water-borne illnesses during their stay
Sewage treatment (wastewater management)	<ul style="list-style-type: none"> ➤ Percentage of sewage from site receiving treatment (to primary, secondary, tertiary levels) ➤ Percentage of tourism establishments (or accommodation) on treatment system(s)
Solid waste management (Garbage)	<ul style="list-style-type: none"> ➤ Waste volume produced by the destination (tonnes) (by month) ➤ Volume of water recycled (m³)/Total volume of waste (m³) (specify by different types) ➤ Quantity of waste strewn in public areas (garbage counts)

Development control	<ul style="list-style-type: none"> ➤ Existence of a land use or development planning process, including tourism ➤ Percentage of area subject to control (density, design, etc.)
Controlling use intensity	<ul style="list-style-type: none"> ➤ Total number of tourist arrivals (mean, monthly, peak periods) ➤ Number of tourists per square metre of the site (e.g. at beaches, attractions) per square kilometre of the destination – mean number/peak period average

European Commission European Tourism Indicator System (ETIS): Key core indicators: European Commission (2016) The European Tourism Indicator System: ETIS toolkit for sustainable destination management

Section A: Destination management	
Criteria	ETIS core indicators
A.1 Sustainable tourism public policy	Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental/quality/sustainability and/or Corporate Social Responsibility
A.2 Customer satisfaction	Percentage of tourists and same-day visitors that are satisfied with their overall experience in the destination

Section B: Economic value	
Criteria	ETIS core indicators
B.1 Tourism flow (volume and value) at destination	Number of tourist nights per month
	Daily spending per same-day visitors
B.2 Tourism enterprise(s) performance	Average length of stay of tourists (nights)
B.3 Quantity and quality of employment	Direct tourism employment as percentage of total employment in the destination
B.4 Tourism supply chain	Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises

Section C: Social and cultural impact	
Criteria	ETIS core indicators
C.1 Community/social impact	Number of tourists/visitors per 100 residents
C.2 Health and safety	Percentage of tourist who register a complaint with the police
C.3 Gender equality	Percentage of men and women employed in the tourism sector
C.4 Inclusion/accessibility	Percentage of rooms in commercial accommodation establishments accessible for people with disabilities
C.5 Protecting and enhancing cultural heritage, local identity and assets	Percentage of residents that are satisfied with the impacts of tourism on the destination's identity

Section D: Environmental impact	
Criteria	ETIS core indicators
D.1 Reducing transport impact	Percentage of tourists and same-day visitors using different modes of transport to arrive at the destination
	Average travel (km) by tourists and same-day visitors from home to the destination
D.2 Climate change	Percentage of tourism enterprises involved in climate change mitigation schemes – such as CO ₂ offset, low energy systems, etc. – and 'adaptation' responses and actions
D.3 Solid waste management	Waste production per tourist night compared to general population waste production per person (kg)
	Percentage of total waste recycled per tourist compared to total waste recycled per resident per year
D.4 Sewage treatment	Percentage of sewage from the destination treated to at least secondary level prior to discharge
D.5 Water management	Water consumption per tourist night compared to general population water consumption per resident night
D.6 Energy usage	Energy consumption per tourist night compared to general population energy consumption per resident night
D.7 Landscape and biodiversity protection	Percentage of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes