Comments to:

Statistical Framework for Measuring the Sustainability of Tourism

Consultation Draft

Draft prepared for initial round of consultation with the UNWTO Committee on Tourism Statistics and the Working Group of Experts on Measuring the Sustainability of Tourism

December 2018
Statistical Framework for Measuring the Sustainability of Tourism

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October 2018
Foreword

The Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) is an organizing structure for integrating statistics on the economic, environmental and social dimensions of sustainable tourism. It is planned that a final and complete SF-MST will be submitted for consideration by the United Nations Statistical Commission in March 2020 following an active process of research, discussion and consultation across multiple experts, sectors and stakeholders in the coming two years.

This draft of the SF-MST has been prepared for further consultation with the members of the Working Group of Experts on Measuring the Sustainability of Tourism. This draft takes into account feedback from around 20 agencies and experts in the first round of consultation undertaken in March - April 2018.

The SF-MST responds directly to the increasing demand for information that takes in account the various aspects of sustainable development and that considers different scales of analysis from local to global levels. These demands are most highlighted in the need for measures of progress towards the internationally agreed Sustainable Development Goals (SDGs) as part of the 2030 Development Agenda.

Tourism is widely understood to be a catalyst for sustainable development, an understanding encapsulated in the recognition of 2017 as being the International Year of Sustainable Tourism for Development. The coherent measurement of the sustainability of tourism is one key means by which policy development and monitoring can work to support this potential.

United Nations World Tourism Organization (UNWTO) is the United Nations agency with the responsibility to carry forward work on the measurement of tourism. With the motivation to improve tourism statistics in the area of sustainability, in 2015 UNWTO commenced, jointly with the United Nations Statistics Division, the MST project. A Working Group of Experts has been formed to provide the technical direction required to advance the SF-MST. This group will operate under the auspices of the UNWTO Committee on Tourism Statistics and Tourism Satellite Accounts and in concert with the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA).

This Draft reflects a synthesis of available material on the measurement of the sustainability of tourism from the perspective of official statistics. It builds on materials prepared for and discussed at the first meeting of the Working Group of Experts in October 20161 and discussion at the January 2017 UNWTO Committee of Tourism Statistics and TSA2 on a draft outline for the SF-MST. This Draft also incorporates small extensions to the Preliminary draft presented to the 6th International Conference on Tourism Statistics, Manila, Philippines in June 20173 and, as noted above, incorporates the substantive and constructive feedback from the first round of consultation on SF-MST in March-April 20184.

The SF-MST is a somewhat different document compared to many other statistical frameworks because it has a scope which involves connections among a range of statistical domains across economic, environmental and social statistics. As a result, the general

1 http://statistics.unwto.org/wg_meeting
2 http://statistics.unwto.org/committeeetsa_17thmeeting
3 http://statistics.unwto.org/mstconference
4 http://statistics.unwto.org/sf_mst
ambition is to seek to build on, and integrate the existing statistical standards in relevant areas. For this reason, the structure and content of the SF-MST varies to some degree from other statistical standards. The structure of the SF-MST is described in section 1.5.

All of the material in this Draft should be considered a work in progress and requiring further discussion among experts and stakeholders. Nonetheless, it is clear from engagement in the MST project to this point, that the broad framing and approach reflected in the SF-MST has substantive support from both the statistical community and the broader tourism community. The work has received strong endorsement from the United Nations Statistical Commission at its session in March 2017 and it has been endorsed by the UN Committee on Tourism Statistics and Tourism Satellite Accounts and the UNCEEA. Most significantly, the development of the SF-MST is the key focus of the Manila Call to Action, a joint declaration of Ministers, Chief Statisticians and other conference participants, issued at the 6th International Conference on Tourism Statistics in June 2017 and reinforced as a key area of work at the 2017 UNWTO General Assembly in September 2017.

Beyond the development of this statistical framework, the MST project will aim to develop relevant compilation guidance, including for example guidance on the compilation of TSA, and similar materials to support compilers. An early example of this is the completion of a draft Technical Note on Linking System of Environmental-Economic Accounting (SEEA) and TSA as presented to the 6th International Conference on Tourism Statistics in Manila, June 2017. As well, the MST project is supporting pilot studies in a number of countries and will work towards the development of training courses, capacity building and implementation programs.

Overall, the intent to progress towards sustainable development outcomes, as embodied in the SDGs, requires evaluation of information that reflect changes over time and differences across locations. This requirement is a strong argument in favour of establishing comparable statistics as envisioned in the development of this statistical framework. It is hoped that the provision of this updated draft SF-MST will further stimulate interest in the potential of this area of statistical development.

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1 Introduction

1.1 What is sustainable tourism?

Sustainable tourism has been a topic of discussion in tourism circles since the early 1990s. The long-standing work of UNWTO in sustainable tourism is reflected in a range of contributions to policy and measurement. Using a focus on tourism destinations, the UNWTO has articulated that sustainable tourism should:

i. make optimal use of environmental resources and conserve natural resources and biodiversity

ii. respect the socio-cultural authenticity of host communities

iii. ensure viable, long-term economic operations, including stable employment and contributions to reducing poverty.

The UNWTO definition of sustainable tourism is presented in 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.

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**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*

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The ongoing interest in sustainable tourism has been driven by two key factors. First, there was 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 second key factor has been the tremendous growth in tourism activity in the past 20-30 years. This growth has established three lines of interest in the sustainable tourism space:

i. the reality that in contributing a larger share of economic activity in most countries, tourism activity is contributing more to the use of environmental resources and its impact on the natural environment is increasingly significant
ii. the idea that tourism activity might provide a path by which lower income countries and region might improve their standard of living
iii. the recognition of the dependence of tourism activity on its environmental and social contexts and the need to keep these underpinning supports in good condition.

The interest in sustainable tourism culminated in 2017 being declared the United Nations International Year of Sustainable Tourism for Development (IY2017). This was especially timely given the increasing momentum towards sustainable development following the adoption of the United Nations 2030 Agenda for Sustainable Development and the associated Sustainable Development Goals (SDGs). In broad terms, these milestone achievements highlighted the need to integrate advances for people, planet, prosperity, peace and partnerships.

Tourism has the potential to contribute, directly or indirectly, to all of the 17 SDGs. In particular, targets relating to sustainable tourism are explicitly referenced in SDG 8 on decent work and economic growth, SDG 12 on responsible consumption and production and SDG 14 on life below water. An important objective in the development of the SF-MST is the design and implementation of indicators to measure progress towards these targets and goals.

In the context of the United Nations 2030 Agenda and the SDGs, IY2017 aimed to foster a change in policies, business practices and consumer behavior for a more sustainable tourism sector. It explored and highlighted tourism’s role in five key areas:

i. Inclusive and sustainable economic growth
ii. Social inclusiveness, employment and poverty reduction
iii. Resource efficiency, environmental protection and climate change
iv. Cultural values, diversity and heritage
v. Mutual understanding, peace and security

And had four lines of action: advocacy and awareness raising, knowledge creation and dissemination, policy making and capacity building and education.

SF-MST is an output that draws strength from the catalyzing effect of the IY2017 in building the recognition of the role of sustainable tourism. It is intended that SF-MST provides a tool to support the long-term embodiment of the IY2017 themes.
1.2 A statistical approach to measuring the sustainability of tourism

1.2.1 Measuring sustainability and sustainable development

Most commonly, the development of statistics commences from a well-established and broadly agreed concept that can be the focus for the development of rigorous definitions, classifications and measurement methods. Examples include population growth, unemployment and visitor numbers.

For the measurement of sustainability and sustainable development, there is no widely accepted concept that can be used to underpin a measurement framework. There is general agreement that measurement should encompass three primary dimensions – economic, environment and social – but what precisely determines whether a particular activity or location is sustainable is not agreed. In part, the extent of sustainability will be dependent on the time horizons being considered, the scale of analysis (e.g. local communities or countries), the perspective of the analysis (local business, government official, visitor) and the set of values that are applied to understand the relative importance of economic, environmental and social dimensions.7

In this context, three broad approaches have been developed to support assessments of sustainability and associated concepts such as capacity and resilience.

Indicator sets: The first approach involves the selection of indicators to form sustainable development indicator sets. A most significant recent example is the set of SDG indicators but there is a myriad of sustainability indicator sets for countries, sub-national regions, destinations and sectors. While the selection of indicators is commonly participatory, and will usually encompass the three key dimensions of sustainability – economic, environment and social - indicator sets do not describe the interlinkages between the dimensions.

Indicators sets can raise the profile of sustainable development and support the setting of expectations and policy targets with respect to individual aspects of sustainable development, but they do not provide any particular statement with respect to overall sustainability. Consequently, the task of assessing sustainability in any given context requires the user to develop their own conceptual model of how data from each of the dimensions might be connected.8

Composite/weighted indexes: The second approach is to combine a selection of indicators into a composite or weighted index of some type, generally through the initial identification of specific themes relevant to the sustainability context of interest and then the combination of relevant indicators using pre-determined models. A well-known example is the UNDP Human Development Index which combines data on life expectancy, education and per capita income9. While this approach does provide an overall sense of direction through a single number, there is no definitive list of themes (and related indicators), the relative importance (or weighting) of each indicator is open to question, and commonly these indexes tend to smooth out the effects of internal variations present in the component indicators (i.e., the effects of increases in some indicators and decreases in others will tend to average out at the aggregate level).

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7 An extensive summary and discussion on the measurement of sustainability and sustainable development from a statistical perspective is provided in UNECE 2015.
8 See also: Tourism Indicators for Measuring the SDGs, Key note by Peter Laimer, Sixth UNWTO International Conference on Tourism Statistics Measuring Sustainable Tourism, Manila, Philippines, 21-24 June 2017.
9 http://hdr.undp.org/en/content/human-development-index-hdi
Multiple capitals and wealth accounting: The third approach is to apply economic theory about the relationship between (i) income (and similar benefits) and (ii) the underlying stock of capital or wealth (encompassing all types of capital - produced, natural, human and social capital) to understand whether the flow of benefits can be sustained in the future. Measurement approaches based on multiple capitals include accounting approaches such as the System of National Accounts (with a focus on economic capital) and the System of Environmental-Economic Accounting (with a focus on natural capital). At its most comprehensive, this approach is generally referred to as wealth accounting and has been the subject of increasing interest, for example in the IHDP-UNU and UNEP work on Inclusive Wealth Accounting and the World Bank’s Changing Wealth of Nations (World Bank, 2018). Wealth accounting provides a theoretical approach to the integration of data across multiple dimensions to provide insights into sustainability. Multiple capital-based approaches are relatively static in their consideration of sustainability, and hence an extension is to apply systems dynamics and take into consideration the feedback loops between the various stocks and flows within a given system over time.

In practice, both multiple capitals-based approaches and system dynamics approaches have limitations. Wealth accounting requires the measurement of monetary values, in the form of shadow prices, for all types of income and capital and is limited to an economic perspective on sustainability. System dynamics approaches can be directly tailored to individual contexts but are difficult to standardize in a way that supports ongoing measurement and comparison.

Overall, the most sound conceptual approach to measuring sustainability is to recognize the potential inherent in multiple capitals and systems dynamics-based approaches and to provide a statistical accounting framework that supports a systems perspective. While there are conceptual challenges, accounting-based approaches reflect a willingness to engage with the complexity inherent in the description and measurement of sustainable development. Hence, they provide a pathway through which the development of statistics can also engage with this complexity and hence best support the real challenges faced by decision makers.

1.2.2 Measuring the sustainability of tourism

In the context of tourism, the aim in SF-MST is to apply a multiple capitals-based approach and describe an accounting-based statistical framework for the measurement of the sustainability of tourism across its economic, environmental and social dimensions. Recognising that the precise measurement of sustainability will vary over time and location, the aim is not to provide a singular definition of sustainable tourism as such. This would require not only the organization of data but the determination of various thresholds, limits and relative values which lies beyond the remit of a statistical approach. Rather, the ambition is to provide a standardized approach to framing a discussion of sustainability in tourism and to organizing the relevant data to inform this discussion. Importantly, an accounting-based statistical framework can underpin the selection and compilation of indicator sets, the derivation of composite indexes and the estimation of wealth accounts and systems dynamics.

Further, the approach taken in SF-MST is to recognize that individual contexts, such as for a single tourism destination, may be usefully characterized in terms of “nested systems” – i.e. where the economic system is embedded within a social context which in turn sits within an environmental system. This “economy - in society - in nature” perspective (ref#) is shown in

10 http://www.ihdp.unu.edu/docs/Publications/Secretariat/Reports/SDMs/IWR_SDm_2014.pdf
Figure 1b in contrast the more traditional conception of the relationship between the three dimensions in Figure 1a where the economy, the environment and society are distinct systems, even if slightly overlapping. Using a systems framing as the starting point to consider the measurement of sustainability supports inclusion of all three primary dimensions of sustainability and provides the opportunity to explicitly consider the connections between different spatial scales.

1.2.3 A history of measuring tourism

UNWTO, as the specialized agency responsible for the promotion of responsible, sustainable and universally accessible tourism, is committed to ensure that tourism plays a key role in progress towards sustainable development. Using a focus on tourism destinations, UNWTO has articulated a definition of sustainable tourism (UNWTO & UNEP, 2005), provided a guide to the set of relevant policy themes (UNWTO & UNEP, 2005) and described a comprehensive range of indicators that may be used in measuring progress towards sustainable tourism at destination level (UNWTO, 2004).

UNWTO also has a mandate for the collection and dissemination of tourism statistics and the development and implementation of associated international statistical standards. The work dates back as far 1937 and the first definition of an “international tourist”, and extends through the following 80 years with provisional guidelines on tourism statistics released in 1978; initial developments on tourism economic accounts in the 1980s and 1990s; the 1993 Recommendations on Tourism Statistics in 1993; and the 2001 Tourism Satellite Account: Recommended Methodological Framework. The most recent advances are reflected in the International Recommendations for Tourism Statistics 2008 (IRTS) (UNWTO, et al, 2008) and the Tourism Satellite Account: Recommended Methodological Framework 2008(TSA:RMF) (UNWTO et al, 2010).

A key feature of the TSA:RMF was its articulation of the supply and the demand (visitor) perspectives of tourism activity. By providing a means to demonstrate the differences and connections between these two perspectives it become possible to present in a coherent
fashion the majority of data on the economic dimension of tourism. The use of accounting principles was central to providing an integrated framework.

With respect to the measurement of sustainable tourism, the main contribution of the UNWTO has been the ongoing work to develop relevant sets of indicators that respond to policy needs, most notably 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.

Notwithstanding the importance of identifying indicators for measuring the sustainability of tourism, it is clear that there is a significant gap from an official statistics perspective in defining standards for a framework that integrates economic, environmental and social statistics at relevant spatial levels (including local, national and global) that are required for assessment of sustainable tourism. This gap was recognised in both the IRTS and the TSA-RMF. With the aim of closing this statistical gap, in 2015 the UNWTO launched the Towards a Statistical Framework for Measuring Sustainable Tourism (MST) initiative ([http://cf.cdn.unwto.org/sites/all/files/docpdf/brochurees.pdf](http://cf.cdn.unwto.org/sites/all/files/docpdf/brochurees.pdf)).

The SF-MST represents the next step in the development of tourism measurement and the MST project can be seen as a logical extension of past work on tourism statistics that builds on, and does not replace, the existing standards for tourism statistics. Indeed, through each generation of statistical development for tourism, the measurement boundaries have progressively broadened as the understanding of the scope and impact of tourism activity has continued to broaden. The scope of the MST to capture a full range of economic, environmental and social aspects of tourism thus stands on the shoulders of past measurement work.

A feature in the development of tourism statistics has been the role of international conferences in providing launching platforms for each stage of development. The developments in measuring sustainable tourism are no exception, with the profile of work being significantly raised at the 6th International Conference on Tourism Statistics held in Manila in June 2017. A key outcome from the conference was the Manila Call to Action, a joint declaration of Ministers, Chief Statisticians and other conference participants (see Annex 1). Among a range of actions, the Manila Call to Action explicit requests the development of the SF-MST, a call that had been endorsed at the United Nations Statistical Commission meeting in March 2017 and that was reinforced as a key area of work at the UNWTO General Assembly in September 2017.

### 1.2.4 The role of statistical frameworks

A statistical framework is an organizing structure for data and statistics that provides a common understanding of concepts, definitions and related terminology. A framework is independent from the sources from which data might be collected and from the methods used to compile the statistics. By way of example, data to measure the same statistical definition of employment may be collected via household surveys, administrative sources or population census. In this context, the SF-MST is a platform for integrating data and statistics from different sources about the various dimensions of sustainable tourism.

The role of statistical frameworks is depicted in Figure 2 where multiple data sources, for example covering economic, social and environmental data sets, are brought together

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11 IRTS, 2008 Chapter 1 (UNWTO, 2010) provides a description of the historical development of tourism statistics.
through statistical frameworks to provide a coherent set of information, that can support (i) monitoring and reporting (and associated indicators), (ii) evaluation and assessment and (iii) modelling and projections. Each of these activities are important parts of the policy and decision-making process.
Over time, the importance of statistical frameworks becomes more apparent since while the concepts and definitions can be kept relatively stable, it is likely that (i) data sources will change over time – witness for example the emergence of big data and spatially rich data sets – and (ii) there will be ongoing changes in policy themes, aspirations and targets. Maintaining a stable statistical framework at the heart of measurement ensures that data can be linked to policy in meaningful ways and that effective comparisons can be made on an ongoing basis, notwithstanding the ongoing changes in data sources and policy needs. The System of National Accounts is a prime example of the development of statistical framework that works in conjunction with policy.

The challenge in the development of the SF-MST is that while statistical frameworks have been developed in the different dimensions included in sustainable tourism, i.e. in economic, environment and social dimensions, there is no underlying alignment between the statistics in these different dimensions. Overcoming this fragmentation is the key objective in SF-MST.

Ultimately, data should be collected and analyzed on a consistent basis over time and across different destinations and countries. Implementation of a statistical approach involves developing standard definitions and concepts, non-overlapping measurement boundaries and clear means of comparing and integrating different components.
As for all statistical frameworks, the SF-MST is designed to be implemented on an ongoing basis to provide a consistent and coherent picture of sustainable tourism over time. The assessment of sustainability requires consideration of both past and expected changes in each of the dimensions and, in this situation, one-off studies do not provide a sufficient base for ongoing decision making. A time series of data can help directly in framing assessments of sustainability.

The concepts of the SF-MST can be applied to all temporal frequencies, e.g. from monthly and quarterly to annual and less regular collections. Sub-annual information may be of particular interest in the analysis of sustainable tourism at sub-national levels where peaks in tourism demand may place specific pressures on local communities, ecosystems and infrastructure. In these cases, the use of annual averages in decision making may mask significant seasonal concerns. Decisions about the appropriate frequency of data collection and reporting should be based on the relevant policy and analytical questions and the available resources.

1.2.5 The benefits of a statistical approach

A range of examples reveal that it is possible to develop an information base for assessing the sustainability of tourism where each destination or country forms its own definitions and associated measurement components (ref#). However, when the information challenge is tackled individually, the potential for comparison, sharing experience and embedding ongoing measurement advances is substantially reduced.

The SF-MST thus aims to provide a single reference point for extending the current range of tourism statistics to cover the three dimensions of sustainable tourism – economic, environmental, social – at relevant spatial scales, including at global, national and subnational levels. Further, as shown in Figure 3, the SF-MST plays a key role in linking the discussion of sustainable tourism policies with the development of data and methods.

Figure 1.3: Placing the SF-MST in context
The development of a statistical framework would secure the following benefits:

- A common language for discussing the sustainability of tourism within the tourism sector itself and with other key policy areas such as planning, industry, infrastructure, environment, social affairs, finance and central banks;
- The ability to compare the performance of the tourism sector and the impacts of different policies on a consistent basis with other sectors and in different destinations and countries;
- The basis for improving co-ordination in data collection and organization, identifying opportunities to use new and alternative data sources, improving the effectiveness of training and capacity building, and improving institutional arrangements for the governance and management of statistics on tourism;
- The foundation for a single, coherent and complete picture of the sustainability of tourism and its trends.

The importance of developing a common language to support comparison cannot be overstated. It may appear that integration of information for a single group of decision makers is sufficient, for example for local/destination managers, or for national tourism administrators. However, it is clear that decisions by different groups are inter-connected. For example, local and national policy choices influence each other, as do the policy choices of different departments and agencies. Given this reality, there may be considerable barriers to progress if different stakeholders have information based on varying definitions and measurement boundaries. A statistical approach as recommended in the MST project works to overcome these information barriers and support more engaged and inclusive decision making.
1.3 Overview of the SF-MST

1.3.1 Introduction

The SF-MST sits at the intersection between data sources and the use of data for reporting and analysis (see Figure 2). Within individual dimensions and statistical areas, such as the economic dimension, the role of statistical frameworks, like the System of National Accounts (SNA), in translating multiple sources into a coherent single picture is usually invisible. This is good because it ensures that the focus of attention is where it should be: on the resulting statistics and their use in analysis and decision-making. The long-term ambition for SF-MST is therefore that the definitions and structure that it provides becomes an invisible platform for the integration of all relevant information in the assessment of sustainable tourism.

The link between the layers of information is shown in Figure 4. Data from different data sources and encompassing economic, environmental and social dimensions, are integrated using the standard definitions, classifications and measurement boundaries of the SF-MST to compile a series of SF-MST accounts. SF-MST accounts generally conform to standard accounting principles and focus on accounting for (i) particular types of capital (asset accounts); (ii) sets of flows (supply and use tables) or the allocation of flows to economic units (sequence of accounts). Other SF-MST accounts provide information on individual themes according to standard classifications and measurement boundaries.

The information in SF-MST accounts can then be summarized in combined presentations. Combined presentations are summary tables showing selected variables from SF-MST accounts that are designed cater to specific policy interests or which may be used for the derivation of indicators. Combined presentations may be configured in many different ways.

In a final stage information from combined presentations can be used to provide decision support tools through monitoring and reporting (including via indicator sets), evaluation and assessment and modelling and projections. As the information required in any application becomes more detailed, it may be relevant to access information directly from underlying base accounts and tables, this is particular true for modelling and projection type of work. An introduction to decision support tools reflecting the application of the SF-MST is provided in section 1.4.

The scope of the SF-MST itself is the description of

- standard definitions, classifications and measurement boundaries
- SF-MST accounts
- combined presentations.

The SF-MST provides the basis for the discussion and definition of indicators of sustainable tourism, including in the context of the United Nations’ Sustainable Development Goals (SDGs).

Figure 1.4: Components of the SF-MST
While the development of the SF-MST 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 for Tourism Statistics 2008 (IRTS), the 2013 Framework for the Development of Environment Statistics (FDES) and the various standards relating to the measurement of labour statistics. In relation to accounting frameworks the key publications are the System of National Accounts 2008 (SNA), the TSA:RMF and the System of Environmental-Economic Accounting 2012 (SEEA)\textsuperscript{12}.

An important aspect of the SF-MST is the development of data at a destination level. In concept, all of the statistical standards and guidelines just described, including the national accounts, can be applied at different spatial scales, in the same way as statistical standards are equally applicable for very large and very small countries. However, there may be significant challenges of collecting data at sub-national levels and it may be the case that the relevance of different data varies at different scales. Given the importance of spatial detail to the assessment of the sustainability of tourism, Chapter 5 is devoted to a discussion of the relevant issues.

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\textsuperscript{12} As described below, the SEEA consists of three parts: System of Environmental-Economic Accounting 2012 Central framework, System of Environmental-Economic Accounting 2012 Experimental Ecosystem Accounting and System of Environmental-Economic Accounting 2012 Applications and Extensions. Key aspects of the SEEA framework are discussed in chapter 3.
1.3.2 Coverage of SF-MST

SF-MST covers the three primary dimensions of sustainability – economic, environmental and social. Information on all three dimensions must be considered in the assessment of sustainability. Other concepts related to sustainability such as resilience, diversity and equality are considered in the context of these three primary dimensions.

The following short descriptions are intended to provide a general sense of the coverage. In reality there are commonly linkages and overlaps between the dimensions such that specific themes may be considered part of more than one dimension. For example, employment is relevant in both economic and social dimensions. From a framework perspective, it is sufficient to ensure that all relevant themes are captured in a mutually exclusive way. How the statistics for individual themes are subsequently organized and applied in decision making tools is not limited by the design of the framework.

The economic dimension covers the production and consumption associated with tourism activity in terms of associated goods and services. This will commonly be reflected in measures such as visitor consumption and the output of tourism industries. The economic dimension also includes description of the characteristics of tourism industries and the production processes of tourism industries. It thus captures investments in produced capital (hotels, transport infrastructure, etc.); employment in tourism and human capital (including skills and experience); and information on the size, industry class and ownership of tourism establishments. A detailed description of the economic dimension of the framework is contained in Chapter 2.

The environmental dimension concerns the stocks and changes in stock of environmental assets, often referred to as natural capital, that support tourism activity through the provision of ecosystem services or are affected by tourism activity. Natural capital includes land, beaches, coastal and marine areas, national parks, rivers, etc. As well, the environmental dimension incorporates measurement of the flows of natural inputs to tourism production processes, such as flows of water and energy, and the flows of residuals that are generated from tourism production and consumption including GHG emissions, solid waste, wastewater and other pollutants. A detailed description of the environmental dimension of the framework is contained in Chapter 3.

The social dimension covers a range of social aspects related to tourism activity. It includes the local, traditional and indigenous cultural aspects that can support tourism activity or may be impacted by tourism. It also includes the outcomes of tourism production processes in terms of the provision of decent work and occupational health and safety (and hence links to employment); the contribution to individual and community health and well-being; performance in relation to gender equality, income equality and other aspects of equality; and the development of social capital reflected in the strength of community networks and institutional arrangements. A detailed description of the social dimension of the framework is contained in Chapter 4. <<This summary to be confirmed pending further development of the chapter.>>

1.3.3 Applying an accounting approach

As introduced above, the conceptual approach of the SF-MST is based on the multiple capitals, accounting-based approach and involves assessing sustainability through measurement of a broad set of capitals – produced, natural, human and social capital - and the flows of related incomes and benefits. While this seems a large task, in fact a wide range of statistical guidance is available.
The logical starting point for the implementation of an accounting-based approach is a focus on produced capital as defined within the framework of the United Nations’ System of National Accounts (SNA). The SNA 2008 (EC et al, 2009) is the most recent version of this international standard and provides the basis for the measurement of economic activity and economic wealth. Compilation of SNA consistent datasets is standard practice in all countries and consequently the majority of economic statistics available within a country will be collected in such a way as to be consistent with, or at least closely aligned to, the relevant definitions and measurement boundaries.

The application of the SNA principles to tourism is encapsulated in the international standard for TSA - the TSA:RMF. This document describes in detail the accounting framework for describing tourism’s role in economic activity using a set of 10 interlinked tables and accounts. The TSA:RMF is underpinned by the IRTS which provides the international standard for the definition of visitors, tourism consumption and other tourism statistics.

By using the SNA as a starting point and its representation for tourism in the TSA:RMF, the SF-MST ensures that measurement of the economic dimension of tourism can be directly aligned with measures of the economic performance of other sectors, of the economy as a whole and in reference to various components of economic activity (e.g. production, investment, consumption).

With respect to natural capital, the System of Environmental-Economic Accounting (SEEA) 2012 is the overall international statistical standard for the measurement of the environment and its relationship to the economy. It has four key accounting components: environmental flows (such as water, energy, emissions and waste), natural resources (such as land, soil, fish and energy resources), environmental transactions (such as environmental protection expenditures and environmental taxes) and ecosystem assets and services (such as forests, wetlands, parks and coastal areas). The first three components are described in the SEEA 2012 Central Framework and the fourth component is described in the SEEA 2012 Experimental Ecosystem Accounting.

The SEEA, like the TSA:RMF, is a national accounting based framework that applies the accounting principles of the SNA. The SF-MST takes advantage of this common origin of the SEEA and the TSA:RMF which allows the environmental dimension of sustainable tourism to be coherently integrated with the economic dimension. The integration of the SEEA and the TSA:RMF has been a key foundation for the SF-MST.

The human capital component is captured in the SF-MST in two ways. First, using information on the composition of tourism employment building on existing statistical work in this area by UNWTO and ILO. Second, the SF-MST will discuss the potential for the measurement of human capital in tourism following accounting based approaches that have been developed over the past 30 years (e.g. Jorgenson and Fraumeni, 1989) and being further advanced in a number of countries and by the OECD.

Accounting-based approaches for the measurement of the social dimension are not well developed at this stage. To the extent possible, the SF-MST takes advantage of research and practice concerning cultural satellite accounts that are under development as applications of SNA principles. In other areas of the social dimension, measurement focuses on relevant data and indicators that are based to the extent possible on other statistical guidance and standards. An example is the ILO research on decent work.

More broadly, it is recognized that the application of an accounting approach to the social dimension could ultimately bring into consideration the measurement of social capital. Changes in the extent and quality of social capital over time (for example, in terms of the
quality of community networks) could represent an important aspect in the measurement of the sustainability of tourism.

While the SF-MST encompasses the full range of types of capital and does so within a broad accounting rationale, the SF-MST does not reflect, nor does it aim to be, a fully integrated and consolidated “triple-bottom line” approach or adopt a requirement for the full monetization of all economic, environmental and social stocks and flows.

Rather, the intent is to use an accounting approach to place all relevant information in an appropriate context, distinguishing clearly between stocks and flows. Data organized in this way is then well suited to supporting assessments of sustainability that are comparable and consistent, including the development of indicators sets. The use of an accounting approach thus provides a way of consistently framing the discussion of sustainability, and related topics of capacity and resilience.

1.3.4 Accounting for spatial scale

The conceptual framing for SF-MST recognizes the importance of reflecting the interactions between the economic, environmental and social dimensions at different spatial scales. Determining the appropriate spatial scale provides the entry point for discussions of sustainability. Further, while there will always be connections between all spatial scales, the SF-MST works from the premise that measurement at a sufficiently small spatial scale, for example by sub-national region or tourism destination, will likely provide the most useful reference point for the integration of the economic, social and environmental dimensions.

This view is consistent with the concept of sustainable tourism (section 1.1) which is generally embodied at a detailed spatial level (e.g. in relation to host communities) since it is at this level that the economic, environmental and social dimensions interact in a given context and where assessment of the interactions among these dimensions may be most tangible.

At the same time, interactions at a local level occur within a broader setting and issues that gain more relevance at national and global scales, such as concerning financial markets, and climate change, need also to be considered. Thus, from a statistical perspective, the SF-MST aims to ensure a consistency in definition that supports comparison local to national to global levels.

Discussion of the topic of defining spatial areas immediately suffers from the choice of language and wording to describe the different scales of measurement and analysis that different stakeholders are considering. In summary, the following terms are applied in the SF-MST:

- **Global** – referring to all countries and marine areas
- **Supra-national areas** – referring to groupings of countries
- **National** – referring to countries
- **Regional** - referring to the level of administrative unit directly below the national level (corresponds to the NUTS 2 level in the EU territorial classification scheme)
- **Municipal or city-region** - referring to the level of administrative units corresponding to localised but relatively large populations.
- **Local** - referring to the areas or zones within a given municipality that exhibit particularly concentrations or clusters of commonly purposed or aligned activities
and businesses. It is not expected that administrative units would be defined at this spatial level.

The term **tourism destination** might refer to any of these scales (except perhaps global). Thus, a destination might be a country, a region, a municipality or a location. In the discussion of the sustainability of tourism, the concept of a tourism destination appears to be most commonly associated with spatial areas defined at the local or municipal level and, when the term destination is used, it is this smaller conception of tourism area that is being applied.

The intent in the MST is to integrate economic, environmental and social data. For many of these data, the scales listed above would be relevant, in the sense that data should be able to be attributed to a location and hence also aggregable and meaningful at other, larger scales. However, for some types of data, for example relating to transportation activity or environmental condition, simple aggregation may not be appropriate and the relevant spatial boundaries for measurement and analysis will require further discussion.

A detailed description of the way in which spatial aspects are considered within the framework is contained in Chapter 5.

### 1.3.5 SF-MST accounts

There are two primary types of accounts used in the SF-MST – asset accounts and supply and use accounts (SUA). The various asset accounts and SUA for economic, environmental and social dimensions are described in chapters 2, 3 and 4.

Asset accounts may be compiled in monetary and non-monetary terms. They are designed to show the opening and closing stocks of specific asset types (e.g. produced assets, environmental assets, human capital, social capital) and changes in the stocks of assets over an accounting period (e.g. one year). An aggregate in monetary terms of all asset types provides an estimate of the net wealth of a given territory.

SUA may also be compiled in both monetary and non-monetary terms and relate to balancing the flows of goods and services among different economic units, including households, and between the economy and the environment. They may also be structured so as to show flows between different spatial areas. SUA compiled in monetary terms contain the information required to estimate gross domestic product and related measures of economic activity.

Each account stands alone in the sense of applying specific accounting identities such that there is a complete and balanced set of information in each account. At the same time, each account operates as part of an overall system of accounts in which linkages can be made among different accounts each focusing on a specific aspect. The SF-MST thus comprises a series of accounts, each covering specific aspects of the sustainability of tourism, but defined in an aligned and coherent fashion.

There will be other complementary statistics required to support understanding the sustainability of tourism that will not fit directly into these accounting structures. Examples include information on employment, demographics of tourism establishments, visitor movements and indicators in the economic, ecological and social dimension. Nonetheless, to ensure consistency and comparability of data, these other statistics are grouped and classified using the same classifications as used in the SUA and asset accounts. This will support the integration of data and enhanced data analysis. The relevant classifications are documented in chapters 2, 3 and 4.
Table 1.1 provides a summary of the different SF-MST accounts. They are grouped according to their strength of association with the economic, environmental or social dimension noting that all accounts should be considered related to all dimensions to some degree – for example, employment in tourism is listed below under the economic dimension recognizing that employment information will also be relevant in the social dimension.

**Table 1.1: Types of SF-MST accounts** (initial proposals only)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>SF-MST accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Tourism activity SUA</td>
</tr>
<tr>
<td></td>
<td>Visitor movements</td>
</tr>
<tr>
<td></td>
<td>Tourism expenditure</td>
</tr>
<tr>
<td></td>
<td>Tourism infrastructure asset account</td>
</tr>
<tr>
<td></td>
<td>Employment in tourism</td>
</tr>
<tr>
<td></td>
<td>Demographics of tourism establishments</td>
</tr>
<tr>
<td>Environmental</td>
<td>Water SUA (including wastewater flows)</td>
</tr>
<tr>
<td></td>
<td>Energy SUA</td>
</tr>
<tr>
<td></td>
<td>GHG emissions SUA</td>
</tr>
<tr>
<td></td>
<td>Solid waste SUA</td>
</tr>
<tr>
<td></td>
<td>Land use asset account (incl marine areas)</td>
</tr>
<tr>
<td></td>
<td>Land cover asset account (incl marine areas)</td>
</tr>
<tr>
<td></td>
<td>Water resources asset account</td>
</tr>
<tr>
<td></td>
<td>Ecosystem condition account for tourism related areas</td>
</tr>
<tr>
<td></td>
<td>Ecosystem services SUA for tourism related areas</td>
</tr>
<tr>
<td>Social</td>
<td>Social and community indicators (e.g. crime, health, congestion, decent work,</td>
</tr>
<tr>
<td></td>
<td>local perceptions of tourism)</td>
</tr>
<tr>
<td></td>
<td>Visitor perception/satisfaction indicators</td>
</tr>
<tr>
<td></td>
<td>Tourism governance indicators</td>
</tr>
</tbody>
</table>

The accounts described in the SF-MST are based on the existing accounting standards the TSA:RMF and the SEEA and adopting relevant accounting principles from the SNA as appropriate. The relevant accounting principles concerning, for example, the definition of economic territory, time of recording, and monetary valuation, are not summarized here. Compilers are encouraged to read the relevant sections of the accounting standards just listed.

As well, relevant chapters of the SF-MST discuss those situations where the application of accounting principles may raise specific concerns or challenges. Particular issues concern (i) the definition of household units in relation to visitors, (ii) the definition of economic units in relation to tourism businesses and (ii) aligning concepts of economic territory with the requirements for the development of sub-national and local level statistics.

### 1.3.6 Combined presentations and indicators

The SF-MST incorporates combined presentations to support the communication of information on sustainable tourism and to underpin the derivation of indicators. Combined presentations provide a means to bring together a range of information from different sources. They thus present a summary of key measures and also provide a basis for the derivation of indicators. In this context, the underlying base accounts and tables provide the means to ensure that summary data and indicators are based on coherently and consistently compiled data for any given topic, for example, environmental flows of water or energy.
Chapter 6 presents examples of combined presentations that may be used to support the communication of data from the SF-MST accounts. They may also serve a role in showcasing the key variables that are contained within the SF-MST. Chapter 6 also discusses the links between accounts and indicators, with a discussion of potential indicators for assessing progress towards the sustainability of tourism, including with respect to the United Nations’ Sustainable Development Goals.

1.4 Implementation and application of the SF-MST

1.4.1 Implementation of the SF-MST

It is expected that in the implementation of the SF-MST, countries will adopt a flexible and modular approach, ultimately working towards the compilation of a core set of data for assessing the sustainability of tourism that can be used for international comparison. Such an approach means that not all countries will implement all possible parts of the SF-MST at the same time or in the same order and may compile statistics at different levels of detail. Note that the compilation of statistics following the SF-MST is not mandatory.

The selection of which components of the SF-MST should be the focus of measurement should be driven from two perspectives. First, from the perspective of users of information where the question of relevance should be paramount. It is likely that, in any given tourism context, there will be particular topics of concern, for example on water use or employment, which mean initial implementation is focused on the sections of SF-MST that are most relevant to supporting decision making on those topics.

Second, from the perspective of data providers, the question of feasibility will be a fundamental question. Thus, initial implementation is likely to focus on those areas where data are most readily available and are of suitable quality.

The SF-MST is designed to be able to be implemented in a progressive and modular manner such that over time a more complete picture can be painted. Along the way, focus can be placed on compiling and disseminating those statistics that are considered most relevant and feasible. Indeed, one of the key benefits of developing the SF-MST with its broad scope is that it provides a platform for ongoing discussion between data users (i.e. tourism policy) and data providers as to what aspects of tourism should be the areas of most focus.

There are a range of considerations in implementation that must be highlighted.

First, the breadth and detail of the SF-MST will likely raise significant concerns among data providers as to the potential to identify relevant data sets and to maintain a time series of accounts. It is therefore recommended that initial work on the compilation of SF-MST accounts focus on the use of currently available data rather than considering the development of new data sources.

