



**PROCEEDINGS**  
of the  
**Meeting of the Working Group of Experts  
on Measuring Sustainable Tourism**

(Draft version, 12 January 2017)

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UNWTO Headquarters, Madrid, Spain  
20-21 October 2016



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**of the**  
**Meeting of the Working Group of Experts**  
**on Measuring Sustainable Tourism**



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**Press Release**

Madrid, Spain, 11 November 2016

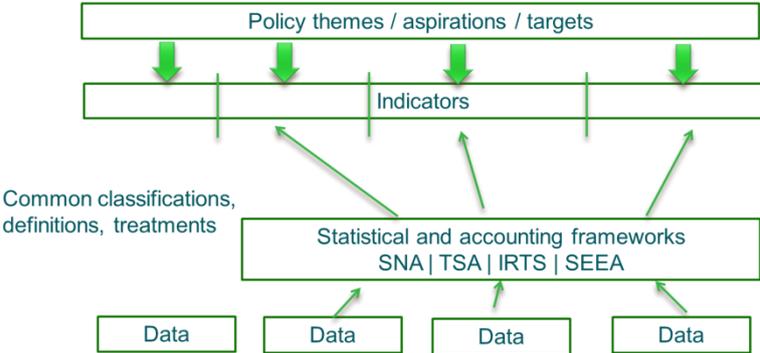
**UNWTO hosts 1st meeting of the Working Group of Experts on Measuring Sustainable Tourism**

*Policy experts and statisticians specialized in sustainable development, environment and tourism gathered to agree on the way forward in developing a statistical framework for sustainable tourism. The meeting was held at UNWTO headquarters in Madrid last 20-21 October.*

The first meeting of the Working Group of Experts on Measuring Sustainable Tourism (MST) agreed that developing a statistical framework for sustainable tourism is a priority to support integrated policy responses at national and destination level, and urged UNWTO to lead this effort.

The Group agreed that the core rationale for developing a statistical framework is to support the measurement of sustainable tourism in its various dimensions (economic, environmental and social) and at the relevant spatial levels (global, national, sub-national) by providing a common language and organizing structure for exploiting the richness of data already available and for identifying additional data that may be needed.

A statistical framework for sustainable tourism is the natural evolution of and complement to the standing statistical standards on tourism statistics: the Tourism Satellite Account (TSA) and the International Recommendations for Tourism Statistics (IRTS). The starting foundation involves bridging the economic and environmental dimensions of sustainable tourism through two UN standards: the TSA and the System of Environmental Economic Accounting (SEEA).



A standards-based statistical framework can support the credibility, comparability and outreach of data and various measurement and monitoring programmes pertaining to sustainable tourism, including the Sustainable Development Goals (SDG) indicators.

“The Sustainable Development Goals and the International Year of Sustainable Tourism for Development 2017 constitute a unique opportunity to advance sustainable, inclusive and responsible tourism; developing a statistical framework to measure sustainable tourism is essential in fostering a common understanding for tracking our progress,” said UNWTO Secretary-General Taleb Rifai. “Tourism stakeholders at large will benefit from having a statistical framework for sustainable tourism much like we all benefit from the TSA which provides the framework for tourism’s economic contribution”.

More than 50 representatives from stakeholders like National Tourism Administrations, National Statistical Offices and Ministries of Environment from 13 countries, as well as subnational administrations, the private sector, academia, civil society, tourism observatories (including UNWTO-INSTO members) and multilateral organizations participated in the two day working session.

The meeting came at an important point in UNWTO's initiative Towards a Statistical Framework for Measuring Sustainable Tourism (MST) which is being developed since 2015 with the support of the UN Statistical Division and the engagement of Austria, Fiji, Italy, Mexico, The Netherlands and Cardiff University (Wales).

In addition to exchanging views and experiences, the Working Group of Experts considered the 8 discussion papers prepared for the meeting and the ongoing work of the 5 pilot studies in order to assess the feasibility and relevance of advancing towards a statistical framework to better inform and to advocate for sustainable tourism as well as to guide policy makers.

The Working Group emphasized that beyond being a technical exercise, developing and subsequently implementing a statistical framework for sustainable tourism is very much a strategic endeavor requiring stakeholder engagement, inter-institutional coordination and political leadership. These key issues need to be addressed in recognition of the multifaceted natures of tourism, environment and sustainable development.

## Agenda

### Thursday 20 October

#### Session A. Setting the scene and introductions

##### Opening

Mr. Márcio Favilla (UNWTO Executive Director for Operational Programmes and Institutional Relations)

##### Welcome address by the Chair

##### *The importance of measuring sustainable tourism and of having a statistical framework*

Mr. Peter Laimer (Austria), Chair of the UNWTO Committee on Statistics and TSA

##### [Overview of the Measuring Sustainable Tourism \(MST\) initiative](#)

Ms. Clara van der Pol (UNWTO)

##### Background document:

- [Overview of the initiative Towards a Statistical Framework for Sustainable Tourism](#)

Round table of **introductions** and **open floor** for thoughts from the Group followed by a **summary by the Chair**

#### Session B: Understanding the policy, analytical and reporting requirements

**Moderator:** Mr. Márcio Favilla (UNWTO Executive Director for Operational Programmes and Institutional Relations)

##### Invited presentations:

- Ms. Marta Valero (Spain): [Some key policy views on sustainable tourism in Spain](#)
- Mr. Karoly Kovacs (UNSD): [UNSD's support to improving the compilation of indicators for sustainable tourism](#)
- Ms. Sofia Gutiérrez (UNWTO): [Information needs at destination level as observed through the International Network of Sustainable Tourism Observatories \(INSTO\)](#)
- Mr. Calvin Jones (Cardiff University): [Mainstreaming Sustainable Tourism: Approaches from Wales](#)
- Mr. Bimlesh Krishna (Fiji): [Key findings from pilot study](#)

##### Papers:

- [Pilot study report Fiji](#)
- [Discussion Paper #1: Framing Sustainable Tourism](#)

#### Session C: Building on standards and experience to advance MST

##### Invited presentations:

- Ms. Leila Rohd-Thomsen (UNSD): [Integrated data for the 2030 agenda: the SEEA and TSA](#)
- Mr. Juan Pablo Castañeda, (World Bank): [The WAVES Experience in Developing Countries: Challenges and opportunities for institutionalizing Natural Capital Accounting](#)
- Mr. Peter Laimer (Austria): [MST Pilot study in Austria](#)
- Ms. Angelica Tudini (Italy): [Starting an MST Pilot Study in Italy](#)

##### Papers:

- [Pilot study report Austria](#)
- [Pilot study report Italy](#)
- [Discussion paper #5: Designing pilot studies](#)
- [Discussion paper #6: Collecting information on sustainable tourism at country level](#)

## Session D: Towards a statistical framework for measuring sustainable tourism

**Presenter and Moderator:** Mr. Carl Obst (UNWTO Consultant)

### Papers:

- [Discussion Paper #2: Applying and integrating the TSA and SEEA frameworks for measuring sustainable tourism](#)
- [Discussion Paper #3: Role of statistical and accounting frameworks for measuring sustainable tourism](#)
- [Discussion Paper #4: Measuring sustainable tourism at sub-national and destination level](#)
- [Discussion Paper #8: Draft outline for a methodological document describing a statistical framework for measuring sustainable tourism \(building on draft discussed in Nov 2015\)](#)

## Friday, 21 October

## Session E: Key measurement issues in linking tourism, environment and spatial scale

### Invited presentations:

- Mr. Carl Obst (UNWTO Consultant): [Indicators, statistical framework and data](#)
- Mr. Arturo de la Fuente (Eurostat): [Some lessons from SEEA for the measurement of sustainable tourism](#)
- Mr. Maarten van Rossum (Netherlands): [Green growth indicators for the tourism sector in the Netherlands](#)
- Mr. Raúl Figueroa (Mexico): [Towards the “greening” Tourism Satellite Account. Mexican proposal](#)
- Mr. Antonio Massieu (INRouTe): [UNWTO MST Initiative and the Measurement and Analysis of Subnational Tourism and Sustainable Development](#)
- Ms. Ana Moniche (Andalucía Regional Government): [Key measurement issues in linking tourism, environment and spatial scale - Policy relevant indicators statistically based](#)
- Mr. Carl Obst (UNWTO Consultant): [Introduction to the key issues for measuring sustainable tourism](#)

### Papers:

- [Discussion Paper #4: Measuring sustainable tourism at sub-national and destination level](#)
- [Discussion Paper #7: Key issues for measuring sustainable tourism](#)

## Session F: Way forward and closing

### Papers:

- [Discussion Paper #1: Framing Sustainable Tourism](#)
- [Discussion Paper #2: Applying and integrating the TSA and SEEA frameworks for measuring sustainable tourism](#)

### Background documents:

- [Next steps](#)
- 2017 UN International Year of Sustainable Tourism for Development

## Concluding Remarks by the Chair

### Closing

Mr. Carlos Vogeler (UNWTO Executive Director for Member Relations)

## Draft minutes

### Session A. Setting the scene and introductions

#### **Opening speech by Mr. Márcio Favilla, UNWTO Executive Director for Operational Programmes and Institutional Relations**

- The UN 2030 Development Agenda, with its Sustainable Development Goals (SDGs), leaves no doubt of the importance of sustainability as we move towards to 2017 the International Year of Sustainable Tourism for Development.
- The MST initiative seeks to have a common understanding, provides a platform for ongoing exchange, research, guidance and implementation, and builds bridges between tourism and the economic, social and environmental systems it is nested in.

#### **Welcome address by the Chair** (Mr. Peter Laimer)

##### **The importance of measuring sustainable tourism and of having a statistical framework**

Mr. Peter Laimer welcomed the participants and expressed his satisfaction of the heterogeneity and size of the group, contributing to the exchange of opinions, input and thoughts, crucial for the success of the MST project.

He highlighted the main reasons for having a statistical framework related to MST:

- It provides a technical and operative guideline on how to measure sustainable tourism, following country needs and priorities. It should be a practical guide written in a language easily accessible for both statistical experts and researchers and to professional users who are not experts in tourism and environmental statistics and use.
- Is a prerequisite for the provision of comparable and consistent data for the users; providing a framework that countries can use for MST and more generally should permit greater international comparability related to the produced figures.
- It enhances robust information and indicators on the role tourism is affecting and can affect the social, ecological and economic environment, so as to ensure credibility of the measurements, their consistency within the same country, and among countries and destinations, as well as with other fields of activities, and systematic production.
- It brings new recognition to tourism policy as one activity which might influence the various environments, positively and negatively.
- It gives greater credibility to tourism statistics and in particular to the indicators analysing the scale and the significance of tourism as an activity having implications on the environment.
- As a prerequisite to generate usable, practical information for tourism policy and provide a reliable and credible tool necessary for both effective public policies and efficient business operations.
- It might act as a basis in order to develop research and innovative methodological approaches.

#### **Overview of the initiative -Toward a statistical framework for sustainable tourism** (Clara van der Pol - UNWTO)

The main objective is to develop a statistical framework for sustainable tourism and it is intended that a central feature of it will be the connection between the SEEA and the Tourism Satellite Account.

In using an accounting basis for the statistical framework, the project seeks to harness the general benefits that arise from the use of accounting approaches in (i) ensuring internal coherence, (ii) the ability to understand data gaps and relate and place different information in context, and (iii) the potential to derive indicators based on consistently defined economic and environmental information.

In this process, it is important bringing together and learning from both data producers and users, as well as to recognize various developments over many years in relevant areas.

The **main objectives** are:

- Development of a standardized framework for the collection of meaningful information.
- Development of means to integrate tourism statistics with other economic, social and environmental information.
- Development of a coherent information base for the derivation of indicators relevant for the monitoring and analysis of sustainable tourism.

The **following questions/issues** should be answered/discussed during the meeting:

- Would a statistical framework be useful?
- Scope of a statistical framework? Can the scope be aligned between a policy perspective and a statistical perspective?
- What perspectives are missing from the discussion and how might we engage them?
- Is the proposed approach OK in terms of the proposed priorities, the use of accounting and thoughts about spatial scale?
- What are the key measurement challenges?
- What are the next steps?

**The Working Group of Experts raised the following points:**

- The importance of a statistical framework for measuring sustainable tourism.
- The need for the integration of statistics, indicators and TSA/SEEA.
- The acknowledgement of the complexity of the issue.
- The importance of the measurement on sub-national level.
- The implementation challenges of the various systems.
- The recognition that the collaboration with stakeholders is crucial.
- The need to ensure usability for users.

## **Session B. Understanding the policy, analytical and reporting requirements**

Mr. Favilla introduced the session which should provide an overview of the importance for measuring sustainable tourism as perceived from representatives of some of the key stakeholder groups. A first attempt at framing the concept of sustainable tourism from a statistical perspective is presented for discussion. The group will consider whether, and to what degree, a statistical framework could be useful for informing on sustainable tourism.

### **Ms. Marta Valero (Spain): Some key policy views on sustainable tourism in Spain**

Spain reiterated the importance of the Measuring Sustainable Tourism initiative and highlighted the relevance of a statistical framework. She also stressed the crucial need for inter-institutional cooperation.

### **Mr. Karoly Kovacs (UNSD): UNSD's support to improving the compilation of indicators for sustainable tourism, including SDGs**

UNSD recalled the SDG indicators that mention tourism and confirmed TSA as a tool for SDG indicators 8.9.1 and 8.9.2. UNSD recognized that SDG require further TSA implementation in countries and development of a statistical framework for MST.

### **Ms. Sofía Gutiérrez (UNWTO): Information needs at destination level as observed through the International Network of Sustainable Tourism Observatories (INSTO)**

She presented the UNWTO "International Network of Sustainable Tourism Observatories" (INSTO), a network of tourism observatories monitoring the economic, environmental and social impact of the tourism at destination level (<http://sdt.unwto.org/>). The project must be linked to the MST initiative.

### **Mr. Calvin Jones (Cardiff University), MST Pilot Study in Wales**

He mentioned the need to insert tourism in sustainable development policy and monitoring as well as to consider the particular perspective on sustainability provided by indicators.

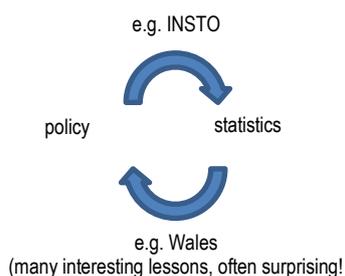
**Mr. Bimlesh Krishna (Fiji): A national Green Growth Strategy integrating tourism and monitoring (done by Carl Obst)**

He mentioned the excellent potential to measure sustainable tourism using statistical and accounting frameworks and highlighted its high relevance based on current government priorities. He shared some lessons learned: the importance to start producing figures (even if they are not perfect) to get discussion started; the mapping of the location of tourism business in relation to land (coverage/use) and assets; and mentioned also that waste is very much an issue.

**Summary of the discussion**

The Working Group of Experts on Measuring Sustainable Tourism:

- Recognized that sustainability is also a global issue (e.g. rising sea level) which are beyond national control.
- Reminded that policy and statistics influence each other both ways:



- Identified some challenges to be addressed: typology of destinations, Big data as a possible data source, social/cultural indicators.

**Session C. Building on standards and experience to advance MST**

**Ms. Leila Rohd-Thomsen (UNSD): Integrated data for the 2030 agenda: the SEEA and TSA**

She stressed the need to link TSA and SEEA accounts as well as to develop a “technical note” which outlines a preliminary accounting structure and tables, and supported sourcing indicators for international compilation (like SDGs).

**Mr. Juan Pablo (JP) Castañeda, (World Bank): The WAVES Experience in Developing Countries: Challenges and opportunities for institutionalizing Natural Capital Accounting**

He presented the WAVES experience in trying to mainstream an integrated statistical accounting framework for natural capital in developing countries’ policy decision making processes. He affirmed the interest in countries in linking SEEA to tourism and its relevance in macro-economic policy.

**Mr. Peter Laimer (Austria), MST Pilot study in Austria**

He highlighted the main objectives of the pilot studies that are to (a) present a comprehensive and a critical discussion related to the usefulness of the measurement of sustainability of tourism; (b) discuss several aspects of economic, social and environmental sustainability to be covered and propose some examples that would reflect these aspects; (c) present an overall summary of several indicators measuring sustainability, taking into account relevance and implementation aspects and (d) identify data sources necessary for the measurement of sustainability as well as the challenges related to these sources including the interpretation of the preliminary results.

**Ms. Angelica Tudini (Italy), Starting an MST Pilot Study in Italy**

She underscored the major aims of the Italy pilot study which are to (a) identify a suitable environmentally extended tourism satellite account; (b) produce estimates of the interaction between tourism industries and the environment for specific issues; (c) highlight possible future developments and extensions of the scope of the study to better meet existing policy demand.

**Summary of the discussion**

The Working Group of Experts on Measuring Sustainable Tourism:

- Recognized that data availability is an issue, although MST can also spur statistical development.
- Noted that the “London Group”, TSA and environmental tables (resident, visitors) would be helpful.
- Remarked the usefulness of micro data that is geo-coded (linked to business register, household, vehicle register, water use).

**Session D. Towards a statistical framework for measuring sustainable tourism**

Mr. Carl Obst, UNWTO consultant, [presented the objectives of MST:](#)

- Standardized framework for the collection and organisation of relevant information.
- Means to integrate tourism statistics with other economic, social and environmental information.
- Coherent information base for the derivation of indicators that are relevant for the monitoring and analysis of sustainable tourism.

**Summary of the discussion**

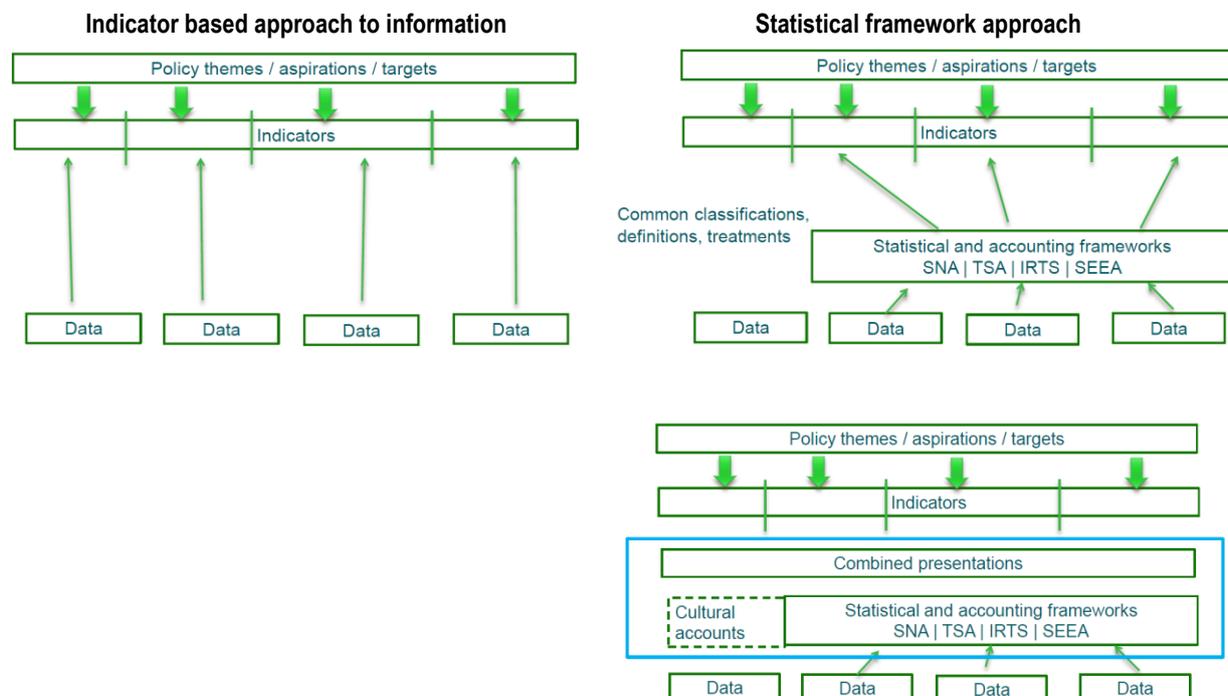
The following questions were considered:

- What priorities for measurement seem appropriate?
- What might be feasible to measure in the short, medium, long term?
- Which spatial scales should be taken into account?
- Are there measurement challenges that immediately spring to mind?

The Working Group of Experts on Measuring Sustainable Tourism:

- Agreed on the usefulness of a statistical framework (scope: tourism industries, environment, social/cultural).
- Identified areas to be taken into account such as: flows and stock of environmental assets, TSA-Table 8 (investment), Ecosystem accounts and social and cultural statistics.

Mr. Carl Obst summed up the session and explained again the interaction between “policy themes”, indicators and statistical/accounting frameworks, pointing out that there is a direct link between policy and indicators:



## Session E. Key measurement issues in linking tourism, environment and spatial scale

The Chair introduced the session which aimed to present and discuss the main conceptual and measurement issues, identify missing points or perspectives, and set a direction for resolution/advancement.

### [Mr. Arturo de la Fuente \(Eurostat\): Some lessons from SEEA for the measurement of sustainable tourism](#)

He highlighted that flows and stock accounts might be useful to consider, mainly “physical accounts” (natural resource, physical values) and “activity accounts” (specific classification of environmental activities). He stressed the importance of a strategy, capacity building and the recognition of statistical product vs. user demand.

### [Mr. Maarten van Rossum \(Netherlands\): Embarking on an MST pilot project in the Netherlands: a first focus on SEEA accounts for tourism industries](#)

The pilot study on combining TSA and SEEA is financed by the Ministry of Economy in order to have a more complete picture of tourism beyond economic contribution (TSA). He announced that first results are expected by the end of 2016.

### [Mr. Raúl Figueroa \(Mexico\): TSA and SEEA for informing on sustainable tourism in Mexico](#)

He informed on the latest developments related to satellite accounting in Mexico (non-profit institutions, unpaid work of households, health, culture, tourism, and environment) as well as on other research fields (tourism impact on environment: environmentally adjusted tourism GDP, ecosystem extensions).

### [Mr. Antonio Massieu \(INRouTe\): UNWTO MST Initiative and the Measurement and Analysis of Subnational Tourism and Sustainable Development](#)

He informed that the document “measurement of tourism on the subnational level” will be presented on 22 November 2016 in Venice:

[http://www.inroutenetwork.org/wp-content/uploads/2016/10/UNWTO\\_INRouTe\\_Venice\\_workshop\\_2016\\_Agenda.pdf](http://www.inroutenetwork.org/wp-content/uploads/2016/10/UNWTO_INRouTe_Venice_workshop_2016_Agenda.pdf)

### [Ms. Ana Moniche \(Andalusia Regional Government\): The success of policy relevant indicators that are statistically based](#)

She reported on the challenges of developing indicators on regional level which mainly concern:

- Keeping quality standards.
- Definitions of ecosystems (i.e. “beaches”).
- Use of Big Data.
- Data accessibility.
- Availability of data related to skills and education.

### [Mr. Carl Obst \(UNWTO consultant\): Introduction to the key issues for measuring sustainable tourism](#)

He proposed the following items in relation to tourism for further investigations: water, GHG emissions, energy and waste. The measurement challenges should be taken into account and the policy priorities have to be defined.

### [Summary of the discussion](#)

The Working Group of Experts on Measuring Sustainable Tourism:

- Highlighted that prioritisation is necessary and the definition of sustainability must be clear.
- Stressed the need to search for alternative data sources.
- Suggested the development of a “Road map”, organisation of work, use of results, question of resources, and communication with/to users.
- Recommended a step by step approach; achieve what is internationally comparable and which extensions this entails (SEEA physical flow account, TSA framework; ecosystem account is not recommended so far).
- Called for coordination between institutions and foundation of inter-institutional platform.

## Session F. Way forward and closing: Concluding Remarks by the Chair

Mr. Laimer thanked all for the useful and fruitful contributions and thoughts. The steps taken towards a statistical framework for MST have been:

Jan 2015	<b>UNWTO STSA Committee</b>	
June 2015	<b>UNCEEA Meeting</b> (UN Committee on Environmental Economic Accounting)	Supported UNWTO proposal <i>Mainstreaming tourism in sustainable development</i> and to link SEEA-TSA. Stressed the need to bring communities together, in particular tourism statistics experts and SEEA experts. Form a group to assist in the drafting of framework
Oct 2015	<b>London Group</b> (SEEA Ecosystems) Meeting	MST as means to help make SEEA and Ecosystems accounting more policy relevant
Nov 2015	<b>preliminary meeting MST</b> WG in Puerto Rico	Austria, Italy, Mexico, Netherlands, Wales expressed interest in piloting
Jan 2016	<b>UNWTO STSA Committee</b> in Georgia	Welcomed and supported MST Project Overview, the proposed scope and timeline, and encouraged UNWTO to continue the work as outlined Goal should be to propose an international statistical framework
	<b>Formation of MST Working Group of Experts</b>	by UNSD/UNWTO, under auspices UNWTO Committee Statistics & TSA and UNCEEA
Jun 2016	<b>UNCEEA Meeting</b>	MST to highlight application of SEEA Ecosystem Accounting in spatial dimension
Sept 2016	<b>London Group Meeting</b>	

The steps ahead involve:

Oct 2016	<b>Meeting of Working Group of Experts on MST</b>	- Scope, priorities - Next steps
Oct-Nov 2016	<b>UNWTO Executive Council</b>	
<b>* 2017 UN International Year of Sustainable Tourism for Development *</b>		
Jan 2017	<b>UNWTO STSA Committee</b>	- Decisions and recommendations on MST
Mar 2017	<b>UN Statistical Commission</b>	UNWTO SG Report Possible side event
Apr 2017	<b>UNCEEA Technical Committee</b>	
May 2017	<b>UNWTO Executive Council + Regional Commissions</b>	
Jun 2017	<b>UNWTO 6th International Conference on Tourism Statistics</b>	Theme: Measuring Sustainable Tourism (21-24 June) Declaration
June 2017	<b>UNCEEA meeting</b>	
Sep 2017	<b>UNWTO General Assembly</b>	
Sep 2017	<b>London Group meeting</b>	
Jan 2018	<b>UNWTO STSA Committee</b>	
Mar 2018	<b>UN Statistical Commission</b>	

The main objectives for further work could be identified as four streams:

1. Stream I: Statistical framework
  - Describing TSA-SEEA links
  - Key measurement challenges:
    - Demand/supply
    - Attribution in the context of crossing boundaries
    - Sub-national and destination level
    - Social/cultural integration
2. Stream II: Statistical framework –ensuring relevance
  - Scope and framing of Sustainable Tourism
  - Link to key indicators (areas) that need to be sourced from Sustainable Tourism:
    - Building on previous/existing work
    - SDG indicators proposals for IAEG-SDGI: 8.9, 12.b, 14.7
    - “Tourism theme” to complement the above for monitoring the SDGs
  - Analytical applications

3. Stream III: Data sources
  - From existing statistical frameworks & infrastructures for economic/environmental/tourism statistics
  - Administrative sources
  - From social/cultural domain
  - Link to work on “new” sources/ big data
4. Stream IV: Feasibility, testing and implementation
  - Pilot studies
  - Status of implementation in countries, country experiences
  - “Technical note”,
  - Compilation guides, importance of modular approach
  - International reporting: SDGs and other int. datasets
  - Engagement, inter-institutional coordination

Participants were invited to provide comments to the Discussion Papers #1 through #8.

It was announced that the UNWTO 6<sup>th</sup> International Conference on Tourism Statistics will have the theme of “Measuring Sustainable Tourism”, and will take place in the Philippines, 21-24 June 2017. The conference will have a ministerial session where a Declaration will be adopted.

#### **Closing Speech by Mr. Carlos Vogeler, UNWTO Executive Director for Member Relations**

Mr. Vogeler thanked the Working Group for the work, the Secretariat and the Chair for the enthusiastic discussions and contributions which are an important part of the success of the work. The importance of advancing towards a Statistical Framework for Measuring Sustainable Tourism, and UNWTO’s full commitment to achieve this, is reiterated.



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## Discussion Paper #1 – Framing Sustainable Tourism

### 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.

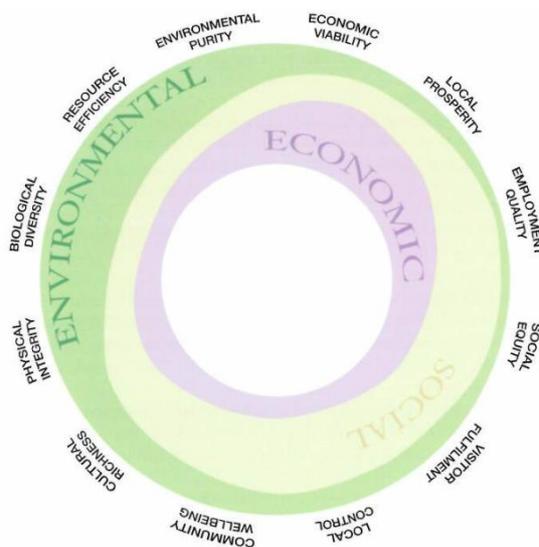
Source: UNEP/UNWTO 2005, Making Tourism More Sustainable: A Guide for Policy Makers, Box 1.1

*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 Eurostat<sup>1</sup>, the OECD<sup>2</sup> and the European Commission's initiative on a European Tourism Indicators System (ETIS) for sustainable destination management<sup>3</sup>.

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 framework<sup>4</sup>. 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

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

<sup>2</sup> 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>).

<sup>3</sup> See: [http://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators\\_en](http://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_en).

<sup>4</sup> 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>.

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 Consumption<sup>5</sup>. 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)<sup>6</sup>.

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 NECSTouR<sup>7</sup> 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 website<sup>8</sup>.

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 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 Community<sup>9</sup>.

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.

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<sup>5</sup> 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.

<sup>6</sup> 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.

<sup>7</sup> Network of European Regions for a Sustainable and Competitive Tourism (NECSTouR).

<sup>8</sup> [http://statistics.unwto.org/studies\\_experiences](http://statistics.unwto.org/studies_experiences).

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

### 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.

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 (CO<sub>2</sub> 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**

<b>Policy themes</b>	<b>Sustainable tourism indicator areas</b>
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

<b>Policy themes</b>
8. Cultural Richness
9. Physical Integrity
10. Biological Diversity
11. Resource Efficiency
12. Environmental Purity
<i>Source: UNEP/UNWTO (2005) Making Tourism More Sustainable: A Guide for Policy Makers, Box 1.1</i>

<b>Sustainable tourism indicator areas</b>
8. Managing scarce natural resources
9. Limiting impacts of tourism activity
10. Controlling tourist activities and levels
11. Destination planning and control
12. Designing products and services
13. Sustainability of tourism operations and services
<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	
Source: Adapted from UNEP/UNWTO (2005) Making Tourism More Sustainable: A Guide for Policy Makers, Box 1.1 and Section 1.8	

**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 domains<sup>10</sup> broadly grouped under tourism activity, economic, environment, social and governance headings<sup>11</sup>. 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.

<sup>10</sup> 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.

<sup>11</sup> 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
	<b>Tourism activity</b>												
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	X
Tourism satisfaction and ratings				X	X	X	X	X	X		X	X	X
Events, sites and cultural assets	X	X								X	X	X	
<b>Economic</b>													
Employment and income	X				X	X							
Transport statistics	X										X		
Infrastructure						X		X	X		X		
<b>Environment</b>													
Water and sewage					X	X	X	X	X				
Waste					X	X			X				
Energy and GHG emissions								X	X		X		
Environmental condition						X	X		X		X		
Environmental expenditure							X	X	X				
<b>Social</b>													
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		
<b>Governance</b>													
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		
<b>OTHER DOMAINS</b>													
<b>Economic</b>	Housing and cost of living; Financial statistics; International trade and payments; Government finance												
<b>Environment</b>	Land use; Climate events / disasters												
<b>Social</b>	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, etc<sup>1</sup>.

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.

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<sup>1</sup> 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)
<b>Tourism activity</b>		
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	-	-
<b>Economic</b>		
Employment and income	2	2
Transport statistics	-	1
Infrastructure	-	-
<b>Environment</b>		
Water and sewage	3	2
Waste	3	2
Energy and GHG emissions	2	1
Environmental condition	-	-
Environmental expenditure	-	-
<b>Social</b>		
Community attitudes and participation	2	1
Training and qualifications	-	-
Health	1	-
Crime and safety	-	1
<b>Governance</b>		
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 driven<sup>2</sup> 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.

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<sup>2</sup> 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"> <li>➤ Local satisfaction level with tourism (questionnaire)</li> </ul>
Effects of tourism on communities	<ul style="list-style-type: none"> <li>➤ Ratio of tourists to locals (average and peak period/days)</li> <li>➤ Percentage who believe that tourism has helped bring new services or infrastructure. (questionnaire-based)</li> <li>➤ Number and capacity of social services available to the community (percentage of which are attributable to tourism)</li> </ul>
Sustaining tourist satisfaction	<ul style="list-style-type: none"> <li>➤ Level of satisfaction by visitors (questionnaire-based)</li> <li>➤ Perception of value for money (questionnaire-based)</li> <li>➤ Percentage of return visitors</li> </ul>
Tourism seasonality	<ul style="list-style-type: none"> <li>➤ Tourist arrivals by month or quarter (distribution throughout the year)</li> <li>➤ Occupancy rates for licensed (official) accommodation by month peak period relative to low season and percentage of all occupancy in peak quarter or month)</li> <li>➤ Percentage of business establishments open all year</li> <li>➤ Number and percentage of tourist industry jobs which are permanent or full-year (compared to temporary jobs)</li> </ul>
Economic benefits of tourism	<ul style="list-style-type: none"> <li>➤ Number of local people (and ratio of men to women) employed in tourism (also ratio of tourism employment to total employment)</li> <li>➤ Revenues generated by tourism as percentage of total revenues generated in the community</li> </ul>
Energy management	<ul style="list-style-type: none"> <li>➤ Per capita consumption of energy from all sources (overall, and by tourist sector – per person day)</li> <li>➤ Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques</li> <li>➤ Percentage of energy consumption from renewable resources (at destinations, establishments)</li> </ul>
Water availability and conservation	<ul style="list-style-type: none"> <li>➤ Water use: (total volume consumed and litres per tourist per day)</li> <li>➤ Water saving (percentage reduced, recaptured or recycled)</li> </ul>
Drinking water quality	<ul style="list-style-type: none"> <li>➤ Percentage of tourism establishments with water treated to international potable standards</li> <li>➤ Frequency of water-borne diseases: number/percentage of visitors reporting water-borne illnesses during their stay</li> </ul>
Sewage treatment (wastewater management)	<ul style="list-style-type: none"> <li>➤ Percentage of sewage from site receiving treatment (to primary, secondary, tertiary levels)</li> <li>➤ Percentage of tourism establishments (or accommodation) on treatment system(s)</li> </ul>
Solid waste management (Garbage)	<ul style="list-style-type: none"> <li>➤ Waste volume produced by the destination (tonnes) (by month)</li> <li>➤ Volume of water recycled (m<sup>3</sup>)/Total volume of waste (m<sup>3</sup>) (specify by different types)</li> <li>➤ Quantity of waste strewn in public areas (garbage counts)</li> </ul>

<b>Development control</b>	<ul style="list-style-type: none"> <li>➤ Existence of a land use or development planning process, including tourism</li> <li>➤ Percentage of area subject to control (density, design, etc.)</li> </ul>
<b>Controlling use intensity</b>	<ul style="list-style-type: none"> <li>➤ Total number of tourist arrivals (mean, monthly, peak periods)</li> <li>➤ 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</li> </ul>

**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 <sub>2</sub> 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

## Discussion Paper #2 – Applying and integrating the TSA and SEEA frameworks for measuring sustainable tourism<sup>1</sup>

### 1. Introduction

#### *Context*

When trying to provide a picture of sustainable tourism, the underlying question that is being addressed within a decision making process is whether, in relation to tourism activity, a country or region can continue to “keep doing what is currently being done” – i.e. is business as usual a long term option<sup>2</sup>? Of course, the answer to this question will depend on broader societal preferences and these are not the subject of discussion within descriptive statistics. However, the use of a statistically based approach can provide an integrated picture of what business as usual actually looks like in terms of past trends and current structures.

Statistical information on tourism activity should inform a discussion of three distinct but related concepts of sustainability:

- The extent of imbalances in tourism activity
- The extent to which current activity is reaching assessed capacity or thresholds
- The degree of resilience to shocks

The answers to these questions do not emerge directly from statistical information but appropriately measured and well-framed data should ensure an informed discussion of these issues. It is in providing a common understanding of the history and current state of tourism activity from a range of perspectives that the data from a statistical framework will prove of most value.

In concept, as described in Discussion paper #1 Framing Sustainable Tourism, a statistical framework for measuring sustainable tourism would encompass many areas of statistics, such as those related to tourism activity, economic, environmental, social and governance domains, see Box 1. This broad scope is required to ensure coverage of all policy themes that are relevant when dealing with the role of tourism in sustainable development. Initially however, a narrower scope is considered appropriate for MST. The focus is on the tourism activity, economic and environmental domains since this scope provides a clear basis to demonstrate the value of a statistical framework for measuring sustainable tourism, and also underpins the derivation of a large number of indicators (and the data to populate them) relevant in a sustainable tourism context.

Discussion paper #3 The Role of Statistical and Accounting Frameworks, describes the relevance of statistical and accounting frameworks to underpin analysis of sustainability. Its conclusion forms the basis for the description of a statistical framework that brings together the tourism activity, economic and environmental domains. The proposal is to describe a framework that provides appropriate measurement boundaries, concepts and definitions, and highlights underlying relationships between stocks and flows.

The development of the statistical framework for measuring sustainable tourism is based in large part on the integration of existing accounting frameworks that have been developed for measuring tourism activity and its economic contribution, Tourism Satellite Accounts (TSA), and for measuring the interaction between economy and environment, the System of Environmental-Economic Accounting (SEEA). Both of these frameworks are based on the accounting framework for measuring the economy – the System of National Accounts (SNA). While the TSA and SEEA frameworks have been developed separately, there have been interesting parallels in their development and the associated statistics as reflected in Figure 1.

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<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEA) and revised by Cesare Costantino, UNWTO Consultant.

<sup>2</sup> In the sense of 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).

### Box 1: Primary statistical domains of the MST\*

#### Statistical domains

##### Tourism activity

- Tourist numbers and movements
- Tourism demand and expenditure
- Tourism business production and characteristics
- Tourism satisfaction and ratings
- Events, sites and cultural assets

##### Economic

- Employment and income
- Transport statistics
- Infrastructure

##### Environment

- Water and sewage
- Waste
- Energy and GHG emissions
- Environmental condition
- Environmental expenditure

##### Social

- Community attitudes and participation
- Training and qualifications
- Health
- Crime and safety

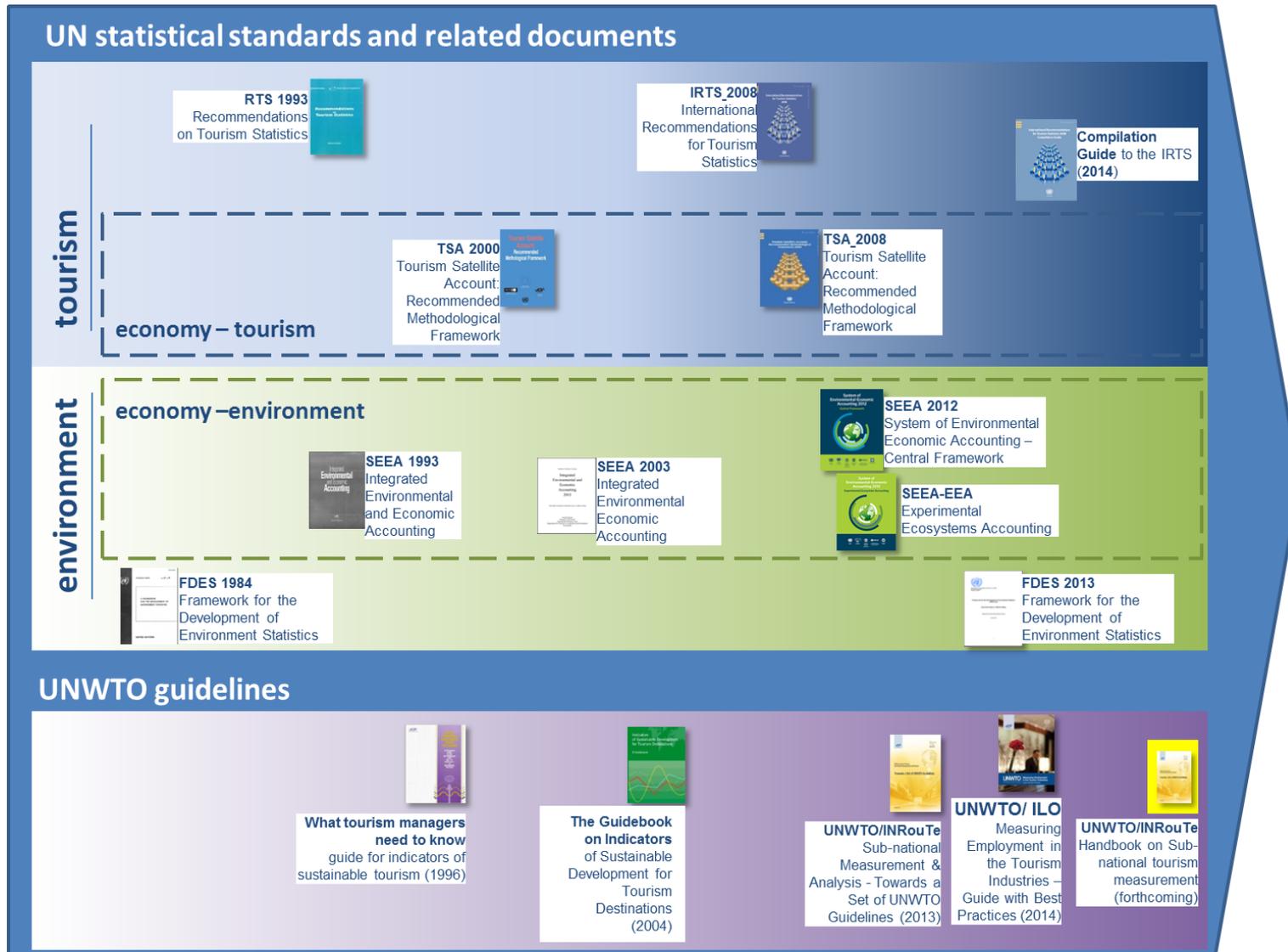
##### Governance

- Tourism planning, promotion and management
- General planning and other policies

Source: Based on analysis of indicators from UNWTO (2004) *Indicators of Sustainable Development for Tourism Destinations: A Guidebook*. See Discussion paper #1 *Framing Sustainable Tourism*

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

Figure 1. Some key building blocks for a statistical framework for measuring sustainable tourism



Since both of these accounting frameworks have their origins in the SNA, the conceptual step of integrating tourism activity from an economic perspective and related environmental stocks and flows is considered within reach. This paper explores the pathways forward towards integration and application of the TSA and SEEA frameworks.

### Linking TSA and SEEA

Work on combining the TSA and SEEA frameworks has been considered previously, for example in work by Canada<sup>1</sup> and Italy<sup>2</sup>. An example of connecting TSA and SEEA has also been included in the SEEA Applications and Extensions, Chapter 4. Using these earlier studies, the MST will look to ensure a full articulation and resolution of various technical issues (see Discussion paper #7) while recognizing the need for the framework to be widely applicable around the world.

A general issue that must be considered is that accounting as applied in the SEEA framework is primarily from a supply or **production** perspective – i.e. the common focus is on natural inputs (e.g. water, minerals, energy) to economic units and residual flows (e.g. GHG emissions, wastewater, pollutants, soil waste) from economic units.

Tourism statistics and the associated TSA also reflect a demand or **consumption** perspective whereby the measurement scope depends primarily on the characteristics of the consumer, i.e. whether or not the consumer is a visitor. Further, the status of an individual consumer as a visitor will change over time as people move in and outside their usual environments. Box 2 articulates this point precisely with respect to the TSA.

### Box 2: Relationship between the Tourism Satellite Account and the central framework of the System of National Accounts 2008

Tourism direct gross value added (TDGVA), the aggregate used in the TSA to measure the size of tourism, is defined as part of the gross value added generated in the economy by tourism industries and other industries directly serving visitors in their supply of goods and services in response to internal tourism consumption. Part of this aggregate may be generated by tourism industries, and part of it may also be generated by other industries. The measurement scope of the TSA does not depend primarily on the industries involved, its main focus being on the tourism consumption of goods and services provided by the same industries. On the other side, not all the gross value added of tourism industries (GVATI) is part of TDGVA since these industries may also serve non-visitors, in the same way that non-tourism industries may serve visitors and thus generate part of TDGVA. The latter monetary aggregate does not correspond to the gross value added of any set of productive units developing similar production processes, as is the case of such measurements in the central framework of the SNA 2008.

Source: TSA: RMF 2008 Annex 2

By way of example, the supply and use of water is measured for the whole economy in a SEEA physical flow account for water, including supply and use in the household sector. Among many other pieces of information, this provides, for example, an estimate of the total use of water by restaurants.

A tourism perspective on the other hand, requires an understanding of the share that is attributable to the expenditure/activity of visitors, i.e. those people outside of their usual environment.<sup>3</sup> An important measurement question is therefore what share of water use by restaurants should be considered attributable to visitors (and thus attributable to tourism).

The challenge of integrating production and consumption perspectives in an accounting context will be discussed through the course of developing the statistical framework. Importantly, there are a range of presentations of data following the core TSA and SEEA frameworks that can be envisaged that provide information to support a

<sup>1</sup> Jackson, C. et al. (2008), "Linking the Canadian Tourism Satellite Account and the Canadian System of Environmental and Resources Accounts to measure the environmental impact of tourism in Canada: An exploratory study for two pilot countries", presented to the 9th International Forum on Tourism Statistics, Paris, November 19-21, 2008.

<sup>2</sup> Constantino, C. and A. Tudini (2005) "How to develop an accounting framework for ecologically sustainable tourism" in Lanza A., Markandya P.F. (eds.) *The Economics of Tourism and Sustainable Development*, Edward Elgar, UK.

<sup>3</sup> A *visitor* is a *traveller* taking a trip to a main destination outside his/her *usual environment*, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited. ... Tourism refers to the activity of visitors. (IRTS 2008, para. 2.9).

discussion of sustainable tourism – i.e. no single account or table will provide all of the relevant information. The role of the framework is thus to place the right information in the right context and hence support better informed decision making.

Presentations based on accounting conventions of the SEEA and TSA can be used to derive relevant indicators of sustainable tourism, and to facilitate access to the data needed to populate these indicators. Some of these possible presentations and indicators are shown in this paper.

#### *Scoping a statistical framework for measuring sustainable tourism*

This discussion paper proposes ways in which a statistical framework for measuring sustainable tourism might be developed. The concept of a statistical framework envisaged here includes the application of existing statistical standards for tourism and other statistics, and for accounting as just described. It is also extended to the application of statistical guidance for establishing statistical infrastructure, i.e. the arrangements put in place, commonly at national level, to support the collection and organization of data. Of particular interest is the use of business registers which can form an important base for information about tourism businesses as well as ensuring that there is a good and consistent coverage of information on tourism activity over time.

While all data are potentially of interest to policy and analysis, the design of a statistical framework must balance two driving factors: (i) ensuring a broad coverage of information such that ongoing data collection identify important changes in structure for example, due to changes in visitor behaviour, and (ii) ensuring that the information is presented at a level of detail most suitable to current policy and analytical requirements. Too much focus on either factor will lead to an imbalance in the resulting data set being either too specific and hence unsuitable for capturing structural change over time, or too general and hence unable to support current decision making.

Importantly, and especially with respect to accounting aspects of the framework, there is no a priori prescription on the data sources and methods that are used to collect data that are integrated within the framework. Put differently, a statistical framework should not be considered to relate to a single survey or data collection. Rather, the intent is to create a platform into which all relevant data, irrespective of source, can be considered and from this a single integrated picture of sustainable tourism can be painted. This includes, for example, the potential to integrate information that may be more immediately available such as data on visitor transactions, with information collected of a more structural nature on an annual or 3-yearly basis.

To provide a clear starting point for the description of a statistical framework, the accounting frameworks of the TSA and the SEEA are used as a base and the different possible components of the framework are described in four extensions. Collectively these extensions form a broad statistical framework to underpin measurement of the tourism activity, the economic and the environmental domains relevant in sustainable tourism, consistent with the proposed scoping for the initial phases of MST.

These proposals have not yet been the subject of discussion among experts in this area and should be considered initial ideas aimed solely at demonstrating the potential in this area and also the technical challenges. Further, the descriptions of the accounting extensions in this paper do not imply a requirement for the production of additional data, at least in the short term. Rather, the descriptions are intended to serve as a basis for discussion on how different pieces of information, many of which may be currently available, can be placed within a broader, sustainable tourism context.

#### *Four extensions of the TSA and SEEA accounting frameworks*

Four extensions of the frameworks are described: (i) extensions within the TSA framework; (ii) connections between SEEA based accounts for individual environmental flows (e.g. water, energy, waste) and tourism activity; (iii) accounting for economic and environmental assets following the SNA and the SEEA; and (iv) integration through spatial accounting applying the logic of SEEA based ecosystem accounting.

In the first three extensions, the descriptions of the accounting framework in the following sections are presented at the national level and in terms of annual data. In all cases however, the concepts can be applied at finer spatial levels, including at the level of destinations and sub-national regions, and are suitable for the organization of sub-annual data. In this sense, the accounting framework provides the basis for the comparison and aggregation of information at different spatial levels and at different frequencies, recognizing that not all possible combinations of spatial detail and frequency will be needed or relevant.

In the fourth extension, spatial accounting, the accounting framework naturally operates from a destination type level of detail and hence will be applicable to the organization of information at that level of detail. Spatial accounting may also be conducted on a sub-annual basis; however, since it is at heart an approach that encourages consideration of broader systemic developments over time, a focus on annual data is likely sufficient.

## 2. Extension #1: Extending the TSA framework

### *The TSA*

The TSA framework is articulated in *TSA: Recommended Methodological Framework 2008*<sup>4</sup>. It covers a number of topics from both the demand and the supply side of tourism statistics, framed into 10 core tables. The main economic phenomena covered by these tables include:

- Production, income and value added of tourism characteristic activities
- Tourism expenditure (inbound, outbound, domestic, etc)
- Employment
- Gross fixed capital formation

In sum, the TSA framework provides an agreed basis for defining the extent and structure of tourism activity within an economy using a measurement framework that is the same as used to define the extent and structure of other economic activity such as agriculture, manufacturing, retail, and education.

The TSA uses as its starting point the activity of those people defined as visitors. The accounts of the TSA framework record the tourism expenditure, i.e. the amount paid for the acquisition of consumption goods and services, as well as valuables, for and during tourism trips. This expenditure is matched with the supply of the associated goods and services, ensuring a balance is recorded between supply and use.

### **Box 3. Categories of tourism characteristic consumption products and activities (tourism industries)**

<b>Consumption products</b>	<b>Activities</b>
1. Accommodation services for visitors	1. Accommodation for visitors
2. Food and beverage serving services	2. Food and beverage serving activities
3. Railway passenger transport services	3. Railway passenger transport
4. Road passenger transport services	4. Road passenger transport
5. Water passenger transport services	5. Water passenger transport
6. Air passenger transport services	6. Air passenger transport
7. Transport equipment rental services	7. Transport equipment rental
8. Travel agencies and other reservation services	8. Travel agencies and other reservation services activities
9. Cultural services	9. Cultural activities
10. Sports and recreational services	10. Sports and recreational activities
11. Country-specific tourism characteristic goods	11. Retail trade of country-specific tourism characteristic goods
12. Country-specific tourism characteristic services	12. Other country-specific tourism characteristic activities

The majority of visitor expenditure is on goods and services produced by tourism characteristic activities (see Box 3) and hence there is a particular focus in the TSA accounts on understanding the production, income, employment, investment and value added of these activities.

<sup>4</sup> The United Nations Statistical Commission (UNSC) took note of the TSA: RMF 2008 document at its 39th session (26-29 February 2008). It updates and replaces the previous TSA:RMF 2000 which had been approved by the UNSC at its 31st session (29 February-3 March 2000).

### *Using data from the core TSA for measuring sustainable tourism*

Given the structural information on tourism activity in the TSA, there is data in the core TSA accounts that can be used to inform on sustainability without any particular extension of the core framework. At a global level this has been recognised in the development of indicators for the measurement of progress towards the UN Sustainable Development Goals (SDGs), where indicators of Tourism GDP and Tourism employment derived from the TSA are considered to be key indicators for Targets 8.9 and 14.7<sup>5</sup>.

In addition, the structural information from a TSA would help to identify potential imbalances in the types of visitors (inbound, outbound or domestic, or based on purpose of travel), use of imports to support tourist demand, and the mix of value added across different tourism activities.

Extensions in the form of additional detail within TSA core tables, might be considered to integrate information on specific market segments such as relating to cruise ships, eco-tourism, meetings industries (sometimes referred to as MICE<sup>6</sup>), etc. Each of these different views will inform on the past trends and current structure in an integrated way in which all of the data are confronted.

### *Assessing seasonality*

In many locations, a key aspect in understanding the sustainability of tourism activity is the pattern of activity through the year. Since the TSA accounts are framed for the production of annual data they will not necessarily provide the information to support the assessment of sub-annual trends. Nonetheless, it will often be the case that for key variables such as visitor arrivals and hotel occupancy, the information underpinning the TSA estimates will be sub-annual (monthly or quarterly). A relevant extension to the TSA framework would therefore be to present certain sub-annual series ensuring that these data have been appropriately integrated with other information within the TSA framework. Information on visitor arrivals in particular may point to issues associated with the use and availability of resources (such as water) in peak times and questions of access and mobility.

### *The role of a business register*

The compilation of TSA accounts can be undertaken using a number of different approaches but generally it will be based on a combination of information from business surveys and visitor surveys. For business surveys it is expected statistical practice that these are conducted using a common or central business register that lists all businesses in the economy and classifies them to standard industry classes.

By using basic information provided by business registers, for those businesses classified to industries corresponding to tourism characteristic activities it should be possible to assess the structure of tourism by size of business (e.g. in terms of turnover or employment)<sup>7</sup>, by ownership (resident or non-resident), by legal entity (corporation, household business), and by other characteristics, depending on the range of information held. By combining this data with information on the value added, employment, tourism share and other data from TSA core tables, a rich picture of tourism activity can then be developed which may be significant in a sustainability perspective. It is worth noting that such a result can be obtained from a standard statistical infrastructure that brings coherence of data across all economic statistics.

It is also the case, on the other side, that many sets of indicators for sustainable tourism that have been developed in the past - such as those in the UNWTO Guidebook - commonly provide information that reflect what can generically be understood as characteristics of tourism businesses: e.g. indicators on whether the business

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<sup>5</sup> Target 8.9: By 2030, devise and implement policies to promote 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

<sup>6</sup> Meetings, incentives, conventions, exhibitions.

<sup>7</sup> For example, the UNWTO *Compendium of Tourism Statistics* compiles a selection of such information from countries worldwide; see: <http://statistics.unwto.org/content/compendium-tourism-statistics>.

at issue have appropriate training schemes, undertake environmental activity, engage with local communities, are connected to central sewage systems, have sustainable tourism policies in place, etc. To date, however, it has been unclear as to how such information might be collected on a standardized basis.

All considered, a business register can play a unique role in providing an underpinning framework for the collection of information on business characteristics.

This is not to suggest that it is a simple consideration to add questions to existing surveys, many factors need to be brought into play. It is simply noted here that, where measurement of sustainable tourism would be better informed by the collection of additional business characteristics, the use of a statistical approach in the form of the business register - which also underpins the data presented in the TSA - would be an excellent starting point.

#### *Extending the TSA to record environmental transactions*

A potential application of the SEEA Central Framework that might be directly considered within a TSA setting is to extend/adapt the TSA accounts for expenditures showing so-called environmental transactions. Environmental transactions encompass payments of environmental taxes and resource rents, receipts of environmental subsidies, and expenditure on environmental goods and services, environmental protection and resource management. Following the economy wide definitions provided in the SEEA Central Framework, recording these transactions in relation to tourism activity could be developed.

### **3. Extension #2: Connecting SEEA physical flow accounts and tourism activity**

The accounting framework of the SEEA includes accounts across a wide range of environmental stocks and flows. The SEEA Central Framework records information on individual environmental stocks and flows such as mineral resources, land, soil, water, timber, energy, GHG emissions and solid waste. It accounts for these stocks and flows in either (i) asset accounts, where stocks of environmental assets and changes in these stocks are measured over an accounting period; or (ii) physical flow accounts where the interactions between the environment and the economy are recorded.

The SEEA Experimental Ecosystem Accounting (SEEA EEA), on the other hand, records information on environmental stocks and flows as they co-exist within a local area, i.e. within an ecosystem. The focus is thus on understanding how local ecosystems are changing over time and whether the capacity of these ecosystems to provide benefits to society is changing.

While tourism activity depends, in many instances, on the use of the natural environment (e.g. beaches, reefs, forests, etc), tourism is not a primary user of individual environmental stocks such as minerals, timber and fish. Consequently, there is less direct interest for MST in considering changes in these types of natural resources.

The main focus in understanding the connections between tourism activity and the environment by means of a statistical framework that is based on a combination of TSA and SEEA thus lies in recording

- the use in tourism activity of environmental flows such as water and energy
- the generation by tourism activity of environmental flows such as GHG emissions, solid waste, wastewater and other pollutants
- the changing condition of individual environmental assets, that provide flows used in tourism activity, e.g. water and energy flows, as well as of ecosystems, providing services to tourists.

The types of accounts that are required for the first two categories of environmental flows follow the structure of the standard physical flow accounts of the SEEA Central Framework, Chapter III, with additional industry detail to highlight tourism activity. Accounting in physical units for these environmental flows is discussed hereafter, while tourism's connection to individual environmental assets and to ecosystems is discussed in the following section.

### *Physical flow accounts highlighting tourism characteristic industries*

The most straightforward connection between SEEA and tourism activity is through compiling physical flow accounts that highlight the flows for tourism characteristic activities. Tourism characteristic activities are the activities that typically produce tourism characteristic products. Tourism characteristic products are those that satisfy one or both of the following criteria: (a) tourism expenditure on the product should represent a significant share of total tourism expenditure (share-of-expenditure/demand condition); (b) tourism expenditure on the product should represent a significant share of the supply of the product in the economy (share-of-supply condition)<sup>8</sup>. Box 3 provided a list of the twelve categories of tourism characteristic activities. Categories 1 through 10 comprise the core categories for international comparability purposes. The remaining two categories are country specific: category 11, covering retail trade of goods that may be relevant in the country; category 12, covering other tourism characteristic activities producing services that are country-specific.

The SEEA presents a range of physical flows accounts, the primary ones concerning energy flows, water flows including wastewater, air emissions, solid waste and emissions to water. All of these topics may be of interest in the context of assessing sustainable tourism. A series of these accounts would help to inform discussion of, for example, energy use efficiency, water use efficiency, greenhouse gas emissions, and flows of solid waste by tourism characteristic industries.

Importantly, by recording these environmental flows for tourism characteristic industries within the SEEA framework, the estimates are reconciled to the whole economy flows rather than considering stand alone estimates of water use. This improves data quality but also supports comparison and benchmarking between tourism industries and other industries.

Examples of potential structures of accounts for water use and GHG emissions are shown in the following two tables. For simplification of these accounts, five tourism characteristic activities are shown<sup>9</sup> but alternative presentations could be used. The same ideas as presented here can be extended to other physical flow accounts such as for energy and solid waste, i.e. by adapting the corresponding accounts from the SEEA Central Framework.

The physical flow account for water has been somewhat simplified for demonstration purposes compared to the standard table in the SEEA Central Framework. In practice, a more complete account incorporating flows of recycled and reused water would be developed in line with the format in the SEEA Central Framework. These tables reflect a production or supply perspective and hence do not require changes to the conceptual framework for physical flow accounts outlined in the SEEA Central Framework. The largest challenge in compiling accounts like these will be collecting data on the physical flows for the specific tourism industries.

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<sup>8</sup> See IRTS paras 5.8-5.11 & 5.18.

<sup>9</sup> All types of passenger transport (rail, road, water and air) are grouped together, and cultural and sports and recreational activities are also grouped together.

**Table 1: Physical flow account for water for tourism characteristic activities**

Physical supply table for water											
Abstraction of water; Production of water; Generation of return flows							Flows from the rest of the world Imports	Flows from the environment	Total supply		
Tourism characteristic activities						Water collection, treatment and supply				Sewerage	Other industries
Accomm odation	Food & beverage	Transport	Culture & Recreation	Other	Total						
<b>(I) Sources of abstracted water</b>											
Inland water resources											
Other water sources											
Total abstracted water											
<b>(II) Abstracted water</b>											
For distribution											
For own-use											
<b>(III) Wastewater generated</b>											
<b>(IV) Return flows of water</b>											
<b>(V) Evaporation of abstracted water, transpiration and water incorporated into products</b>											
<b>Total supply</b>											
<b>Physical use table for water</b>											
Abstraction of water; Intermediate consumption; Return flows							Final consumption	Accumulation	Flows to the rest of the world Exports	Flows to the environment	Total use
Tourism characteristic activities						Water collection, treatment and supply					
Accomm odation	Food & beverage	Transport	Culture & Recreation	Other	Total						
<b>(I) Sources of abstracted water</b>											
Inland water resources											
Other water sources											
Total use abstracted water											
<b>(II) Abstracted water</b>											
Distributed water											
Own use											
<b>(III) Wastewater</b>											
<b>(IV) Return flows of water</b>											
<b>(V) Evaporation of abstracted water, transpiration and water incorporated into products</b>											
Total											
<b>Total use</b>											

**Table 2: Physical flow account for GHG emissions for tourism characteristic activities**

	Supply table for air emissions							Total supply of emissions	Use table for air emissions		
	Generation of emissions								Accumulation	Flows to the Environment	Total use of emissions
	Tourism characteristic activities						Other industries		Households	Emissions from landfill	Emissions released to the environment
Type of substance	Accommodation	Food & beverage	Transport	Culture & Recreation	Other	Total					
Carbon dioxide											
Methane											
Dinitrogen oxide											
Nitrous oxides											

In addition to being aware of the practical challenge of data collection, it is important to recognize also a conceptual issue. Due to the production perspective followed, the aggregate physical flows across tourism industries shown in these tables would overstate the direct contribution of tourism activity since some proportion of the flows recorded in these tables would relate to non-tourism activity. For example, not all of the water used by the food and beverage industry will relate to tourism activity. On the other hand, there may be flows relating to non-tourism characteristic industries that are part of the provision of products to visitors that would be omitted in such an aggregation.

For some physical flows, particularly water, it is likely to be particularly important to understand the sub-annual and seasonal patterns. In most locations, tourist activity will peak at certain times of the year and the sustainability of tourism activity will require an understanding of whether the peak demand can be satisfied given expected patterns of supply of natural resources, which may also be affected by seasonal variation. It is also likely to be appropriate in certain cases, again including water, to understand the spatial distribution of flows within a country. The development of the MST statistical framework will need to consider appropriate means by which sub-annual and sub-national information can be incorporated. This is discussed further in Discussion paper #4.

When collecting information on these environmental flows it may be useful to also gather information that highlights some characteristics of tourism businesses as distinct from only the physical flows. For example, it may be possible to collect information on the number of tourism businesses with renewable energy sources, the extent to which they are connected to sewage treatment systems or their use of alternative/private sources of water, including e.g. desalination plants.

#### *Embodied environmental flows for tourism characteristic products*

All products are outputs from production processes which are, at an aggregate level, reflected in standard supply and use tables. By using the information on the relationships between inputs and outputs of goods and services reflected in these tables, in principle it is possible to determine a link between the environmental flows of specific production processes and the outputs that are ultimately consumed. For example, it could be possible to estimate the quantity of energy embodied in the provision of accommodation services for visitors. The same logic can be applied for other environmental flows such as water and GHG emissions.

The techniques of attributing environmental flows to categories of final demand are well established and widely applied. The SEEA Applications and Extensions provides an introduction to the relevant approaches and associated literature in Chapter III and, in Chapter IV, it provides an example of applying this approach in relation to household consumption. It could be possible to use the principles outlined in SEEA Applications and Extensions to attribute environmental flows to tourism characteristic products, potentially using information on tourism expenditure also to differentiate this attribution by different types of visitor.

#### **4. Extension #3: Assessing the environmental asset and tourism infrastructure base**

The third area of extension and application of the TSA and SEEA to the measurement of sustainable tourism lies in recording information on the asset base that underpins the production of tourism goods and services. This includes both tourism infrastructure and individual environmental assets. The TSA provides an entry point for the measurement of economic infrastructure through recording of gross fixed capital formation, while the SEEA provides a comprehensive framework for the measurement of environmental assets. This section considers both of these asset types.

#### *Recording information on environmental assets*

The SEEA describes two approaches to the measurement of environmental assets. The first concerns the measurement of individual assets such as minerals, energy resources, timber, fish, soil and water. This is described in the SEEA Central Framework. Many of these assets are the focus of extraction or use by primary industries and do not directly support tourism activity. Consequently, there is likely to be little need to develop estimates of the stocks and changes in stocks for these resources in the context of measuring sustainable tourism.

The main exception in this regard is the measurement in physical terms of water resources. In locations and countries where there are concerns about the availability of water to support tourism activity, it will not be sufficient to record only the levels of water use by tourism activities as described in the previous section. In addition it will be necessary to record information on the stock of water and changes in this stock. The appropriate account is the water resources asset account – shown below in Table 3. This account records the stock of water at the beginning and end of the accounting period and the changes in the stock of water due to both human activities and natural phenomena such as precipitation and evaporation. The information can provide a basis for the assessment of the pressure being exerted on water resources through abstraction for economic activity including for tourism.

Ideally, as explained in the SEEA Central Framework, water resources asset accounts would be compiled for each water catchment across a country. In the context of assessing sustainable tourism it would be appropriate to focus only on those catchments where tourism activity is significant.

Another individual asset for which asset accounts might be developed are accounts for selected species of wild animals, for example, animals that provide the focus for safari and related activities in national parks. Recording changes in the stock of key species over time, perhaps utilizing park management information, would support an understanding of the environmental assets supporting tourism activities.

Finally, land is also an individual asset described in the SEEA Central Framework which is to be considered. Accounting for changes in the composition of land is a fundamental feature of the SEEA since land provides the space in which economic and social activities are undertaken and also because meaningful groupings of land areas can be used to provide a measurement basis for ecosystem accounting. The development of land accounts for both land use and land cover as articulated in the SEEA Central Framework would help to provide the basis for understanding the spatial context within which tourism activity takes place.

The second approach to measuring environmental assets in the SEEA is accounting for the extent and condition of ecosystem assets as described in the SEEA Experimental Ecosystem Accounting (SEEA EEA). This approach is discussed in the following section.

**Table 3: Water resources asset account (cubic metres)**

	Surface water				Groundwater	Soil water	Total
	Artificial reservoirs	Lakes	Rivers & streams	Glaciers, snow & ice			
<b>Opening stock of water resources</b>							
<b>Additions to stock</b>							
Returns							
Precipitation							
Inflows – from other territories							
- from other inland water resources							
Discoveries of water in aquifers							
<i>Total additions to stock</i>							
<b>Reductions in stock</b>							
Abstraction							
of which: for hydro power generation							
for cooling water							
for tourism purposes							
Evaporation & Actual evapotranspiration							
Outflows – to other territories							
- to the sea							
- to other inland water resources							
<i>Total reductions in stock</i>							
<b>Closing stock of water resources</b>							

### Tourism infrastructure

Another key aspect in assessing the sustainability of tourism activity concerns the capacity and condition of tourism infrastructure and similar assets such as airports, ports, transport equipment, roads and hotels. The core TSA tables include recording of gross fixed capital formation in these types of assets but do not require recording the so-called capital stock. The development of capital stock estimates is a relatively involved process and would not be an immediate area of focus for measurement for MST. However, it would likely be relevant to collect information on indicators of infrastructure capacity and condition to provide insight to the discussion of sustainable tourism. Examples of such indicators include number of beds/rooms in hotels, road quality indicators, number of scheduled flights, cruise ship berths, number of taxis. Such information would support a discussion on the requirements for investment in infrastructure.

### 5. Extension #4: Connecting sustainable tourism and ecosystem accounting

Sustainable tourism has commonly been conceptualized and applied at a destination level. This focus on specific areas within a country has a natural connection to the spatial accounting approach used in ecosystem accounting described in the SEEA EEA. One area of focus in the development of the statistical framework will therefore be on developing a set of information that supports analysis at a sub-national spatial level.

The SEEA EEA describes a number of ecosystem accounts. The common basis for these accounts is the delineation of spatial areas across a landscape into different ecosystem types – e.g. forests, coastal zones/beaches, wetlands, agricultural areas. Each distinct spatial area reflecting a single ecosystem type is

considered to provide the boundary of an ecosystem asset. Ecosystem assets may change in area over time, e.g. through deforestation, and may change in condition over time – i.e. the ecosystem functioning, integrity or health may rise or fall. These changes in ecosystem assets can be recorded in accounts.

Each ecosystem asset supplies a stream of ecosystem services, essentially outputs of the ecosystem functioning, which are very often used by economic units as inputs to production processes or consumed by individuals and society at large. Ecosystem services are commonly categorized into provisioning, regulating and cultural services. For tourism activity, flows of cultural services in which individuals engage with nature for recreation and enjoyment is perhaps of foremost interest. The supply and use of ecosystem services can be recorded in accounts and linked to the production of other outputs by economic units.

Although much further discussion on the application of ecosystem accounting to tourism is required, there appears a direct link that can be made between the spatial detail required for ecosystem accounting and the most common focus of sustainable tourism on destination level indicators. Put differently, application of ecosystem accounting principles and the development of ecosystem accounts should provide an information set that can be directly used at destination level to progressively build a picture of tourism's use of and impact on local ecosystems.

- Understand the size and location of ecosystem assets that are of primary interest in the local area
- Record how these ecosystem assets are changing in condition and the extent to which the change in condition is a result of tourism activity
  - This could be negative e.g. where tourism activity leads to poor quality water due to lack of sewage treatment, or loss of forest condition due to excessive numbers of tourists
  - Or it could be positive where activity by tourism business leads to ecosystem restoration or protection.
- Understand the flows of ecosystem services that are used by tourism businesses, for example in the production of ecotourism outputs.

The ecosystem accounts that might be developed in this section would provide a framework for incorporating information on

- protected areas
- biodiversity and iconic species
- water quality
- beach, seas water and reef quality/condition
- air quality

In concept, adapting ecosystem accounting to tourism would require the delineation of spatial areas for analysis including the tourism destination itself and related ecosystems, for example beaches, national parks, marine areas, etc. For each spatial area, an assessment would be made of ecosystem condition, for example using indicators of the quality of beaches, which could be tracked over time to provide insight into the environmental impact that could be attributable to tourism activity. From a supply perspective, the scope of accounting might be extended to include the changing condition of water catchments and groundwater systems that underpin the provision of water to support tourism activity.

Further, assessment could be made of the supply of ecosystem services from the various ecosystems including those services that contribute to tourism activity but also other services that may be jointly produced. For example, carbon sequestration of forests which are visited by tourists. An important distinction might be identified between visitor direct consumption of natural inputs, e.g. water; and visitor use of ecosystems for recreation, e.g. lakes, rivers and beaches. The allocation of ecosystem services to various beneficiaries, including visitors, permanent residents of the area and others, can support a broader discussion on the potential changes in the mix of ecosystem services supply, and also on (related) economic alternatives, associated with tourism activity and development.

In the first instance, ecosystem accounting in physical terms would be a likely focus. However, there may be interest in the valuation of ecosystem services and related ecosystem assets. To this end, the fact that much information on tourism can be attributed to specific destinations, may provide information to support direct valuation of ecosystem services. This may in turn be used to support broader work on ecosystem accounting. These issues are discussed further in Discussion paper #4.

Finally, it is noted that the spatial accounting for ecosystem assets envisaged in the SEEA EEA, can also be extended to consider a broader range of assets that are present in the landscape. For example, to understand changes in particular spatial areas it may be relevant to consider the influence and condition of infrastructure that supports tourism such as walkways and viewing platforms and camping sites. Also, it would be appropriate to account spatially for cultural assets that may be frequently visited. In short, the spatial accounting principles of ecosystem accounting provide a basis for capturing many aspects of relevance at a destination level.

## **6. Conclusions**

The purpose of this paper was to provide some initial proposals on the design of a statistical framework for measuring sustainable tourism. This has been achieved by describing four extensions to the existing international accounting standards for TSA and SEEA. The extensions proposed highlight that in some areas it may well be possible to make direct use of available information to compile relevant data. In other areas, particularly in relation to environmental stocks and flows where the underlying statistics are commonly less developed, it will be necessary to collect additional information.

At the same time, by making the connection between the measurement of sustainable tourism and these established accounting frameworks, it will be possible to take advantage of measurement improvements that take place, particularly in the area of environmental accounting. This approach will support not only the more efficient collection of information for measuring sustainable tourism but will also facilitate the compilation of comparable data between tourism and other activities.

More generally, the development of a statistical framework, following the types of extensions noted here will help secure the advantages of statistical and accounting frameworks highlighted in Discussion paper #3. These advantages which have long been held by users of economic data are within reach of users of data on sustainable tourism.

As noted at the outset of this paper, these proposals have not been the subject of discussion and debate among experts in this field. They should therefore not be considered definitive and modification and refinement of the proposals should be expected. A key feature of the first round of discussion should be the gathering of many different perspectives to ensure that the final proposals for a statistical framework are both relevant and feasible.

## Discussion Paper #3 – Role of statistical and accounting frameworks for measuring sustainable tourism<sup>1</sup>

### 1. Introduction

The MST initiative is targeted at developing a statistical framework for sustainable tourism. The purpose of this paper is to describe the intended scope of the statistical framework under development and to explain the role that such a framework can play to improve the information set underpinning the assessment and monitoring of progress towards sustainable tourism.

The broad rationale for developing a statistical framework is the lack of data that have been readily collected and organised to inform on the multiple dimensions of sustainable tourism. The improvement of the information set is required to meet:

- The increasing need to find integrated policy solutions across multiple domains and varying spatial scales;
- The need for greater co-ordination among institutions, sectors and countries;
- The need for increased efficiency, effectiveness and continuity in data collection and management;
- The need for reporting to multiple national and international programs, including for example, SDG reporting.
- The need to evaluate the adequacy, or fitness for purpose, of data from various sources and frequencies including survey data, census data, administrative data and emerging sources of big data.

A statistical framework should provide advances in all five of these areas.

### 2. The scope of statistical frameworks

Box 1 provides a short definition of statistical frameworks that gives a good entry point for those not familiar with the use of statistical frameworks. For MST purposes, a statistical framework covers three main elements

- i. the use of core statistical infrastructure to underpin the collection of data, in particular the use of business register
- ii. the use of internationally agreed concepts, definitions and classifications for the measurement of individual data sets, for example the definition of employment or visitors
- iii. the use of accounting frameworks to provide a basis for the integration of data across different data sets using consistently defined measurement boundaries and common terms and language; TSA and SEEA are crucial in this respect.

All three of these elements underpin the potential to develop and apply a statistical framework for the measurement of sustainable tourism. The use of core statistical infrastructure supports the co-ordination of data collection activity from multiple sources, the single collection-multiple use of information and improved long term planning for the ongoing collection of data. The use of agreed definitions and terms supports consistency in the collection of data over time and the comparison of data within and between countries. The use of accounting frameworks supports integration of data across domains (e.g. economic, environment and social) and also provides a basis for confronting and integrating multiple datasets to provide a description of trends over different reference periods, across a large number of variables and at different spatial levels. The following section provides more details of these roles and benefits.

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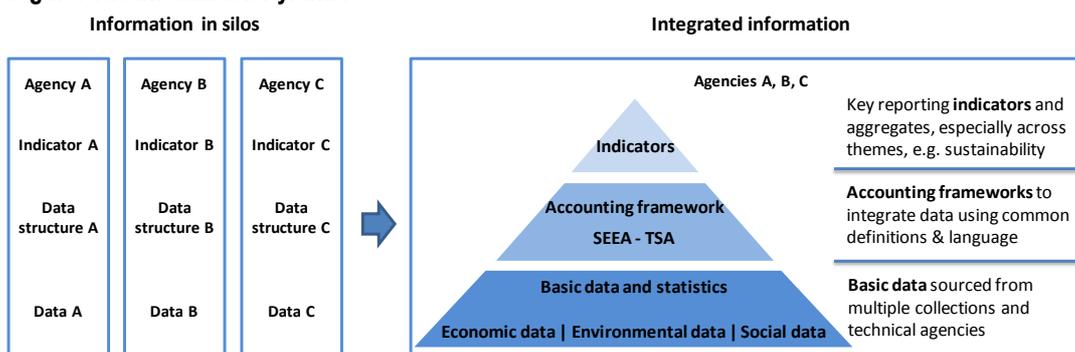
<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEEA) and revised by Cesare Costantino, UNWTO Consultant.

### Box 1: What is a statistical framework?

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

The information pyramid below depicts how one type of statistical framework, accounting frameworks, play the role of integrating data from multiple sources through coherent concepts and definition. The coherent data formed in accounting frameworks can then be used to derive consistent and cross-cutting indicators covering multiple themes. Examples include indicators relating to sustainability, productivity, carrying capacity and resource efficiency.

**Figure: The Information Pyramid**



Some benefits of a statistical framework are that it

- Aligns with information 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

*Adapted from UNSD and Australian Bureau of Statistics*

While the development of a statistical framework for sustainable tourism is a new area of work it builds upon much existing material that describes the relevant elements noted above. In relation to core statistical infrastructure, there is existing guidance on the development of statistics pertaining to the different domains (e.g. for business registers, 2015 UNECE Guidelines on Statistical Business Registers).

In relation to statistical definitions there are many internationally agreed standards. Of most relevance for sustainable tourism are the 2008 International Recommendations on Tourism Statistics (IRTS) and the 2013 Framework for the Development of Environment Statistics (FDES).

In relation to accounting frameworks the key publications are:

- the 2008 System of National Accounts (SNA) – providing guidance on the measurement of the economy in terms of production, consumption, investment and changes in wealth. The SNA has driven advances in the co-ordination of much economic data including balance of payment, prices, international trade, government finance statistics and business surveys.
- The 2008 Tourism Satellite Account: Recommended Methodological Framework (TSA) – providing guidance on the design of accounts for tourism activities that are consistent with the principles of the SNA. This supports the assessment of the economic significance of tourism since tourism activity is measured using the same measurement boundaries as for other industries.
- The 2012 System of Environmental-Economic Accounting (SEEA) – providing guidance on the integration of environmental information with economic data using the same principles and measurement boundaries as the SNA. The core SEEA standard is the SEEA Central Framework. It is supported by complementary releases including SEEA Water, SEEA Energy, SEEA Agriculture, Forestry

and Fisheries and SEEA Experimental Ecosystem Accounting. SEEA Applications and Extensions provides a description on ways in which information recorded in the various SEEA accounts can be used in analysis and monitoring.

A key intention in the development of the statistical framework for sustainable tourism is the integration of the TSA and SEEA frameworks. This is considered quite plausible given that both are based on the accounting principles and measurement boundaries of the SNA.

An important aspect of the statistical framework for sustainable tourism will be the development of data at a sub-national or destination level. In concept all of the statistical standards and guidelines just described can be applied at all levels of spatial detail (in the same way as they are equally applicable for countries of different size). The challenge in most cases is not conceptual but rather the collection of sufficient information at sub-national levels. With this challenge in mind the InRouTe project has been working for some years to advance the development of sub-national tourism statistics picking up on many of the issues to be faced in the MST project. This work to design a Regional Tourism Information System (R-TIS) will also be used to develop the statistical framework for sustainable tourism.

As described in Discussion paper #2, in this phase of the MST initiative the focus is to be placed on the tourism activity, the economic and the environmental domains of sustainable tourism. Extending the coverage to include information on the social and cultural domains is envisaged and will be incorporated in later phases of MST. Again, existing measurement guidance in these domains will be used as the starting point for the application to sustainable tourism measurement.

### **3. The role and advantages of statistical frameworks**

#### *Why incorporate accounting frameworks?*

The potential benefit of developing a statistical framework incorporating accounting approaches is reflected in the role that the standard national accounts framework has played since its initial development in the 1930s. The relative success of the national accounts as an area of statistics is based on three key features that are inherent in accounting based approaches. All of these features are equally inherent in the TSA and SEEA accounting frameworks.

The first key feature is that the national accounts gives internationally agreed definitions in measurement terms to macro-economic concepts such as production, consumption, income, investment, international trade, saving and net wealth. Consequently, the national accounts dataset has provided the evidence base for the development and monitoring of macro-economic policy over the past 70 years.

Second, the SNA provides a coherent measurement framework in which data about the various economic variables and accounts can be confronted and balanced to provide a single, integrated picture of the macro-economic situation of a country. This is not only true in terms of specific time periods but also in terms of providing a consistent time series and, via the international standards, the capacity to compare across countries.

Third, the breadth of the national accounts, including its compilation in both nominal and real terms, provides a framework for the compilation of economic statistics generally. This feature of the accounts has gradually been incorporated into many national statistical systems such that there is increasing alignment, in an end-to-end sense, between the collection of economic statistics (including the use of statistical infrastructure such as business registers) and the release of quarterly measures of economic activity.

Together, these three factors mean that there is an important and long-standing rationale for the support of national accounting systems and the use of accounting frameworks.

### *Advantages of accounting approaches*

The potential advantages in applying accounting approaches emerge in the following ways.

- i. Integration of data across data domains through the use of consistent measurement boundaries and conceptual relationships between variables, e.g. capital and income, supply and use.
- ii. Provision of a common language for the organisation and analysis of information that should support improved dialogue and decision making. This is essential, given the fundamental role that communication plays in driving the improved co-ordination needed between agencies and disciplines involved in sustainable tourism that may not have traditionally worked together.
- iii. By describing a complete conceptual framework, accounting approaches support an understanding of the connections between different data sets, facilitate comparison and reconciliation of data, and allow the identification of data gaps and prioritisation of collection activity.
- iv. By providing a broad coverage of production, income, consumption and investment, accounting approaches encourages communication of a common understanding of past trends and current states. With a common understanding in place, it becomes possible to envisage the regular compilation of a single, broad and coherent database to underpin the derivation of indicators, for example indicators of resource efficiency, productivity and decoupling, as well as more detailed analysis – at sub-national, national and international levels.
- v. Since the statistical framework for sustainable tourism would emerge from economy and environment wide frameworks, it supports comparison across other economic activities and environmental assets, not only those applicable directly to tourism. This enables tourism to be placed in a broader context and facilitates analysis of the connections between tourism activity and other economic and environmental stocks and flows, e.g. via supply chains.
- vi. The basis in the national accounts framework supports the consideration of tourism within standard economic analytical tools such as productivity measurement, input-output modelling and CGE modelling. The data from accounting frameworks is also commonly used as a basis for the development of projections and future scenarios.

### *Limitations of accounting frameworks*

It is likely that a large range of information relevant to the monitoring and analysis of sustainable tourism can be brought within an accounting framework based on the TSA and the SEEA. However, given the list of policy issues in Discussion paper #1 and as evidenced in sets of sustainable development indicators (e.g. UNWTO 2004), there are some relevant indicators that cannot be easily placed within accounting frameworks. For example, information on visitor experience or concerning the perspectives of residents on the impacts of tourism activity on their well-being. In these situations, it will be relevant to recognize the demand for these data, place that information in context and explore opportunities to develop relevant standards for the collection of information – for example ensuring that the geographic scope of data collection can be aligned with data collected for accounting purposes. At the same time, there is ongoing work to standardize the collection of data on well-being (for example by the OECD) and the potential to incorporate these developments will be examined in the future.

One concern in the development of statistical frameworks is that they will force a level of standardization that does not take into account the degree of uniqueness and difference that exists at the destination level, nor take into direct account the views of local participants. This may be true to some degree. However, the statistical framework itself does not prescribe which indicators should be used in any given location. Rather, it provides a type of checklist of all of the different possible elements that can provide a complete picture about a location. Consequently, the uniqueness of each destination will thus emerge from the provision of information on these different elements. Those destinations with beaches and those with mountains can still use the same framework provided that the framework includes both beaches and mountains.

It should also be noted that statistical frameworks are not intended to provide analytical outcomes or results. That is, their role is the organization of information, in this case concerning the structure and trends of sustainable tourism. It would be anticipated that the information set would support a range of analytical applications including

the derivation of indicators, modeling of economic outcomes, and assessments of sustainability. It is also likely that through analysis of data the relative uniqueness of locations can be assessed since comparable information would be available about different locations.

#### *Additional benefits of developing statistical frameworks*

Beyond the specific advantages of accounting frameworks, statistical frameworks relating to the three elements listed in section 2, provide some additional benefits. First, since they are developed in an international context led by the official statistics community they support the comparison of information across countries. This is likely to be of direct relevance for monitoring and reporting on progress towards the recently adopted UN Sustainable Development Goals (SDGs).

Second, also concerning the international nature of statistical frameworks, the use of a single framework to support measurement across countries has the potential to streamline training and capacity building, and in the longer term, implementation of statistical systems. This could support co-ordination for these activities across international agencies and national donor organisations.

Third, both of these points are also relevant within countries. That is, the use of a statistical framework within a country supports comparable reporting among destinations and the potential to streamline the collection of information and the provision of training and other measurement support.

Fourth, and perhaps most importantly, statistical frameworks are designed to support the information requirements for multiple policy responses and perspectives. That is they are designed to provide a single, commonly agreed statement of the current structure and trends. The scope of measurement is not determined in relation to specific policies and, since the scope is intended to be as broad as possible, the same statistical framework should support policy and analysis for policy objectives that change over time in response to changing circumstance. By way of example, the framework for the measurement of GDP has remained essentially unchanged over 50 years and yet has supported policy in all economic circumstances and policy environments.

#### **4. Conclusion**

The development and use of statistical frameworks is standard operating procedure for official statisticians. This paper describes a comprehensive range of reasons for the use of statistical frameworks. While there will be some challenges in developing a statistical framework for sustainable tourism, the potential benefits are clear. Importantly, there is considerable breadth of material to use as a basis for the development of the framework, most notably the accounting frameworks of the TSA and the SEEA. At the same time, the statistical framework for sustainable tourism that is envisaged will encompass some non-accounting aspects that underpin the compilation of official statistics and which are of particular relevance for sustainable tourism.

#### **5. Questions for discussion**

Is the description of statistical frameworks clear and appropriate?

Are there other benefits or limitations of statistical frameworks that should be recognized?



## Discussion Paper #4 – Measuring sustainable tourism at sub-national and destination level<sup>1</sup>

### 1. Introduction – the spatial measurement challenge

The development of sustainable tourism policy advice and indicators has long been targeted at the destination level. There are a number of motivations for this. First, the challenge of balancing outcomes across the social, environmental and economic dimensions of sustainable tourism is revealed clearly when considered in relation to a relatively small spatial area. Indeed, the concerns of individual communities, of local economies and of specific environmental features, may be hidden if considered at larger, national scales. Of course, this is not solely an issue for tourism and applies in many areas where the spatial distribution of people and resources is a key factor in outcomes.

Second, the potential to make specific changes to visitor activity and the development of tourism industries is likely to lie most clearly in the hands of local agencies, for example in terms of development planning, determining access and managing visitor flows. This is also true in other areas of activity although in other areas such as education, health and development programs there may be a stronger influence of national policy particularly in relation to the finances and resources.

Third, although there may be common elements across destinations, each destination is in some way unique and hence there is a need to develop indicators and policy that take into account that uniqueness.

Notwithstanding these motivations, the development of tourism statistics has focused on the compilation of data at national level. This has been driven by two main factors. First, the area of tourism statistics has generally been implemented by national agencies, commonly a national statistics office (NSO) which has a primary duty for the provision of information to inform national governments, for example Ministries of Economy, Planning, Development and Tourism, Central Banks and other agencies such as tourism authorities. Second, NSO are tasked with providing data that is consistent across a country applying standardized methods and definitions and enabling comparison across countries.

The need to provide information from different spatial perspectives is real but not unique to tourism. Indeed, the same tension can be recognized throughout the history of measurement of sustainable development. For example, the European Environment Agency (EEA) has noted that “responses to sustainability challenges are dispersed across EU legislation and policies, while the evidence base to track progress is still fragmented (EEA, 2015). At national and international level, there are no integrated statistical frameworks for the measurement of all dimensions of sustainable development. In place of such frameworks are various sets of indicators covering the different dimensions. In parallel a vast array of indicator sets for sustainable development have been established at community, city, regional and other sub-national levels, acknowledging the reality that sustainable development at its heart requires “thinking global, acting local”.

This is not to say that the official statistics community has not been present in the development of sub-national statistics. There are many examples in which sub-national, often very detailed data are regularly produced for specific datasets. Perhaps the best example is information from population censuses which are routinely provided at very detailed spatial levels. However, on the whole, the development of sub-national statistics has occurred on a data set by data set basis rather than in an integrated manner across data sets.

More recently, as statistics offices have increased their use of administrative data and also progressed towards geocoding of statistical outputs the potential to develop sub-national data has increased. These developments, which continue to gather pace, are important drivers of the work to be discussed here. The challenge remains however to consider how these advances in data might be harnessed when considering multiple datasets. The

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<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEEA) and revised by Cesare Costantino, UNWTO Consultant.

provision of fine level detail for individual data sets without consideration of how they relate to each other leaves unmet the challenge of telling an overall picture about a specific destination or community. This is particularly true in the integration of environmental information with socio-economic data.

In advancing the MST, it is not considered sufficient to articulate the integration of information across the sustainable development themes at a national level. This task is important, for reasons explained below, but it is equally necessary to investigate how statistics can be integrated at sub-national and destination level. Without taking this step, the resulting information will be of far more limited value in the understanding of the sustainability of tourism activity and in developing appropriate responses to revealed imbalances and constraints.

Importantly, the challenge just described is not newly recognized. The INRouTe program of work has been ongoing for the past 4 years to discuss the relevant issues. It aims to support the management of subnational and local tourism destinations by providing and disseminating knowledge and best practices in the following research areas: flows of visitors, economic contributions, and tourism & territory. As such, INRouTe can support tourism destination management by establishing an agenda for the measurement and economic analysis of tourism to guide policy and decision-making. Key topics in this respect are the definition of observation and analytical units, procedures for monitoring and evaluation, and the design of indicator systems.

In addition, the UNWTO's International Network of Sustainable Tourism Observatories (INSTO) 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.

With these drivers and projects in mind, this paper describes some potential pathways towards sub-national statistical integration for the purpose of measuring sustainable tourism. The pathways discussed here build on the framing of sustainable tourism from Discussion paper #1, the potential integration of data in Discussion paper #2, and the role of statistical and accounting frameworks in Discussion paper #3. Section 2 of this paper discusses the issues that arise in determining the appropriate spatial resolution and associated measurement boundaries for statistical information and policy analysis. The following sections (3-7) outline five measurement pathways for sub-national and destination level data:

- i. tourism businesses and their key characteristics
- ii. tourism activity and visitor expenditure
- iii. environmental flows
- iv. environmental assets and other infrastructure
- v. accounting for ecosystems

Ultimately, the aim is to provide a richer information base to place tourism activity in its spatial context, and to support better understanding of the balance between economy, society and environment. At the same time, the aim is also to provide a means to see each location in relation to national and international situations. Ideally, a statistical framework should permit the uniqueness of each location to be reflected within an overall framework.

## **2. Spatial resolution and boundaries**

The common focus in considering spatial resolution in statistics and measurement is to understand the level of spatial detail that is available for specific data sets. The level of detail available will vary depending on a range of factors noted below in Box 1 and it will be the case that compiling data sets with detailed spatial information will not be a straightforward task.

However, the more challenging task is to appropriately establish the boundaries to be the focus of measurement, accounting and analysis. This matters because the aim in measuring sustainable tourism is to integrate information from multiple datasets. Consequently, even if different datasets can be compiled at fine spatial levels, unless there is a common understanding of the area/s of focus and the spatial boundaries are delineated consistently between datasets, the comparison between data sets will be negatively affected. This section does not resolve this issue but describes relevant considerations.

#### **Box 1: Factors affecting the compilation of spatial data sets**

- The way in which the data have been collected (e.g. via survey, census, from administrative data, from remote sensing and satellite data)
- The way in which the data have been processed and aggregated. At fine spatial levels some information may not be available due to concerns about the confidentiality of the information.
- The extent to which the spatial boundaries used for measurement align to the boundaries of most interest to decision makers and analysts
- The extent to which it is possible to aggregate information to higher spatial levels, including national level and hence estimate relative shares.
- Whether it is possible to downscale or disaggregate national level information to finer level spatial areas.

The concept that has been adopted in the development of indicators and policy advice in sustainable tourism is that of destinations. Unfortunately, no standard has been established concerning the statistical measurement of tourism destinations. In part the lack of standardization is consistent with the general approach to sustainable tourism measurement in which the information requirements are determined based on the specific needs of stakeholders within a self-defined spatial area.

In defining a statistical framework this is not necessarily problematic because in theory a statistical framework can be applied at any level of spatial detail. In the first instance then the delineation of the spatial area should be a matter for deliberation among key stakeholders and users of information. Put differently, there is no specific conceptual limit on the number of destinations that may be delineated within a single country. Furthermore, one may want to have different levels of spatial details depending on the different domains.

However, since the aim is to place the information on all destinations within a country in a national context, it will be important to ensure that there is no overlap between different destinations, i.e. that the spatial area that defines one destination does not overlap with the spatial area of other destinations. This may be problematic in some instances if there are multiple destinations that are overlapping depending on the analytical or policy purpose. For example, for a large city some analysis may be most useful at the level of the entire city and surrounding region but other analysis might be appropriate for areas within a city, for example an historic old town.

From a practical perspective, socio-economic statistics will be most readily compiled at a sub-national level using administrative boundaries such as for cities, provinces and states. Environmental data on the other hand may be compiled using different boundaries such as water catchments or other resource management boundaries.

To the extent that the information to be compiled will be used by decision makers within levels of government, it will likely be useful to ensure that the spatial boundaries chosen for measurement can be linked to administrative boundaries – i.e. the spatial level chosen should be in terms of areas corresponding to sub-sets of or combinations of standard administrative boundaries. If a destination area crosses administrative boundaries the potential to integrate data may well be reduced, or at least the costs of integration are likely to rise.

There is increasing potential to develop or obtain datasets with information at fine spatial levels, e.g. through the geo-coding of business address information or the use of locational information inherent in administrative or other “big data” sources. As a result of these data developments, there is the potential to aggregate data to any agreed level of spatial detail. The potential for flexible aggregation is often highlighted as a solution to the spatial

integration challenge. However, while these data developments are supportive, it remains essential to have a common understanding of the precise spatial area to which these fine level data will be aggregated for presentation and analysis.

A challenging conceptual issue to take into account in establishing the relevant spatial boundaries is identifying proper system boundaries for the description of the different connections to the visitor concerning environmental, economic and social aspects.<sup>2</sup> For example, the measurement of leakages requires an understanding of precisely which system boundary is relevant such that only flows that cross the boundary are considered leakages.

Another point is that it will be relevant to accept that not all questions will be able to be answered at a single spatial level – e.g. some aspects of transport infrastructure (e.g. airports and other transport hubs) are likely to be relevant to multiple destinations. Nonetheless, the exceptions should be identifiable. It would be appropriate for the statistical framework to provide specific advice in relation to different domains.

Finally, a general caveat on the potential to collate and disseminate spatial data concerns confidentiality. Standard practice in official statistics is to limit the release of information to ensure that individual businesses cannot be identified. Balancing the requirements for policy and analysis with the relevant confidentiality requirements will be an important consideration in determining the appropriate scale for sub-national statistics.

Notwithstanding these various challenges and the likelihood that no level of detail will be ideal or cope with all of the requirements, it is also clear that compilation of statistics at only national level is simply inadequate for discussion of sustainability. The tyranny of the national average will hide many different kinds of issues.

One possible starting point for discussion of these issues is to consider the advantages and disadvantages of using existing fine level administrative boundaries to delineate the sub-national areas required for the integration of data on sustainable tourism. While it may be necessary to consider the means by which these boundaries can be best related to the local interpretations of destinations, these boundaries should at a minimum facilitate a discussion between users and producers of information.

At this stage of the MST, the aim is to ensure that all relevant factors and perspectives are brought into consideration such that movement towards an agreed approach to the delineation of spatial areas can commence. In this spirit, it will be important that work being undertaken in different contexts and projects is made available. The remainder of the paper assumes that an agreed delineation of spatial areas representing destinations within a country has been determined.

### **3. Pathway #1: Data on tourism business and their characteristics**

An essential aspect of understanding the sustainability of tourism is to understand the location of tourism activity. One way in which information on the location of tourism activity may be established is using the location of tourism businesses. From a statistical framework perspective, the most comprehensive approach to this is to record the location of establishments that are classified to tourism characteristic industries.

As outlined in Discussion paper #2, the collection of economic statistics should be based around a business register that lists all businesses within a country and stores a range of information about each business generally including its address and industry classification. It is proposed that using this information, each tourism business can be geo-coded to a specific location and hence a mapping of the location and density of tourism businesses can be completed.

Depending on the information about each business that is available on the register, it may also be possible to record information about the employment, size, ownership and legal structure of tourism businesses by location. Further, since the business register forms the statistical infrastructure for the collection of information through surveys and census, there is an opportunity to combine this collected data and attribute it to location as well.

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<sup>2</sup> These issues are discussed directly in Jones and Munday, 2007; and Munday et. al., 2013).

Since registers should also take on board changes in tourism businesses, e.g. new businesses and business closures, there is the potential to tell a quite sophisticated story about tourism industry dynamics in terms of location.

Although seemingly quite straightforward, however, there are measurement challenges associated with establishing and maintaining business registers, especially at the level of location, that will need to be considered. These include ensuring good and up to date coverage of businesses, keeping information about businesses on the register up to date, and dealing with businesses that have multiple establishments. Address information can also be challenging to use if the information provided is a contact address for the management of surveys rather than a business location as such.

While these are common issues, often there is no clear external demand for summarizing this information, and hence the work to establish and maintain business register can suffer from limited resourcing despite its importance within the whole statistical infrastructure. With regard to this, it is worth noting that the recognition of the relevance of locational information for informing sustainable tourism policy and analysis will be an additional step in providing a rationale for business register work.

Connecting tourism and the environment by means of an internationally agreed statistical framework may also open up new avenues to maintain and cross check information on business registers. For example, local tourism associations, key stakeholders to involve in MST, are likely to have a good understanding of the location of tourism businesses and this knowledge could be used to improve the quality of the information stored on the business register. As well, as discussed further below, water and electricity companies will commonly have information on the businesses that they bill. Such lists, which by definition must link to the location of water and electricity meters, might also serve as a useful input to the maintenance of business registers.

Since the information from a business register can be coded to fine spatial level, specific locations, it can be aggregated and summarized to provide information in relation to larger areas such as destinations or administrative regions.

#### **4. Pathway #2: Data on tourism activity and visitor expenditure**

Building on the information about tourism business characteristics described above, the next proposed pathway is collection of data on tourism business activity (turnover, value added, etc.) on the basis of locations. In effect this would represent an attribution of certain TSA aggregates into agreed tourism areas.

Where data are available at the establishment level this is likely a relatively straightforward extension of the business register information. Commonly however, two statistical challenges will get in the way. First, the collection of financial data usually focused on collection for a management unit which submits accounts for a business. Where there is only one establishment then the attribution to location is not problematic but where there is more than one establishment, for example a chain of hotels, attributing information to specific establishments is likely to require the collection of additional information – e.g. asking management units to estimate the share of revenue attributable to each establishment.

Second, it will usually be the case that economic statistics are collected using sample surveys of businesses rather than censuses. Consequently, if the sample size is not sufficiently large it may not provide information of sufficient quality for specific regions within the country. Ideally, the samples would be stratified to take the location aspects into account but this may not be possible depending on resources and costs.

Another challenge in releasing business data at finer spatial levels may be confidentiality concerns. Generally, official statistics will not release information at a level that allows users to identify the data pertaining to an individual business. This may be one factor to be considered in establishing the size of the tourism areas to be the focus of data integration.

While there may be some challenges in directly collecting data on tourism business activity at destination level, other techniques commonly applied in national accounting may be used. The starting point is that there are national level estimates of the particular variables, e.g., revenue, intermediate costs, etc. The best starting point would be the information contained in a national TSA. Using this starting point, the approach is to find appropriate indicators to allocate national data to sub-national tourism areas; the key issue is understanding the assumptions that are implicit in making any allocation.

For example, information may be available on the number of hotel nights in tourism areas and this may be used as an indicator to allocate information on hotel and restaurant expenditure. This assumes that the expenditure per visitor is the same across different areas. An alternative might be to use information from other sources, e.g. a hotels association, to give a distribution across tourism areas that is then calibrated to the relevant national total. In short, there are a number of methods by which a picture of tourism activity at sub-national and destination level may be established. Importantly, the methods can be refined and improved over time as resources permit. As a result there is generally no large barrier to making a first estimate based on existing knowledge, provided that compilers are open to different possibilities.

The information discussed to date in this section concerns data from tourism businesses. Moving from a production perspective to a consumption perspective, also relevant is information about visitor activity at the destination level. Two approaches may be considered in developing such estimates.

The first is to use supply side information, for example on total sales of restaurants in a destination, and then apply tourism ratios that account for the share of total sales due to visitors. A TSA will provide national level tourism industry ratios and as a first approximation these ratios might be applied.

But where possible it would be relevant to take into account variations across destination areas, which could be done following the second approach. In this case the information on visitor expenditure would be collected directly from the visitors themselves, using for example visitor surveys, and asking for a distribution of expenditure according to different tourism areas within a country. One factor to consider here is the alignment between the tourism areas included in the survey collection vehicle and the tourism areas delineated for analytical and policy purposes. Ideally the definition and naming of these areas would be the same.

Collection of data from a visitor perspective would seem the most direct option but there will be some tourism products for which allocation to specific destinations may be difficult. A particular challenge may concern transportation where a visitor travels between different tourism areas during the course of a visit. It will be important to develop means or conventions by which this activity is appropriately attributed to location, and at the same time considering the connection to the supply side information since the transport business may itself be located in different areas within a country. (It is noted that this issue is not unique to tourism measurement and has been confronted for both the development of balance of payments measurement and compilation of sub-national level national accounts.)

Another potentially useful source would be information from credit card companies which may be able to identify expenditures on tourism characteristic products by location of that expenditure. This type of “big data” might provide good information to help allocate national level information on total visitor expenditure data to tourism areas.

### **5. Pathway #3: Data on environmental flows**

For the purposes of developing indicators of sustainable tourism, and building on the discussion of key environmental themes from Discussion paper #2, the next focus for destination level tourism information concerns environmental flows of water, energy, GHG emissions and solid waste. From the perspective of carrying capacity and environmental management, it is particularly important that these environmental flows are measured on a sub-national level since the environmental pressures associated with, for example, high levels of water use or high flows of solid waste, must be assessed in a local context.

Ideally, estimates of these environmental flows would be compiled at an establishment level (i.e. at the level of detail on the business register). For water use and electricity use, since most establishments will be connected to a network or grid, it is likely possible to develop estimates for tourism areas by working together with relevant authorities. For other energy flows – e.g. the use of fuel for transport - and flows of solid waste, it will likely be necessary to collect information directly from the tourism businesses themselves.

Particularly for energy flows, but also for water in some cases, it will be necessary to collect information on the use both of water and of energy by tourism businesses and also on the different potential sources of water and energy. For example, electricity use from a grid for some businesses may be quite low because they are instead using solar panels or diesel generators. Similarly for water in some destinations, the supply may be from desalination plants or individual bores. To understand the extent to which the use causes a pressure on the local resource these factors should be taken into account.

Increasingly, tourism businesses with a keen interest in sustainability are developing monitoring tools to assist individual establishments in recording their flows of water, energy, GHG emissions and solid waste<sup>3</sup>. To the extent that these monitoring tools are collecting data that is broadly in line with the definitions applied at national level and that access to the data is possible, such corporate information may be integrated with other national level data to provide a more complete picture of location level environmental pressures.

Understanding local level environmental pressures may also require a good understanding of seasonal patterns. Annual average patterns of water use, for example, may hide significant differences that occur at different times of the year. Further, where peak periods of use coincide with times of reduced resource availability (e.g. high water use during summer) the issues may be further heightened. For this reason the compilation of data on sub-annual (monthly or quarterly) flows of water use and potentially energy use should be considered.

A final comment concerning energy and water is that location level information on these environmental flows cannot be directly interpreted as providing measures of sustainability. To make an assessment of sustainability it is necessary to consider (i) the availability of the relevant resource in the location; and (ii) other uses of the resource within the area. The first issue of understanding use in the context of the asset base is discussed in the next section. The second issue points to the need to consider economy wide measurement for environmental flows – using the SEEA framework is the best starting point for this measurement.

## **6. Pathway #4: Data on environmental assets and other infrastructure**

Measuring the local asset base is fundamental to the assessment of sustainability and carrying capacity. In this section the organization of information on the local asset base is described with coverage of two broad asset types – environmental assets and tourism infrastructure.

For statistical and accounting purposes, environmental assets are described in the SEEA Central Framework. They encompass mineral and energy resources, land, soil, timber, aquatic resources (especially fish), other biological resources and water resources. For the measurement of sustainable tourism a sub-set of these assets are likely of primary and general interest.

### *Land*

Initial priority should be the measurement of land. Land is a unique asset in the SEEA representing the space in which economic and other human activity takes place and in which other environmental, economic and social assets are located. The SEEA Central Framework describes two approaches to accounting for land: (i) accounting for the composition of land cover within a country and changes in this composition over time; and (ii) accounting for the composition of land use within a country and changes in this composition over time.

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<sup>3</sup> See for example, <http://tourismpartnership.org/water-stewardship/>.

For sustainable tourism it is recommended that initial focus be placed on accounting for and mapping land cover – i.e. the extent of various types of vegetation and land cover including forest, wetlands, beaches and coastal areas, water bodies (rivers and lakes), urban areas, etc. Conceptually, accounting for land cover should be extended to include marine areas such as coral reefs. Establishing a land cover map for a country and how land cover is changing over time can provide excellent information to assess the changes in the landscape that may be attributable to human activity. For example, deforestation or increased urbanization. Since a land cover account is compiled for a country as a whole the various land cover types can be mapped and the boundaries of tourism areas overlaid using standard GIS methods. From this base, accounting for changes in land cover composition within a tourism area can be derived.

With a map of land cover in place, a logical next step is to identify what might be regarded as “key tourism features” in the landscape. This may include natural features (such as beaches, national parks, viewing locations, etc.); cultural, indigenous and historical sites; and relevant produced assets such as hotels and resorts, theme parks, roads, transport hubs, waste treatment facilities, etc. The location of all of these features is relevant to understanding the sustainability of tourism within a local area.

The measurement challenge here is not the lack of knowledge of the location of such features but rather applying the resources needed to bring the relevant data together to provide (and maintain) an integrated picture of land cover.

#### *Water resources*

The second environmental asset of particular interest at destination level is water. The SEEA Central Framework provides a detailed water resource asset account to record the stock and changes in stock of water resources (due to abstraction, precipitation, evaporation and movements to other water bodies) over accounting periods. It recommends that these accounts be compiled at the level of water catchments since the availability of water can vary considerably between water catchments within a country. The measurement of sustainable tourism should support the development of water accounts at this level of detail with a focus on those catchments that support tourism areas.

Because water resources asset accounts provide a statement on the complete balance of inflows and outflows, analysis is possible of the sustainability of current water use levels by tourism and other industries within a catchment. Depending on the water catchment, it may be important to develop accounts at a sub-annual frequency to take into account both changes in the pattern of water use (e.g. through tourism peaks) and changes in the pattern of water availability.

In general, countries will have information on many aspects related to changes in the water balance through direct measurement and hydrological modeling. The statistical challenge here is collating this information for the purpose of conveying a consistent time series of information on water resources.

#### *Biological resources*

The final group of environmental assets considered relevant in a tourism context are selected biological resources. Since tourism activity does not depend on the extraction of natural resources, accounting for biological resources has a different motivation in the context of tourism and will be quite situation specific. Following the accounting frameworks of the SEEA Central Framework, it may be relevant to compile accounts for fish stock, animals that are the focus of recreational hunting (deer, boar), and also wildlife that attracts visitation to national parks and protected areas. In these contexts, accounting information can help to organize information on trends in the numbers of animals which in turn could support an understanding of whether the related tourism activity is at risk.

The related issue is the condition and changing condition of ecosystem assets. The measurement of ecosystems is considered in the following section.

### *Tourism infrastructure*

In addition to environmental assets that support tourism activity, it is also relevant to bring together information on tourism infrastructure, i.e. produced assets that support the production of tourism products. The aim in compiling this information is to provide a sense of whether there is sufficient capacity in tourism infrastructure to support current levels of visitation and whether the condition of the infrastructure points to the need for improvements and additional investment.

Since infrastructure is, by definition, located in a specific place, attribution of the information to tourism areas should be relatively straightforward. The type of infrastructure that may be of interest include

- Transport (roads, airport capacity, port capacity, number of taxis, etc.)
- Accommodation (number of hotels, rooms/beds, occupancy rates)
- Utilities (communication services, water and electricity supply, waste treatment)

In the TSA:RMF, Table 8 records information on the levels of gross fixed capital formation (GFCF) or investment by different tourism characteristic industries. The proposal here is to complement this information with data in physical units on the associated capital stock of tourism produced assets and measures of capital use and availability. Presenting this information in terms of location of infrastructure is an important aspect in informing a discussion on sustainable tourism.

### **7. Pathway #5: Accounting for ecosystems**

The measurement of environmental assets described in the previous section focused on accounting for individual resources – i.e. each environmental asset is considered distinct or separable from the other assets. In the past five years a body of accounting has emerged to consider how different environmental assets interact as part of ecosystems. Ecosystem accounting, as described in the SEEA Experimental Ecosystem Accounting (SEEA EEA) provides a framework for recording the extent and condition of ecosystem assets and also the supply of ecosystem services that are used by economic units.

By integrating measures of both assets and services, ecosystem accounting ensures that both sides of the sustainability discussion can be considered in tandem – i.e. whether the environment is being degraded on the one hand and the nature of the use of the environment on the other. Importantly, for tourism purposes, the scope of ecosystem services is broad and explicitly incorporates the provision of recreational services. For example, the services provided by forests for hiking, reefs for diving and lakes for fishing.

A key feature of ecosystem accounting is that it uses a spatial approach when developing estimates. That is, it starts from the recognition of different ecosystem types in the landscape – e.g. forests, wetlands, beaches, etc. – and builds up to provide a complete picture across a country of the extent (area) and condition of these ecosystem types and the different baskets of ecosystem services supplied by each ecosystem asset. Thus, the approach is directly amenable to the development of sustainable tourism measures at destination level.

Measures of ecosystem extent and condition will likely build upon information from a land cover account as described in the previous section although it is likely to be useful to apply more detailed classifications of ecosystem types – e.g. types of forest. The most important measurement however, will relate to information on the location and composition of different ecosystem assets within the landscape, particularly in terms of the links to tourism activity. That is, ecosystem accounting supports the analysis of the location of tourism activity relative to different types of ecosystems. For example, by understanding the composition of the local landscape, most sensibly at the level of a single destination or agree spatial area, in terms of forests, mangroves, beaches, dunes, built areas and so on, supports understanding of the connection between tourism activity and the different ecosystem types.

The ecosystem condition account provides a framework to record information on changes in the quality of key tourism features, such as beaches, reefs and national parks, by recording metrics related to the condition and quality of the specific feature. Examples include measures of water quality near beaches, coral cover in reefs and age and density of forest trees.

Flows of ecosystem services are recorded in supply and use accounts. For a given tourist area there will likely be a range of ecosystem asset types and also a mix of different ecosystem services. Ideally, to allow analysis of trade-offs and impacts, all ecosystem assets and all ecosystem services would be recorded for the area – however initial measurement may focus only on specific asset types and specific services. Ultimately the goal of ecosystem accounting is to provide a broader picture of the connection between economic activity and the environment by recording all of the various connections and covering services about the provision of food, fuel and fibre, benefits from the regulation of the environment (e.g. clean air, clean water, flood protection, etc.) and cultural and recreational benefits.

At this stage, work is still progressing towards standardized and comprehensive advice on the compilation of ecosystem accounts. However, measurement is advancing rapidly across a number of different fields of endeavor including specific applications with respect to tourism in recent studies in Peru (Conservation International, 2016) and the Great Barrier Reef (ABS, 2016). It is to be anticipated that much more information will be available within the next 5 years. In combination with the other destination level data described in this discussion paper, ecosystem accounting data will provide the most comprehensive picture of environmental sustainability for tourism areas.

## **8. Conclusions**

The central theme of this discussion paper is that the measurement of sustainable tourism requires a spatial dimension. Thus it is necessary for the statistical framework to articulate ways in which the spatial characteristics of tourism can be best taken into account. Central to this challenge will be the delineation of distinct, local level areas that are relevant for policy and appropriate for measurement. There are undoubtedly a range of conceptual and practical issues to be resolved but there are options for taking this discussion forward.

Assuming approaches to delineation of spatial areas can be determined, this paper has described five potential measurement pathways to support the organization of information on sustainable tourism. Some of the data may be able to be identified and collated relatively quickly, in other cases additional research and data collection will be required. In all cases, it will be relevant to build as far as possible on available data and existing statistical infrastructure, such as business registers, and to progressively improve the available set of information.

## Discussion Paper #5 – Designing pilot studies<sup>1</sup>

### Background

As described in the concept note for the MST project, advancing the development of a statistical framework for measuring sustainable tourism will involve consideration of the issues in several pilot studies for destinations and countries. This note outlines the potential structure and scope for pilot studies. It will be updated as experience is gained in the conduct of pilot studies in different countries and destinations.

While the proposed pilot studies discussed here are motivated primarily by the need to progress the MST project, there are important connections and possible overlaps with other UNWTO initiatives concerning the measurement of sustainable tourism, in particular the UNWTO Network of Observatories (INSTO). The proposed MST pilot studies, as with the MST project more broadly, will take into consideration the INSTO experience in gathering information on sustainable tourism. This may be of particular relevance where there is an overlap between the location of the INSTO Observatory and the geographical scope of the pilot study.

The pilot studies, unlike the INSTO program, do not imply establishment of an ongoing measurement program. Rather a pilot study should inform a decision on this issue. Such a decision should also take into consideration findings from the ongoing INSTO program of work.

### Objectives and benefits of pilot studies

The objective in undertaking pilot studies is to understand, in specific contexts, the types of measurement issues and analytical applications that surround the topic of sustainable tourism. The work is highly relevant in the development of a broader, more generic statistical framework since the pilot studies should speak to both the relevance and feasibility of developing such a framework.

There are three key benefits that emerge from undertaking a pilot study at country or destination level. First, it should provide a rationale for bringing together various stakeholders with an interest in sustainable tourism to discuss key policy and analytical questions and to understand the information requirements.

Second, a pilot study should provide a broad assessment of the availability and quality of data for measuring sustainable tourism, an understanding of the associated institutional arrangements for data production and dissemination, and proposals for advancing work in this area.

Third, a pilot study can provide some initial estimates of data concerning sustainable tourism to inform policy and analysis. The scope and quantity of information on sustainable tourism that can be compiled within a pilot study will depend on the time, resources and data available.

It is not the intention of pilot studies to complete a full articulation of tables and statistics for sustainable tourism, and it should not be expected that extended analysis will be possible in the short term. At the same time, even a limited level of estimation should give an indication of the feasibility and resource cost of improving information in this area. It should also provide an indication of the relevance of this information for tourism policy and analysis and help understand the level of interest and support to undertake more detailed and/or comprehensive measurement work.

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<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEEA) and revised by Cesare Costantino, UNWTO Consultant.

## Summary of key pilot study elements

The approach described here follows, in broad terms, the logic adopted in advancing pilot studies in the context of the System of Environmental-Economic Accounting (SEEA). There are five key elements to each pilot study which are described in more detail in the remainder of this note.

1. Description of country, region or destination
2. Description of policy and analytical questions
3. Identifying key institutional arrangements and stakeholders
4. Collection of statistics and organization of data
5. Presentation of results

It is anticipated that each pilot study would make various decisions on the scope and focus of the study taking into account local circumstances. This note is intended to give a broad structure such that different pilot studies can be compared and hence provide a broad basis for implementation of integrated measurement in the future.

## Description of key elements of a pilot study to measure sustainable tourism

### *1. Description of country, region or destination*

An initial step is to clarify the intended spatial boundaries and possible disaggregations for the pilot study. At national level this is likely quite straightforward. At regional/sub-national level and at destination level, spatial boundaries may be less clear. Given the intent to integrate economic, environmental and social factors it may not be appropriate to simply adopt local administrative boundaries. While these boundaries may be suitable for some socio-economic data, different considerations may be relevant in identifying tourism destinations and for organizing environmental information. For example, it may be appropriate to consider the relationship between a region or destination and local river basins, forest areas, national parks, rivers and lakes, coastal zones (including beaches), reefs, etc.

The general intent in delineating environmental areas is to provide a basis for integrating information on the environmental/ecosystem condition of each of the areas in a way that is both relevant and feasible. In effect each area could represent a different ecosystem type and different indicators will be relevant in assessing its condition.

The relevant environmental boundaries will vary in each pilot study and the degree of detail needed will be a function of both policy questions and data availability. The final selection can be determined through an iterative process but in the first instance it will be sufficient to describe in general terms the most relevant environmental features within scope of the study and to understand the location of these features relative to the main areas of tourism and other economic and social activity.

In describing sub-national spatial boundaries, it will be relevant to keep in mind that the availability of information at sub-national levels will be variable and across different domains different sub-national classifications may be applied.

### *2. Description of policy and analytical questions*

When combining economic, social and environmental data there is a range of policy questions that might be addressed, especially considering the range of different organizations, government agencies and decision makers operating at different regional levels. Conceptually, the underlying statistical framework that is being developed will integrate all of the relevant data domains for the range of policy questions, noting at the same time that the statistical framework itself will be designed with a range of policy questions in mind. However, it will not be possible in the first instance to integrate all data immediately. Further, some policy questions will be of more relevance than others, and focusing on the key questions will ensure relevant parts of the overall statistical framework are well adapted and will help direct the collection of data to the most important areas.

The second step in the pilot study is therefore to identify the key policy or analytical topics for the country, region or destination that is the focus of the pilot study. These topics should be described without specific reference to the statistical framework to ensure that the development of the framework itself is driven by the issues rather than driven by an a priori view of what is possible.

As an initial indication of possible policy topics consider the following questions (further discussion on policy issues is provided in the MST project document):

- Is tourism activity having a negative impact on ecosystem condition, if so which ecosystems and which pressures and drivers are most relevant?
- Is there sufficient water available to support current and expected tourism activity?
- Which environmental features generate the most tourism value added?
- Could alternative land use arrangements (e.g. location of hotels) deliver more sustainable tourism activity?
- What is the contribution of tourism to the generation of GHG emissions?

Note that the development of data within a statistical framework will not necessarily directly answer these types of questions but it should support discussion of these types of questions.

### 3. Identifying key institutional arrangements and stakeholders

The success in developing integrated statistical approaches, especially when it concerns crossing the economic, environmental and social domains, will depend primarily on the success in managing the variety of stakeholders. Two primary groups of stakeholders are relevant – producers of statistics and users of statistics. Both groups need to be engaged in the process of developing measures of sustainable tourism.

As part of the pilot study it will be relevant to bring together relevant agencies, institutions and experts perhaps undertaking an initial exploration of those institutions that have a clear and specific interest in sustainable tourism.

These may include, but are not limited to

- Ministries and government policy departments
- National and regional statistical offices
- Other data custodians and data producers, especially for environmental and cultural data
- The tourism business community
- Academic experts across tourism, economic analysis, statistics, environment/ecology, social/cultural, geography
- Civil society

During a pilot study the involvement of stakeholders need not be exhaustive but it should be ongoing through the study and not only at the commencement and finalization. It would be envisaged that the number of stakeholders would rise over time. Also, it would not be expected that extensive governance or similar institutional arrangements would be put in place for a pilot study although some governance/co-ordination will be necessary and it may be appropriate to use existing cross-agency mechanisms to oversee the work. In establishing any co-ordination arrangements and in the process of engaging with different institutions, the varying relationships and dynamics between institutions should be respected.

Two particular administrative issues should be considered in the early discussions and formulation of the pilot study. First, the issue of access to information and data sharing. Since the project will involve integration of multiple datasets it will be unlikely that all datasets are held in one institution or agency – understanding how data will be accessed and integrated is important to understand upfront.

Second, the issue of releasing results. Once the work on a pilot study has been completed there may be barriers to releasing the results due to a lack of clarity on who “owns” the results and/or concern about the messages contained in the report. Clarifying the institutions involved and the processes that are required to release results is also important upfront. A related point is that ongoing dialogue and provision of interim results and findings is encouraged to support both ongoing engagement in the pilot study and the sustainability over time of this work.

#### 4. Collection of statistics and organization of data

The collection of statistics will be guided by the key topics for analysis (step 2) and data availability. At the pilot study level it would be anticipated that only a limited number of topics and datasets would be considered such that the relevance and feasibility of the approach can be assessed. It is important to note that it is not expected that new or additional information would be collected during a pilot study. Rather the focus is on the use of existing data and understanding the extent to which additional data may be required in the future.

There are four broad areas of data that can be brought together:

- Economic activity data on tourism demand and the production of tourism characteristic industries (including employment, visitor numbers and accommodation capacity)
- Environmental data on resources used by tourism characteristic industries (e.g. water, energy) and residuals generated by tourism characteristic industries (e.g. GHG emissions, solid waste).
- Environmental data on the condition and changes in condition of ecosystems within the selected area. This might include, for example, information on the quality of beaches or coastal areas, and on the fish stocks in lakes used for recreational fishing. It may also extend to indicators of pressures on ecosystems such as the number of visitors to forest areas. This area of data may be extended to include measurement of ecosystem services noting that some flows of ecosystem services will be measured on the basis of information from areas 1 and 2.
- Cultural and social data related to tourism activity. For example, numbers and visitation rates to cultural sites (to be defined), particularly those located in the landscape such as locations of significance to indigenous people or of historical significance.

In a pilot study it would be anticipated that statistics on a selection of variables from each of the broad areas would be collected to form the basis for the development of integrated statistics and to assess the integration challenges. Further discussion on measurement and integration challenges is provided in the MST project document.

It may be noted that the first two areas of data may be integrated by virtue of a focus on tourism characteristic industries. Information on the third and fourth areas of data will need to be integrated via specific location. For example, the link between tourism activity and the condition of beaches will require that the economic activity data can be associated to beach locations. (A discussion on the links to sustainable tourism indicators, particularly SDG indicators, will be developed in the early stages of the MST project.)

#### 5. Presentation of results

Interim and final reports would be compiled for each pilot study detailing

- the scope of the study
- the relevant topics and policy issues
- the institutions and agencies involved
- the selected variables, tables and accounts
- next steps and action plans

The presentation of the results themselves might be best conveyed in terms of maps of information and in terms of performance indicators – such as water use by visitor night. The selection of maps and indicators would be based around those best suited to supporting discussion of the key policy and analytical topics.

It is important that the results from the pilot study are publicly available and communicated to all relevant stakeholders. There are many mechanisms that may be used for this purpose and each pilot study should consider and endorse a specific communication plan. All pilot study reports will in any case be made available on the MST website.

## Discussion Paper #6 – Collecting information on measuring sustainable tourism from countries<sup>1</sup>

### 1. Background

Ultimately, the most important aspect of the MST initiative is advancing the organization of information within countries to improve decision making with respect to sustainable tourism. The design of a statistical framework for sustainable tourism is a crucial step towards this objective.

A statistical framework should be targeted correctly to respond to both the policy issues of relevance and the feasibility of compiling statistics and accounts in countries. Consequently, gathering country and destination level experiences and collecting data that demonstrates the situation in the different countries in relation to MST is therefore an important part of the project. In some cases this information may be collected via the conduct of pilot studies. Discussion paper #5 discusses the issues surrounding the design of pilot studies.

This discussion paper focuses on the kind of information that has been shown to be relevant for informing on sustainable tourism and that, as a consequence, should be considered to be incorporated in a statistical framework for sustainable tourism. This paper is based on a review of documentation of country experiences and international initiatives, provided to UNWTO and/or research as part of the MST Working Group and related discussions<sup>2</sup>. It also draws heavily from the ongoing pilot studies in countries.

### 2. Proposed approach for the collection of information on measurement of sustainable tourism

Commonly, international agencies develop templates and questionnaires to gather information from countries concerning the current status and methods in specific areas. Tourism and environmental satellite accounts are no exceptions. The challenge at this point in the development of a statistical framework for sustainable tourism is that there is no established standard or benchmark against which countries' situations might be compared or which might form a basic structure for the collection of information on the measurement of sustainable tourism.

The collection of information referred to here is a voluntary process focused on descriptive information rather than the collection of data. It may be connected with the agreement to undertake a pilot study for a specific country or destination, i.e., it is envisaged that the collection of information would be completed as part of the pilot study.

Perhaps the largest challenge in collecting this information is limiting the extent of overlap with related collection of information on methods that are regularly in train. Relevant examples in the space of sustainable tourism include

- The collection of information on tourism statistics by UNWTO
- The collection of information on the status of TSA implementation by UNSD
- The collection of information on tourism statistics and TSA by Eurostat and OECD
- The collection of information on environment statistics and environmental-economic accounts by UNSD

There are also ongoing processes to confirm the selection of indicators for monitoring the UN SDGs and related methods.

With this in mind, the topic areas described in section 3 are proposed as being the initial areas for the collection of information on measuring sustainable tourism. In due course, more detailed and/or comprehensive sets of topics might be developed.

Where a process is undertaken in a country to provide information about topic areas such as those proposed in section 3, statisticians or other focal points are encouraged to engage with a wide variety of stakeholders using the proposed list of areas as a starting point.

<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEEA) and revised by Cesare Costantino, UNWTO Consultant.

<sup>2</sup> This documentation is steadily increasing and can be found on the MST website: [http://statistics.unwto.org/studies\\_experiences](http://statistics.unwto.org/studies_experiences).

The proposed topic areas and the associated questions are introductory in nature and seek to provide a suitable platform for ongoing discussion. As a consequence, the questions are likely to raise many more questions of detail. Where the collection of information on measurement of sustainable tourism is being undertaken in the context of a pilot study, it is suggested that this additional detail be incorporated through a series of face-to-face discussions or similar dialogue. Over time, as shared understanding of the situation with respect to sustainable tourism measurement improves more refined and specific elements can be incorporated.

It is noted that the primary difficulty in advancing this area of measurement will not be the availability of detailed statistics. Rather, the primary hurdle will be continuing to recognize the need for engagement and integration across agencies, sectors and disciplines. Thus, starting at a more introductory level, by means of pilot studies, is intended to help establish the broad platform required for ongoing advance in this area.

### 3. Proposed topic areas

The following topics are proposed as the basic framework for collecting information useful for understanding the relevance and feasibility of implementing statistics and accounts on sustainable tourism. They are intended as a starting point for discussion and should not be considered a final or definitive list. Before collecting information on these topics, it is important to define initially the intended spatial area under consideration – i.e. a destination, sub-national region or country. The topics proposed should be suitable for discussion at any of these spatial levels (region of interest) although the relevance of different topics at different levels will vary.

#### i. Stakeholders in sustainable tourism

Here, the aim should be to list all of the agencies and relevant contact points within the region of interest. Starting from such a list, in developing answers about the remaining topics it may be appropriate to form a small group of interested people so as to ensure appropriate involvement in the process and to ensure that the answers incorporate the most up-to-date information. Such a small group may be nested within the institutional arrangements listed under point (iii) below.<sup>3</sup>

Suggested groups of stakeholders to consider in forming the list are:

- Supporters and data users (some of whom may also be data providers)
  - Government central agencies - finance, treasury, planning
  - Sector specific government agencies – tourism, transport, environment
  - Central Banks
  - Tourism boards and networks
  - Regional and destination level agencies
- Data providers (some of whom may also be data users)
  - national statistical offices
  - tourism departments and research agencies
  - environment and natural resource management agencies
  - immigration and transport departments
  - government research and technical agencies (e.g. geospatial data, meteorological data)
  - private sector tourism bodies
  - regional and destination level agencies
- Universities
- International and local NGOs and civil society organizations
- Private industry associations, particularly tourism networks

#### ii. Current and potential policy and legislation concerning sustainable tourism

Ensuring the connection to use of information is a fundamental aspect of developing the statistical framework. Here the aim should be to capture information on areas of policy and legislation that concern

<sup>3</sup> This is very much related to the Inter-institutional Platform advocated by UNWTO in its technical assistance and capacity building initiatives, and to the institutional arrangements described in several UN compilers' guides such as the [IRTS 2008 Compilation Guide](#).

sustainable tourism. The connection to sustainable tourism may be direct, e.g. there may be specific policies aimed at supporting tourism businesses to be more environmentally friendly; or indirect, e.g. there may be important aspects of local planning requirements that impact on the potential to achieve sustainable tourism outcomes. Most broadly, it will be relevant to consider any national development plans or visions, particularly as they relate to sustainable development. Work on sustainable tourism should sit within such broad national visions.

Discussion of the issues here may be usefully informed through consideration of the set of 12 policy themes for sustainable tourism described in the 2005 UNEP/UNWTO report. These themes are summarized in Discussion paper #1: Framing Sustainable Tourism and listed below in Box 1.

<b>Box 1: Policy themes for sustainable tourism</b>	
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
<i>Source: UNEP/UNWTO 2005, Making Tourism More Sustainable: A Guide for Policy Makers</i>	

A related area may concern reporting requirements. Where there are expectations of information being provided to or by governments and related to sustainable tourism, including for example information to report on progress towards the UN SDGs, these potential uses of data on sustainable tourism should be noted under this topic.

Information on sustainable tourism will not only be relevant to government decision making but should also be of direct relevance to tourism businesses. Discussion with this sector may bring to light potential applications of improved data on sustainable tourism, including for example, providing a standardized basis for benchmarking or for meeting sustainability criteria for certain tourism products.

Once a list of possible applications and uses has been made, there will be foundation for and it will be relevant determining priorities to ensure that the work on measuring sustainable tourism is best targeted. In addition, it will be possible to consider in more depth the data requirements in terms of frequency of data (monthly, annual, etc.), data accuracy and general issue of data quality.

iii. **Institutional arrangements concerning sustainable tourism**

Discussion of the previous two topics should bring to light any institutional arrangements that are currently in place pertaining to the management of sustainable tourism. Here the aim should be to report any such arrangements. These may be internal to government, industry based or cross sector in nature and may involve any of the entities mentioned in point (i) above.

In advancing work on the measurement of sustainable tourism, it is likely to be beneficial to use or adapt an existing institutional arrangement. Different arrangements may be relevant in relation to the use of statistics for sustainable tourism management and the production of these statistics; co-ordination between these two perspectives is needed.

iv. **Past and current measurement of sustainable tourism**

Here the aim should be to list any past or current research work that has investigated sustainable tourism or created relevant metrics and indicators. Where indicator sets have been developed, a listing of the selected indicators and any relevant definitions would be useful information.

This information can be used to identify priority areas for measurement, form the basis for identifying experts to support the work and provide insights to the feasibility of advancing work on measuring sustainable tourism. Where datasets are available these may also be used in implementing a statistical framework.

There have been many examples of these types of initiatives<sup>4</sup> such as those within the UNWTO INSTO and the European ETIS programs. See Discussion paper #1: Framing sustainable tourism, for a summary of initiatives and references.

<sup>4</sup> Several examples of country experiences and international initiatives provided to UNWTO and/or researched as part of Working Group and related discussions are available on the MST website: [http://statistics.unwto.org/studies\\_experiences](http://statistics.unwto.org/studies_experiences).

v. **Availability of data for measuring sustainable tourism**

Under this topic a summary should be provided of the current suite of tourism data that are available for the country of interest and any relevant regions or spatial units. Note should be made of

- the frequency of the data (monthly, annual, etc)
- the level of industry detail
- the level of spatial detail that is available
- the agency responsible for the data (in parallel with point (i) above)
- the data collection methods (survey based, administrative data, etc).

a. Tourism statistics and accounts

Data requirements of IRTS and TSA:RMF are important in identifying the relevant information. Specific data areas of interest include<sup>5</sup>:

- Visitor flows (e.g. domestic/inbound/outbound/ /same-day/overnight, by country of residence, by purpose, by mode of transport, etc.)
- Accommodation data
- Average length of stay
- Tourism expenditure (by visitor type, by product)
- International trade in tourism services
- Tourism employment (e.g. employees, jobs, hours worked, gender, employee/self-employed)
- Information on tourism industries (e.g. number and size of establishments, output, value-added, capital formation, non-monetary data, etc.)
- Tourism satellite accounts (using TSA:RMF) (e.g. tourism expenditure, tourism shares and ratios, tourism direct value added)
- Studies based on modeling approaches
- Tourism satisfaction information
- Information on the visitation of sites

b. Environment statistics and accounts

Data requirements of SEEA are important in identifying the relevant information. Specific data areas of interest include:

- Land cover, land use and other geo-spatial data
- Data on marine and coastal areas including beaches
- Data on natural disasters (occurrences, impacts)
- Data on environmental stocks and flows
  - Water (incl. abstraction and use, sewage, water quality)
  - Energy (incl. energy use and source)
  - GHG emissions
  - Solid waste and recycling
  - Air quality
  - Other (e.g. specific pollutants, noise)
- SEEA accounts
  - Physical flow accounts (e.g. water, energy, GHG emissions, waste, material flow)
  - Asset / resource accounts (e.g. minerals, timber, fish, water)
  - Land cover / land use accounts
  - Ecosystem accounts
  - Environmental expenditure and environmental goods and services accounts

c. Economic statistics and accounts

Specific data areas of interest are:

- National accounts data including supply and use tables
- Employment data by industry

<sup>5</sup> UNWTO compiles country data on many of these areas, see Annex 1 for the Index of basic data and indicators and <http://statistics.unwto.org/content/data-1>.

- Business survey data by industry
  - Output
  - Wages and salaries, intermediate costs
  - Investment
- Government expenditure
  - Transport and tourism infrastructure expenditure
  - Environmental management and protection expenditure

d. Social and cultural statistics

Specific data areas of interest include:

- Population census data providing information on population by geographic area
- Cultural assets and sites (location, visitor numbers, revenue/fees, assessed condition, significance (e.g. inclusion in UNESCO lists))
- Locally produced or artisanal products and services (number of producers, sales)

vi. **Statistical infrastructure and capacity**

To support the longer term implementation of a statistical framework for sustainable tourism the co-ordination and management of data is required. While not required in order to establish demonstration accounts, initial planning and assessment of the capacity to provide statistical infrastructure is needed. Here a description of the current state of relevant pieces of statistical infrastructure should be provided including information on:

- A national business register, especially the extent to which tourism businesses can be identified and the extent of information about the location of businesses.
- Data sharing arrangements between government agencies and other bodies (e.g. water supply companies, energy providers, tourism networks)
- Statistical legislation concerning the collection of data and the publication of information
- Technological, systems and database related capacity
- Statistical and national accounting human resources, experience and skills

vii. **Conclusions and next steps**

After completing investigation of the topics above, it would be useful to consider the key findings, possible opportunities to advance the measurement of sustainable tourism and next steps. As a means of structuring the findings, it may be appropriate to consider the information in terms of:

- Relevance of sustainable tourism information given policy and analytical requirements
- Feasibility of producing sustainable tourism information
- Opportunities to progress the development of sustainable tourism information
- Risks likely to be encountered in advancing work on sustainable tourism information

The findings themselves should provide a firm basis for the discussion of the relevance and feasibility of measuring sustainable tourism. Indeed, through the process of collecting the various pieces of information the topics of most interest from a policy and analytical perspective should become reasonably clear and, further, the potential to compile appropriate statistics and accounts should emerge.

The coverage and structure presented in this paper is a draft based on the indicative structure for a statistical framework for sustainable tourism described in other discussion papers. Pending further advances in the development of a statistical framework the advice and proposals in this paper will need to be adapted.

## Annex 1: Index of basic data and indicators

Basic data and indicators	Notes	Units
<b>1. INBOUND TOURISM</b>		
<b>Data</b>		
<b>Arrivals</b>		
1.1 Total		('000)
1.2 ♦ Overnight visitors (tourists)		('000)
1.3 ♦ Same-day visitors (excursionists)		('000)
1.4 * of which, cruise passengers		('000)
<b>Arrivals by region</b>		
1.5 Total		('000)
1.6 ♦ Africa		('000)
1.7 ♦ Americas		('000)
1.8 ♦ East Asia and the Pacific		('000)
1.9 ♦ Europe		('000)
1.10 ♦ Middle East		('000)
1.11 ♦ South Asia		('000)
1.12 ♦ Other not classified		('000)
1.13 * of which, nationals residing abroad		('000)
<b>Arrivals by main purpose</b>		
1.14 Total		('000)
1.15 ♦ Personal		('000)
1.16 * holidays, leisure and recreation		('000)
1.17 * other personal purposes		('000)
1.18 ♦ Business and professional		('000)
<b>Arrivals by mode of transport</b>		
1.19 Total		('000)
1.20 ♦ Air		('000)
1.21 ♦ Water		('000)
1.22 ♦ Land		('000)
1.23 * railway		('000)
1.24 * road		('000)
1.25 * others		('000)
<b>Arrivals by form of organization of the trip</b>		
1.26 Total		('000)
1.27 ♦ Package tour		('000)
1.28 ♦ Other forms		('000)
<b>Accommodation</b>		
Total		
1.29 ♦ Guests		('000)
1.30 ♦ Overnights		('000)
Hotels and similar establishments		
1.31 ♦ Guests		('000)
1.32 ♦ Overnights		('000)
<b>Expenditure</b>		
1.33 Total		US\$ Mn
1.34 ♦ Travel		US\$ Mn
1.35 ♦ Passenger transport		US\$ Mn
<b>Expenditure by main purpose of the trip</b>		
1.36 Total		US\$ Mn
1.37 ♦ Personal		US\$ Mn
1.38 ♦ Business and professional		US\$ Mn
<b>Indicators</b>		
1.39 Average size of travel party		Persons
Average length of stay		
1.40 Total		Days
1.41 ♦ For all commercial accommodation services		Nights
1.42 * of which, "hotels and similar establishments"		Nights
1.43 ♦ For non commercial accommodation services		Days
1.44 Average expenditure per day		US\$

Basic data and indicators	Notes	Units
<b>2. DOMESTIC TOURISM</b>		
<b>Data</b>		
<b>Trips</b>		
2.1	Total	('000)
2.2	◆ Overnight visitors (tourists)	('000)
2.3	◆ Same-day visitors (excursionists)	('000)
<b>Trips by main purpose</b>		
2.4	Total	('000)
2.5	◆ Personal	('000)
2.6	* holidays, leisure and recreation	('000)
2.7	* other personal purposes	('000)
2.8	◆ Business and professional	('000)
<b>Trips by mode of transport</b>		
2.9	Total	('000)
2.10	◆ Air	('000)
2.11	◆ Water	('000)
2.12	◆ Land	('000)
2.13	* railway	('000)
2.14	* road	('000)
2.15	* others	('000)
<b>Trips by form of organization</b>		
2.16	Total	('000)
2.17	◆ Package tour	('000)
2.18	◆ Other forms	('000)
<b>Accommodation</b>		
Total		
2.19	◆ Guests	('000)
2.20	◆ Overnights	('000)
Hotels and similar establishments		
2.21	◆ Guests	('000)
2.22	◆ Overnights	('000)
<b>Indicators</b>		
2.23	Average size of travel party	Persons
	Average length of stay	
2.24	Total	Days
2.25	◆ For all commercial accommodation services	Nights
2.26	* of which, "hotels and similar establishments"	Nights
2.27	◆ For non commercial accommodation services	Days
2.28	Average expenditure per day	US\$
<b>3. OUTBOUND TOURISM</b>		
<b>Data</b>		
<b>Departures</b>		
3.1	Total	('000)
3.2	◆ Overnight visitors (tourists)	('000)
3.3	◆ Same-day visitors (excursionists)	('000)
<b>Expenditure</b>		
3.4	Total	US\$ Mn
3.5	◆ Travel	US\$ Mn
3.6	◆ Passenger transport	US\$ Mn
<b>Expenditure by main purpose of the trip</b>		
3.7	Total	US\$ Mn
3.8	◆ Personal	US\$ Mn
3.9	◆ Business and professional	US\$ Mn
<b>Indicators</b>		
3.10	Average length of stay	Days
3.11	Average expenditure per day	US\$