At the same time, the SF-MST might provide a suitable rationale for the collection of new data or the improvement of existing data sources. Thus the potential to inform a broader, sustainability focused narrative around tourism activity may be used to encourage the development of new data sources (e.g. mobile phone data) and data integration platforms such as a national spatial data infrastructure (NSDI).

Second, it should be expected that there will be a considerable lack of coherence among the data sets being used as inputs to the SF-MST accounts, especially spatially. This is the reality that must be confronted in accounting and is analogous to the need to confront measures of the supply and demand for tourism products in the compilation of TSA. The strength of
accounting frameworks is that they provide the conceptual basis for this confrontation process such that users of the information can be assured in using a set of data that conveys consistent stories.

Third, for those not familiar with the compilation of accounts, the requirements of the SF-MST will seem alien. In practice, the compilation of accounts as required for SF-MST requires the same skills sets as for the compilation of tourism satellite accounts, national accounts and similar accounts and experts from these areas will be able to provide useful support and advice. In addition, it is expected that following the finalization of the SF-MST, specific guidance will be drafted for compilers, potentially building on the guidance being developed for the compilation of TSA.

Fourth, in the compilation of SF-MST accounts, every effort should be made to link to existing programs of work on the measurement of the sustainability of tourism. Particular examples will be work on the development of sustainable tourism indicator sets (incl. SDGs), work on the downscaling of data to sub-national levels, and analysis of specific tourism sectors or products for example using value chain analysis. All of this work will provide insights that can be collated to support the compilation of accounts and the subsequent derivation of indicators.

Fifth, implementation of the SF-MST does not imply that every economic, environmental and social variable needs to be measured at all scales, from local to national level. Further, the choice of scale at which the SF-MST is applied might vary depending on the topic of interest and the way in which the data may be used in decision making.

Sixth, in general the approach to compilation implicit in the SF-MST is that data on tourism for any specific theme (e.g. tourism expenditure, employment, water use, etc.) reflects a sub-set of information on that theme – i.e. there is also non-tourism data on that theme. This is, for example, implicit in the compilation of accounts based on the SNA and the SEEA where the accounts of the SF-MST reflect a focus on tourism activities within a broader, economy-wide, account. In fact, it is also possible for the accounts of the SF-MST to be compiled from a tourism-only perspective and while this will mean that some forms of analysis are not possible, it will allow for the organization of much data to support assessing the sustainability of tourism.

Overall, the SF-MST is capable of organizing data that can be used in different sustainable tourism indicator sets, thus allowing for different stakeholder groups at different spatial scales to establish their own monitoring systems while ensuring the potential to compare and exchange experiences with others. Further, subject to data availability, the data organized using the SF-MST can support a wide range of analysis, for example extended economic analysis, and provide varying levels of detail to support different policy requirements.

1.4.2 The role of national statistical offices in implementation

The implementation of SF-MST will require co-ordination of a range of agencies including national tourism administrations, national statistical offices, technical agencies with environmental information, policy agencies, academia and researchers, and the private sector. Indeed, it is important to recognise that there will not be a single data provider. A key task of the leading organization/s will therefore be the co-ordination of the various participants and there are a range of possible institutional arrangements that might be used.

Given the statistical nature of the SF-MST, there will be an important role in implementation to be played by national statistical offices (NSO). The following areas of NSO expertise are
noted:

1. As organisations that work with large and various datasets, NSO are well placed to contribute their expertise in the collection and organisation of data from a range of different sources, based on own surveys or administrative data sources.

2. A core part of the role of NSO is the establishment and maintenance of relevant definitions of concepts and classifications aligned with international standards. The SF-MST incorporates a range of such concepts and classifications and the ongoing involvement of NSO in this area of work will be valuable.

3. Beyond the organisation of information, NSO have capabilities to integrate data from various sources to build coherent pictures of relevant concepts. Most commonly, NSO focus on providing coherent pictures in relation to socio-economic information and this capability is increasingly extending to include environmental information. Given the multi-disciplinary nature of SF-MST, data integration is an important requirement.

4. NSO work within broad national and international data quality frameworks that enable the assessment and accreditation of various information sources and the associated methodologies in a consistent and complete manner.

5. NSO have mainly a national coverage, although the focus of the SF-MST is on the provision of information that supports integrated measurement at both national and sub-national scales. Creating national economic, social and environmental pictures is a relatively unique role undertaken by NSO and incorporates an implicit understanding of scaling data. SF-MST implementation would benefit substantially from consideration of how standard statistical techniques used for official statistics may be applied at different scales, in particular in the context of geo-spatial statistics and the development of national spatial data infrastructure (NSDI).

6. NSO can present an authoritative voice by virtue of the application of standard measurement approaches, data quality frameworks and their relatively unique role within government, including in many countries, leadership of the National Statistical System or supranational systems (European Statistical System; ESS). Further, their legal mandate may often facilitate access to data sources that are unavailable to others.

7. A large number of NSO are involved in the compilation of national accounts and related outputs including TSA and SEEA accounts with the respective knowledge and expertise. The application of national accounting expertise will be important in the implementation of the SF-MST particularly in the context of efforts to understand the most appropriate ways in which physical and monetary measures on the various aspects of sustainable tourism can be integrated with information from the standard national accounts.

All of these factors suggest that there is a role for NSO in the implementation of the SF-MST. In practice, the actual role that an individual NSO plays will vary from country to country and is likely to depend on the scope of its traditional activities. For example, some NSO have strong traditions in working with tourism, environmental and geo-spatial data, while others have a history of statistical development and research. NSO with these types of experience may be able to play leading roles in the implementation of SF-MST. Those NSO without this experience may still play an important role and government agencies leading tourism research, such as national tourism administrations, are encouraged to utilise the expertise of NSO to the extent possible.
1.4.3 Application of the SF-MST

Most commonly, statistical frameworks organize data that are used to support the preparation of two types of outputs that in turn support policy and analysis. These two outputs are:

i. **indicators** of the state and trends in sustainable tourism

ii. **analytical models** that use statistically based data to estimate likely outcomes in the future or in alternative scenarios, e.g. under alternative policy arrangements.

Indicators are particularly important in providing clear signals concerning the effects of current policy decisions and choices – for example through monitoring the growth in visitor numbers, the trends in visitor expenditure, the patterns of water use and the changes in tourism employment. Regular and reliable information on these types of indicators is best provided by a statistical framework since it ensures consistency in definition of indicators over time (including in the choice of measurement units), the coherence between different indicators and the ability to compare indicators among destinations, regions and countries. For example, if each destination defined tourism industries and employment in a different way, then there would be no means to be confident that trends monitored in one destination could be sensibly compared to trends in other destinations.

Statistics to support analytical modeling of economic, environmental and social phenomena is the second important output supported by data from statistical frameworks. Discussion of many policy questions cannot be supported simply through the use of indicators. Instead, data relating to a number of different areas must be brought together to underpin analysis. Examples include analyzing the relationship between tourism demand and employment, assessing visitor numbers and water use, and comparing the location of tourism establishments and changes in condition of local waterways. In each of these cases, ensuring that the data from the different areas are compatibly defined helps ensures the relevance and accuracy of the analysis.

1.5 Structure of the SF-MST document

<<To be finalized following further discussion on the coverage and structure of the draft SF-MST>>

Chapter 1 provides an explanation of the rationale for the development of a statistical framework for measuring the sustainability of tourism, an overview of the SF-MST and a summary on implementation and potential applications. It is intended to provide a general entry point for compilers since there will be a wide variety of experts involved in the development of the SF-MST, many of whom are not official statisticians. Chapter 1 should provide a common understanding and reference point for the implementation and application of the framework.

Chapters 2, 3 and 4 describe the relevant concepts, definitions, measurement boundaries, accounts and measurement issues for the economic, environmental and social dimensions of tourism. Collectively, these chapter provide the core of the statistical framework in terms of determining the potential areas of measurement and describing the various stocks and flows that are the focus in assessing sustainability. The majority of the descriptions in these chapters are applications of existing statistical standards and guidance. It is not intended to
repeat all of the relevant material but rather to explain how these various existing materials can be applied to the challenge of measuring the sustainability of tourism.