Basic data and indicators		Notes	Units
<b>4. TOURISM INDUSTRIES</b>			
<b>Data</b>			
<b>Number of establishments</b>			
4.1	Total		Units
4.2	◆ Accommodation for visitors		Units
4.3	* of which, "hotels and similar establishments"		Units
4.4	◆ Food and beverage serving activities		Units
4.5	◆ Passenger transportation		Units
4.6	◆ Travel agencies and other reservation services activities		Units
4.7	◆ Other tourism industries		Units
<b>Accommodation for visitors in hotels and similar establishments</b>			
Monetary data			
4.8	◆ Output		US\$ Mn
4.9	◆ Intermediate consumption		US\$ Mn
4.10	◆ Gross value added		US\$ Mn
4.11	◆ Compensation of employees		US\$ Mn
4.12	◆ Gross fixed capital formation		US\$ Mn
Non-monetary data			
4.13	◆ Number of establishments		Units
4.14	◆ Number of rooms		Units
4.15	◆ Number of bed-places		Units
<b>Indicators</b>			
4.16	Occupancy rate / rooms		Percent
4.17	Occupancy rate / bed-places		Percent
4.18	Average length of stay		Nights
4.19	Available capacity (bed-places per 1000 inhabitants)		Units
<b>Travel agencies and other reservation service activities</b>			
Monetary data			
4.20	◆ Output		US\$ Mn
4.21	◆ Intermediate consumption		US\$ Mn
4.22	◆ Gross value added		US\$ Mn
4.23	◆ Compensation of employees		US\$ Mn
4.24	◆ Gross fixed capital formation		US\$ Mn
Non-monetary data			
◆ Domestic trips			
4.25	* with package tour		Percent
4.26	* without package tour		Percent
◆ Inbound trips			
4.27	* with package tour		Percent
4.28	* without package tour		Percent
◆ Outbound trips			
4.29	* with package tour		Percent
4.30	* without package tour		Percent

Basic data and indicators		Notes	Units
<b>5. EMPLOYMENT</b>			
<b>Data</b>			
<b>Number of employees by tourism industries</b>			
5.1	Total		('000)
5.2	◆ Accommodation services for visitors (hotels and similar establishments)		('000)
5.3	◆ Other accommodation services		('000)
5.4	◆ Food and beverage serving activities		('000)
5.5	◆ Passenger transportation		('000)
5.6	◆ Travel agencies and other reservation services activities		('000)
5.7	◆ Other tourism industries		('000)
<b>Number of jobs by status in employment</b>			
5.8	Total		('000)
5.9	◆ Employees		('000)
5.10	◆ Self employed		('000)
<b>Indicators</b>			
<b>Number of full-time equivalent jobs by status in employment</b>			
5.11	Total		('000)
5.12	◆ Employees		('000)
5.13	* male		('000)
5.14	* female		('000)
5.15	◆ Self employed		('000)
5.16	* male		('000)
5.17	* female		('000)
<b>6. COMPLEMENTARY INDICATORS</b>			
<b>Demand</b>			
6.1	Gross travel propensity		Units
6.2	(inbound tourists + domestic tourists) / population		Units
<b>Macroeconomic indicators related to international tourism</b>			
6.3	Inbound tourism expenditure over GDP		Percent
6.4	Outbound tourism expenditure over GDP		Percent
6.5	Tourism balance (inbound minus outbound tourism expenditure) over GDP		Percent
6.6	Tourism openness (inbound plus outbound tourism expenditure) over GDP		Percent
6.7	Tourism coverage (inbound over outbound tourism expenditure)		Percent
6.8	Inbound tourism expenditure over exports of goods		Percent
6.9	Inbound tourism expenditure over exports of services		Percent
6.10	Inbound tourism expenditure over exports of goods and services		Percent
6.11	Inbound tourism expenditure over current account credits		Percent
6.12	Outbound tourism expenditure over imports of goods		Percent
6.13	Outbound tourism expenditure over imports of services		Percent
6.14	Outbound tourism expenditure over imports of goods and services		Percent
6.15	Outbound tourism expenditure over current account debits		Percent



## Discussion Paper #7 – Key issues for measuring sustainable tourism<sup>1</sup>

### 1. Introduction

A number of discussion papers have been prepared for the purposes of appropriately defining the measurement scope and possible pathways for establishing a statistical framework for the measurement of sustainable tourism. Generally, these papers have aimed to provide the content required to set the direction and intent rather than discuss as aspects of detail. At this stage of the project this direction setting and bringing together a range of perspectives is by far the most important requirement.

At the same time, through discussions with experts and in the course of preparing the discussion papers, a range of technical issues have been identified. These issues will need to be confronted and resolved pending agreement on the proposed direction for the work. The purpose of this paper is to provide an initial list of technical issues for subsequent resolution through appropriate channels. It is not expected that these issues will be resolved at the Working Group of Experts meeting in October 2016. However, it is important to determine (a) whether the issues included in this note are relevant and if so, sufficiently well described; and (b) whether there are any other technical issues that experts can identify that should be the subject of further consideration as the MST project proceeds.

In general the issues included in this note are statistical in nature. It will also be important for non-statistical perspectives to also be drawn into the discussion and if there are particular challenges in policy and analysis that should be incorporated it would be very useful for these to be noted. The more complete the understanding of the use and application of statistics, the greater the chance that the statistical framework can be designed and focused most appropriately.

It is likely that for a number of issues various solutions and approaches have already been developed within certain disciplines and initiatives related to sustainable tourism. However, since the MST project represents a joining of experts from a number of disciplines, it is important that any existing solutions are shared. This document should thus serve as a platform for issues and solutions to be brought forward and exchanged.

### 2. Description of measurement challenges and issues

#### *Methodological challenges*

- i. The **integration of the demand side/consumption** – “visitor” - perspective inherent in tourism **with the supply side/production** perspective inherent in much environmental statistics. This issue has both a conceptual and a methodological dimension.
  - From a conceptual perspective, the definition of concepts such as “carrying capacity” and “sustainability” may be most easily understood from a supply side perspective – i.e. the potential for services and benefits to continue to be provided based on an understanding of the current available stock. Clearly there is a demand element to the supply-use equation, but teasing out precisely how this should be explained in the context of sustainable tourism and what this implies for measurement and interpretation will be important. It is quite possible that this issue has been well debated and resolved within sustainable tourism circles and perhaps it is largely a matter for making the connection to statistics.
  - From a methodological perspective, measurement of environmental flows in particular will likely commence from understanding flows such as water use, energy use, GHG emissions and solid waste from tourism businesses. The question that arises is how much of these flows is attributable to visitor activity. There are likely a number of options to be evaluated.

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<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEEA) and revised by Cesare Costantino, UNWTO Consultant.

- ii. The **attribution of environmental flows in the context of international visitors**. The standard SEEA/SNA approach to attribution involves assigning natural inputs and residual flows to the economic units that use or generate the flows. In the case of tourism this will generally mean that flows are attributed to economic units supplying tourism characteristic products. However, it may be of significant analytical interest to understand the contribution of the consumption of non-residents, including for example, the attribution of GHG emissions due to air travel to the residence of the traveller.
- iii. More generally concerning international visitor travel but also relevant in the context of sub-national measurement of tourism activity is the **treatment of transport activity** where the activity crosses the spatial measurement boundaries. Methods to allocate activity to countries and destinations will need to be determined.
- iv. A particular issue in tourism statistics, particularly at local level, is the **seasonal nature of tourism activity**. It will be important to consider options for recording information on a sub-annual basis to support analysis of seasonal trends and to consider how seasonal trends might be linked to environmental patterns – for example linkages between rainfall and water use.
- v. Generally, frameworks for economic statistics are based on a focus on production, consumption and investment behaviour of *individual* economic units, i.e. businesses, households and governments. However, when integrating environmental perspectives it is important to be able to allow for **public/societal costs and benefits**, many of which are not-priced explicitly in markets. The extent to which measurement of these public costs and benefits can be taken into account could be an important aspect of the framework.
- vi. Although the current focus of discussion is on integrating environmental data with tourism activity, it is important not to forget about the need to **integrate social and cultural dimensions of sustainable tourism** into the statistical framework. Approaches to undertaking this integration need to be developed.
- vii. Standard components of sustainable tourism indicator sets include information on **visitor perceptions** of destinations and **local community attitudes** to tourism. These types of data are not usually collected through official statistical frameworks but their relevance in assessing progress towards sustainable tourism is clear. Methods to integrate these data within the MST statistical framework will be needed.
- viii. One of the motivations for developing a statistical framework is the potential to derive **indicators of sustainable tourism** that are based on consistently defined and coherently measured underlying data. It will be relevant to consider what indicators could emerge from the statistical framework and how these should be defined. Indicator areas of interest include: SDG indicators, visitor environmental footprints, industry diversity/concentration ratios, energy/water use efficiency, and tourism leakages.

#### *Scale of measurement and systems boundaries*

- ix. Generally, statistical frameworks are developed and implemented to provide national level information. However, for understanding environmental impacts and dependencies and for understanding tourism behavior it is increasingly clear that **sub-national, destination and/or location level information** is required. Ideally, the statistical framework will provide coherence between national and sub-national perspectives. Of course, the data requirements are much increased as finer scale information is incorporated and some variables may not be amenable to measurement at finer scales. Thus describing the appropriate scales of measurement for the various parts of the statistical framework will be important, since it is likely that different data sources and measurement approaches are required for data at national compared to sub-national level. Intensifying a dialogue with users about their data expectations and the benefits/potential and requirements of data at various scales, including related data sources, will be beneficial.
- x. In defining the scales of measurement, a particular focus will be needed on incorporating the concept of **tourism destinations** with national and regional level areas. Given the intent to link environmental and economic data, this will mean that spatially defining tourism destinations will need to reconcile with areas that are meaningful from an ecological perspectives, such as water catchments and coastal zones.
- xi. The more general issue is agreeing on how the concept of a **system boundary for assessment of sustainable tourism** can be best defined and consistently applied for measurement purposes. It is likely the case that the boundaries that are used for economic, environmental and social systems are differently articulated and defined. The ability to support consistency in measurement for the purposes of collecting and presenting information but also flexibility to support alternative views will be a challenging area of discussion.

*Statistical infrastructure and data collection*

- xii. The development of tourism statistics covering the multiple dimensions of sustainable tourism and at sub-national levels will likely depend heavily on the availability of a sound **business register** to support the collection of a wide variety of information from tourism businesses. Understanding the quality of business registers and the potential for it to form a key piece of statistical infrastructure is an important area for discussion. Of special interest will be the potential for businesses to be geocoded and hence support the robust measurement of data at fine, sub-national scales.
- xiii. It is anticipated that much measurement of sustainable tourism will be able to be undertaken through the integration or adaptation of existing data. However, given the range of potential areas of investigation it will be necessary to give a clear sense of how **priority areas for statistics** can be identified, and hence provide an understanding of the extent to which new or adapted **data collections** are needed.
- xiv. An important part of the data integration challenge raised through measuring sustainable tourism will be the use and development of classifications that can be consistently applied in different datasets. The use of **standard classifications** is a key driving force behind the development of coherent data and the derivation of indicators. Relevant areas for which the use of standard classifications is needed include:
- Geography
  - Industry
  - Product
  - Environmental assets and flows
  - Visitors
  - Land cover and land use
- xv. From a data collection perspective, an interesting area for consideration is the potential role of **non-survey based data**, for example from administrative sources, mobile phones or satellite data. The potential to utilize this information should be considered in the development of the statistical framework particularly in the context of compiling sub-national and destination level estimates.
- xvi. The MST project is being taken forward by the international community of official statisticians as promoters of consistent and coherent measurement through national statistical systems. In this context, there is an important role for national statistical offices (NSO) in developing and implementing the framework. At the same time, in the area of sustainable development measurement, the role of NSOs has historically been unclear, especially with regard to regional and environmental statistics. In the area of tourism statistics, which may cut across the competencies of several different national entities, international compilation guidance has recognized the importance of inter-institutional collaboration and arrangements (in any case involving the National Tourism Administration and the Central Bank in addition to the NSO)<sup>2</sup>. It is therefore likely that progress will rely on collaborative efforts of multiple government agencies and other stakeholders. It will be important the MST project is able to discuss these issues and provide input on the potential **roles and responsibilities of different agencies**.

**3. Conclusion**

The purpose of this note is to commence the process of listing the various conceptual and measurement challenges that need to be considered in the development of the statistical framework for sustainable tourism. It is not expected that the list of issues described above is a definitive list and experts are encouraged to clarify issues as required and add new topics to the list.

It is intended that the list will form the basis of the research agenda identifying those issues that require more extended investigation and discussion through the process of preparing the statistical framework.

<sup>2</sup> International Recommendations for Tourism Statistics 2008 Compilation Guide. (IRTS 2008 Compilation Guide): <http://unstats.un.org/unsd/tradeserv/tourism/manual.html>.



## Discussion Paper #8 – Draft outline for a methodological document describing a statistical framework for measuring sustainable tourism<sup>1</sup>

### 1. Introduction

This draft outline for a methodological document describing a statistical framework for measuring sustainable tourism has been prepared to stimulate discussion on the potential to integrate international standards and recommendations on:

- i. the measurement of tourism, including tourism satellite accounts
- ii. the measurement of the environment and its links to economic activity, particularly environmental-economic accounting
- iii. the measurement of social and cultural phenomena
- iv. the measurement of data at sub-national and location level
- v. the use of statistical infrastructure such as business registers to underpin the collection and coherence of data.

Expressed in this dot point fashion the intended ambition may appear unreasonably large. However, in each area there are rich and relevant materials that can be built upon and furthermore, the intention at this point is to consider integration across the complete range of potential information in a staged fashion, i.e. gradually building a more complete framework over time.

Of particular importance in undertaking this work is that the focus for the development of the framework is clear – i.e. the measurement of sustainable tourism. Having a clear focus for use will enable the design of the statistical framework to be effectively targeted and also will help in setting clearer priorities for staging the work. It will be essential to keep in mind the intended use of the statistics during the heavily technical and statistical discussions that will take place in developing the statistical framework.

The work is being undertaken in the context of the UN World Tourism Organization (UNWTO) and UN Statistics Division (UNSD) project: Measuring Sustainable Tourism (MST). This specific paper complements other discussion papers also prepared for the meeting. Those papers have provided a rationale for a broad scope in the statistical framework; an initial focus on tourism, economic and environmental aspects of sustainable tourism; the importance of detailed spatial data as well as of statistical infrastructure. The discussion of these other papers will need to inform the direction taken for the methodological document outlined here.

As for other documents of this type, the focus is on describing what should be measured and the relevant context and framework rather than considering how measurement should be undertaken and related issues of implementation. This is not to say that issues of implementation are unimportant, indeed they are significant. It is envisaged that, subject to progress on describing a statistical framework, complementary documents focused on implementation would be developed, again building on existing resources as relevant.

### 2. Chapters proposed for the Statistical Framework for Sustainable Tourism (SFMST)

#### Chapter 1: Introduction

This chapter would cover

- Motivation and context for the MST project – sustainable tourism policy, SDGs, destination level statistics, links to other initiatives both statistical and policy related
- Description of the concept of sustainable tourism and summary of past measurement work. Highlight key concepts, policy themes, approaches to indicator development and the need of developing standardized statistical methods for measuring sustainable tourism

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<sup>1</sup> Prepared by Carl Obst, UNWTO Consultant and Director of the Institute for the Development of Environmental-Economic Accounting (IDEEA) and revised by Cesare Costantino, UNWTO Consultant.

- Relevance of a statistical framework and approach to the collection, organization and dissemination of data, including relevance of accounting frameworks particularly TSA and SEEA.
- Key features of the proposed statistical framework, covering
  - Links to sustainable tourism policy requirements
  - Priority areas for measurement
- Primary uses of the **SFMST**
  - Data organization and data gap analysis
  - Data collection and reporting
  - Derivation of aggregates and indicators
  - Potential for analysis and modeling
    - Extended input-output models and similar
    - Ecological footprint and similar
    - Tourism demand modeling
- Summary of potential applications of statistical framework based outputs to policy questions
  - Sustainable tourism / sustainable development / SDGs
  - Potential policy applications areas, including
    - Water use and water supply for tourism
    - Tourism employment and “green” jobs in tourism
    - Sustainable use of natural environments to support tourism activity and contribution of environmental assets to tourism activity
    - GHG emissions and potential effects of climate change (including transportation)
    - Waste flows from tourism activity
    - Role of eco-tourism
    - Trade-offs with alternative activities: fishing, agriculture
    - Leakages and footprint analysis
  - Spatial analysis
    - Sub-national
    - Regional (i.e. aggregation of countries – Caribbean, Mediterranean)

## **Chapter 2: Overview of the SFMST**

This chapter would cover

- Elements of the statistical framework including statistical infrastructure, highlighting the role of accounting frameworks
- Description and use of international statistical standards and frameworks, and other related work
  - International Recommendations for Tourism Statistics
  - SNA
  - TSA
  - SEEA Central Framework and SEEA Experimental Ecosystem Accounting
  - Framework for the Development of Environmental Statistics
  - INRouTe – spatially enabling tourism statistics
  - Others
- Key definitions and concepts
  - Visitors and usual environment
  - Tourism activity – characteristic industries and products
  - Environmental assets, including ecosystems and biodiversity
  - Environmental flows - natural inputs, residual flows
  - Spatial scales, including tourism destinations
- Basic statistical and accounting principles from SNA, TSA, SEEA Central Framework and SEEA Experimental Ecosystem Accounting
  - Economic units and business registers
  - Accounting principles of time of recording, valuation, etc
  - Stocks, with distinct focus on produced and environmental assets, and flows, both monetary and in physical units

- Quantities, prices and values
- Relevant classifications
- General form of statistical tables and accounts
  - Monetary supply and use tables
  - Flow accounts / Physical supply and use tables
  - Asset accounts
  - Combined presentations
- Spatial areas for measuring sustainable tourism (NB: This is a fundamental issue and may well deserve a chapter in its own right)

### Chapter 3: Organisation of data for key statistical domains

For all of the key statistical domains this chapter would present descriptions, definitions, measurement boundaries, classifications, data structures, measurement challenges and possible extensions. Some focus might be placed on data sources. The aim is to provide a means by which data from each domain can be integrated and compared across domains. Proposed domains for inclusion are:

- Visitor movements
- Tourism activity and expenditure
  - Information on main products including output, consumption (including by type of consumer – domestic, international, household, business, type of event), exports, imports
- Tourism characteristic industries
  - Business demographics such as size, ownership, location
  - Information on output, tourism share, value added, capital stock (produced assets – e.g. hotels, transport equipment, etc)
- Tourism employment
- Environmental flows
  - Water and wastewater
  - Energy
  - Solid waste
  - GHG Emissions
- Environmental assets
  - Land use and land cover
  - Extent and condition of natural environments supporting tourism activities (e.g. beaches and coastal areas, marine areas, national parks, rivers and waterways, ski-fields).
  - Air quality, water quality
  - Ecosystem services supporting tourism activity
  - Visitor and tourism impact
- Expenditure on environmental protection and other environmentally related flows (taxes, subsidies, etc)
- Tourism infrastructure (including e.g. walking trails, etc) and capital formation in tourism industries

Specific sections are proposed for special measurement issues, including

- Treatment of transport, especially international/cross border
- Seasonality
- Attribution of environmental flows to visitors

### Chapter 4: MST combined presentations, aggregates and indicators for sustainable tourism

This chapter would cover

- Nature and purpose of combined presentations
- Main combined presentations for the assessment of sustainable tourism
- Typology of aggregates and indicators
- Proposals for sustainable tourism indicators (e.g. for SDGs)