Chapter 5 describes a distinctive but fundamental feature of the SF-MST, the need for statistics at multiple spatial scales – from destination and local levels to national and global levels. The discussion of spatial scale provides the entry point for a discussion on measuring sustainability since location provides the common basis for the joint assessment of economic, environmental and social factors.

Chapter 6 introduces the ways in which the data compiled in the SF-MST may be presented in combined presentations, used to derive indicators of sustainability, including the context of the United Nations Sustainable Development Goals, and applied in analytical models. The intent is to provide an indication of the potential applications of the SF-MST and the content does not represent a set of mandatory reporting requirements for countries.
2 Accounting for the economic dimension

Notes to Chapter 2: This chapter will describe the ways in which the key existing statistical frameworks related to tourism – the IRTS and the TSA:RMF - can be applied and adapted to support measuring the sustainability of tourism. The chapter provides a short overview of the key aspects of these two statistical frameworks before a discussion on specific aspects of these frameworks that are of most relevance for tourism sustainability. The measurement of employment and human capital related aspects is also included in this chapter, building on the ongoing advances in this area by UNWTO and ILO. The connections of employment to the social dimension, e.g. in terms of decent work, are discussed in Chapter 4. Finally, the chapter will provide a discussion on the measurement of the economic dimension at a sub-national level.

In this draft, the focus has been limited to a description of the key aspects of measuring economic activity. Future drafts will incorporate material to expand the introduction to tourism statistics, to cover the employment and human capital aspects based on discussions among members of a special sub-group, and to discuss sub-national measurement.

Since the material in this section will be drawn from established statistical sources it is not envisaged that substantive issues for discussion will emerge in the finalization of the SF-MST for this dimension. At the same time, while the conceptual basis for measurement of the economic dimension is well founded, there remain practical challenges in implementation for these areas of tourism statistics that will need to be the focus of capacity building and related work within the MST project. Of particular relevance will be making the connection to the development of the compilation guidance on TSA.

2.1 Introduction
<< To be drafted>>

2.2 Key aspects of tourism statistics and the TSA framework

2.2.1 Tourism statistics
<< This section to summarise key aspects of tourism statistics as articulated in the IRTS. The aim is to provide a basis for discussion of other dimensions of sustainable tourism by defining key terms and concepts.>>

Topics to be covered include:

- Visitors and the usual environment
- Visitor movements – inbound, outbound, domestic – purpose
- Visitor consumption
2.2.2 The TSA framework

The TSA framework is described in the TSA:RMF. It is designed for the measurement of tourism activity and its economic contribution in a manner consistent with the measurement of value added and gross domestic product (GDP) from the SNA. 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 (TSA:RMF Tables 5 and 6)
- Tourism expenditure (inbound, outbound, domestic) (TSA:RMF Tables 1 to 4)
- Employment (TSA:RMF Table 7)
- Gross fixed capital formation (TSA:RMF Table 8)

In sum, the TSA framework provides an agreed basis for defining the extent and structure of tourism activity.

Because tourism activity is defined from a demand perspective; i.e. it is the value added arising due to the economic activity people outside of their usual environment (visitors), it cannot be observed through a focus only on the standard industry based views of economic activity. For example, a measure of the value-added of restaurants cannot be solely attributed to tourism. The TSA provides the framework to identify the tourism component of economic activity in a standardized way.

Key aspects of the TSA are:

- The definition and scope of tourism expenditure and consumption
- The definition and classification of tourism products, tourism characteristic activities and tourism industries
- The definition of tourism direct gross value added, tourism direct gross domestic product, tourism employment and gross fixed capital formation of tourism industries

The TSA:RMF describes all of the relevant accounting aspects of these aspects and presents standard tables and aggregates. The TSA:RMF is aligned with the IRTS and uses the definitions and classifications of visitors to ensure that the collection of tourism statistics, such as those on visitor movements and tourism expenditure, can be utilized directly in the compilation of TSA.

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.

The majority of visitor expenditure is on goods and services produced by tourism characteristic activities, also referred to as tourism industries and hence there is a particular focus in the TSA accounts on understanding the production, income, employment, investment and value added of these activities.

Box 3 presents the top level categories for tourism products and tourism industries. There is clearly a close link between the descriptions since an activity is defined in relation to a primary product. However, in practice, a single tourism establishment may produce a range
of products even if it is classified to its main or primary product. For example, many hotels will be categorized to the activity “Accommodation for visitors” but will produce a range of products including accommodation services and food and beverage serving services.

<table>
<thead>
<tr>
<th>Box 3. Categories of tourism characteristic consumption products and activities (tourism industries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption products</td>
</tr>
<tr>
<td>1. Accommodation services for visitors</td>
</tr>
<tr>
<td>2. Food and beverage serving services</td>
</tr>
<tr>
<td>3. Railway passenger transport services</td>
</tr>
<tr>
<td>4. Road passenger transport services</td>
</tr>
<tr>
<td>5. Water passenger transport services</td>
</tr>
<tr>
<td>6. Air passenger transport services</td>
</tr>
<tr>
<td>7. Transport equipment rental services</td>
</tr>
<tr>
<td>8. Travel agencies and other reservation services</td>
</tr>
<tr>
<td>9. Cultural services</td>
</tr>
<tr>
<td>10. Sports and recreational services</td>
</tr>
<tr>
<td>12. Country-specific tourism characteristic services</td>
</tr>
</tbody>
</table>


2.3 Measuring economic activity of tourism

2.3.1 Accounting for tourism activity at aggregate level

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 recognized in the development of indicators for the measurement of progress towards the UN Sustainable Development Goals (SDGs), where indicators relating to Tourism GDP and employment in tourism, both derived from the TSA, are being developed in relation to Targets 8.9 and 14.713.

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.

13 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.
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 human resources\(^{14}\), cruise ships, eco-tourism, meetings industries (sometimes referred to as MICE\(^{15}\)), etc. Data can also be organized to highlight macro-economic indicators of tourism activity such as tourism expenditure per visitor and foreign exchange earnings. 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.

### 2.3.2 Accounting for characteristics of tourism industries

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 establishments in the economy and classifies them to standard industry classes.

By using basic information provided by business registers, for those establishments classified to industries corresponding to tourism characteristic activities it should be possible to assess the structure of tourism by size of establishment (e.g. in terms of turnover or employment)\(^{16}\), 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 noted that the development of a structured approach to information about tourism establishments can support the organization of data proposed in many existing sets of indicators for sustainable tourism. By way of example, the UNWTO Guidebook (2004) includes a range of indicators that are, in effect, characteristics of tourism establishments: for example, indicators on whether the businesses 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.

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\(^{14}\) This has been developed in Canada where TSA Table 7 has been considerably expanded to include, for example tourism occupations. See [http://cthrc.ca/en/labour_market_information/human_resource_module](http://cthrc.ca/en/labour_market_information/human_resource_module)

\(^{15}\) Meetings, incentives, conventions, exhibitions.

\(^{16}\) 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](http://statistics.unwto.org/content/compendium-tourism-statistics)
2.3.3 Accounting for tourism related infrastructure and investment

Another key aspect in assessing the sustainability of tourism activity concerns the capacity and condition of tourism related 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 the sustainability of 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 and building quality indicators (e.g. building age, capacity to withstand natural disasters). More generally, information on the location of infrastructure is likely to be important in supporting planning discussions and understanding the dynamics of visitor movements.

While some parts of tourism infrastructure will be primarily used for tourism purposes, other parts will be used for non-tourism purposes. For example, airports will be used for non-passenger flights and roads will be used by local traffic. It is not recommended that a statistical allocation of infrastructure between tourism and non-tourism use be undertaken. However, where there is a significant proportion of non-tourism use, it is recommended that estimates of tourism related infrastructure be accompanied by information on the estimated use of the infrastructure for tourism and non-tourism purposes. Particular focus might be placed on tracking changes in the pattern of use over time.

Overall, information on tourism related infrastructure would support a discussion on the requirements for investment in infrastructure and would also likely be of use in risk assessments concerning natural disasters and longer-term impacts of climate change.

2.3.4 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 for SF-MST purposes 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. Such extensions are likely to be part of the broader TSA research and development agenda.

2.3.5 Measuring the sharing economy

<< This section to describe the conceptual aspects of accounting for the emerging sharing economy as an important phenomenon in tourism statistics. >>

Comment [PL1]: There might be documents available from Eurostat, since they are dealing with the sharing economy in general, and tourism in particular, contact person: Christophe Demunter (Christophe.DEMUNTER@ec.europa.eu).
2.3.6 Extending the TSA to record environmental transactions and eco-tourism operations

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.

Another related extension would be to define appropriate criteria to classify tourism establishments as eco-tourism operations and then to separately identify the activity of these establishments within the broader set of tourism establishments.

In broad terms, the recording of environmental transactions and the identification of environmental activities is designed to provide information that supports tracking the response of business and government to environmental challenges. By developing these data for tourism industries, indicators could be developed that show the response of tourism industries to environmental challenges both in absolute terms and relative to other sectors.

2.4 Measuring the employment aspects of tourism

<<This section to be drafted building on material from the IRTS and TSA:RMF and also recent work by ILO related to the measurement of tourism employment and jobs. A discussion on the social aspects of employment, e.g. decent work, will be included in Chapter 4. >>

Topics to be incorporated:

- Employment in tourism: employees and jobs, resident and non-resident workers
- Compensation and income
- Accounting for the human capital aspects of tourism
  - Demographic information (age, gender, etc)
  - Skills and training
- Green jobs in tourism

2.5 Accounting for the economic dimension at sub-national level

<<This section to describe the application of the principles of sub-national measurement described in Chapter 3 to the measurement of economic and employment aspects of tourism described above. Particular note will be made here about the development of regional/sub-national TSA, for example those in Spain and Canada >>
3 Accounting for the environmental dimension

Notes to Chapter 3: This chapter is centred on discussion of the ways in which the statistical standards and principles for accounting for the environment, the SEEA, can be applied and adapted to measuring the sustainability of tourism. The chapter provides an introduction to the SEEA highlighting the key features of environmental-economic accounting. It then describes measurement in the following areas:

- Accounting for environmental flows for tourism industries
  - Water
  - Energy
  - GHG emissions
  - Solid waste
- Accounting for tourism related environmental assets and their use
  - Tourism land accounts, including protected areas and national parks
  - Accounting for tourism related ecosystems and biodiversity
  - Accounting for tourism related natural resources including stocks of water resources

The material to develop this chapter is well established as developing the environment-economy linkage has been a key focus of the MST project to date. There are remaining issues requiring discussion, especially in the area of accounting for the consumption perspective of environmental flows, but clear advances in these discussions are taking place and there is an active program of testing and pilot studies underway.

An important output of MST has been the development of a Technical Note Linking SEEA and TSA which has been prepared under the joint auspices of the UNWTO Committee on Tourism Statistics and TSA and the UN Committee of Experts on Environmental-Economic Accounting. The content of that Technical Note provides important material for this chapter.

3.1 Introduction
<<To be drafted>>

3.2 Key aspects of the SEEA framework

The SEEA framework has been developed since the early 1990s to provide a means by which environmental information can be integrated with the standard economic data provided in the national accounts. At the heart of the SEEA approach is the desire to convey a more complete picture of economic activity through the integration of environmental data.
The SEEA can be separated into four broad types of accounting:

- **Accounting for environmental flows** in physical terms; into, within and from the economy. This includes accounting for flows of water, energy, air emissions, solid waste and emissions to water; and can be extended to account for individual elements and substances such as carbon and nitrogen.

- **Accounting for natural resources** in terms of stocks and changes in stocks (e.g. discoveries of resources, depletion). This includes accounting for stocks of mineral and energy resources, timber, fish, water and soil.

- **Accounting for environmental transactions** that are included in the SNA but not specifically identified as “environmental”. This includes accounting for environmental protection and resource management expenditure, environmental taxes and subsidies and the supply and use of environmental goods and services.

- **Accounting for land and ecosystems**. In this type of accounting the focus is on understanding the changing composition of the area of a country in terms of land use and land cover and the quality of the land in terms of the condition of its ecosystems. Accounting for ecosystem also involves the measurement of ecosystem services and evaluating the capacity of ecosystem to continue to generate market and non-market ecosystem services.

Accounting within the SEEA framework can be undertaken in physical and monetary terms. As a result, the focus of the SEEA is on the alignment of measurement boundaries such that environmental data can be directly and meaningfully related to associated economic data, for example through the use of consistent definition and classification of economic units.

### 3.3 Accounts for environmental flows for tourism industries

#### 3.3.1 Introduction

At this stage in the development of the SF-MST, an initial set of four accounts for environmental flows are described focused on linking measurement of environmental flows following the SEEA with tourism industries as accounted for in the TSA. The four accounts cover flows of:

- Water, including flows of wastewater
- energy
- greenhouse gas (GHG) emissions
- solid waste.

The level of detail and industry disaggregation of these four accounts is relatively uniform with a clear focus on tourism industries. In addition, specific industries relevant to each account are included, such as the water collection, treatments and supply industry and the sewerage industry in the case of the water account.

The accounts described here are presented in terms of compilation for annual frequencies and at national level. While this is a suitable basis for description of the accounts, for sustainable tourism both sub-national and sub-annual compilation of accounts is likely to be
relevant. In general, the same conceptual considerations will apply, and there may be additional data and compilation issues to take into account.

It is noted that a focus on annual and national level compilation will likely suit the needs for national and international policy and reporting (for example, for the SDG indicators). For sustainable tourism management and analysis, this level of detail will usually not be sufficient. Nonetheless, the framework described here will provide a base for the coordination of information at finer levels of detail and this will, in turn, support and more integrated understanding of tourism activity. 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.

All of the environmental flow accounts described here are compiled from a production perspective, i.e. by considering for each tourism industry the relevant flows of water, energy, GHG emissions and solid waste. This is distinct from starting the analysis from the set of products purchased by visitors which will embody these flows in their production. The relationship between the production and the consumption perspectives is considered further later in this chapter.

While having a specific focus on tourism industries, the accounts encompass an economy wide view such that the various environmental flows for tourism can be compared to economy wide aggregates. It is important to recognize however, that for any given industry, including tourism industries, not all of the output is purchased by visitors. In which case, when viewed from a production perspective, not all environmental flows for the tourism industries should be attributed to tourism. For example, only a part of the water use by the restaurant industry should be attributed to tourism - its tourism share. This same principle also applies in the case of non-tourism industries since some of their output and associated environmental flows will be attributable to tourism. The estimation of tourism shares is considered further later in this chapter.

### 3.3.2 Accounts for water flows for tourism industries

The first account is a physical supply and use table for flows of water. It contains information on the supply and use of water and provides an overview of water flows from the environment into tourism and other industries, the distribution and use of this water and the generation and treatment of wastewater. It is likely that, in practice, only relatively few cells in the table will be of significance and these should form the focus of initial development. These cells are highlighted in the table below.

Physical supply and use tables for water can be compiled at various levels of detail, depending on the required policy and analytical focus and data availability. Of particular interest may be the seasonal patterns in water use since in specific locations there will be peaks in the demand for water that may not correspond to the patterns of water supply, e.g. across dry and rainy seasons. Assessment of seasonal patterns might be undertaken by collating data on selected series rather than compiling a full water account on a sub-annual frequency.

Consistent with the advice in the SEEA Central Framework, it would be preferable for the tables to be compiled for individual catchments that are of most relevance to tourism activity since the pressures on water supply will vary by location. It is noted that the composition of water supply will also vary by location with different combinations of surface water, groundwater and desalinated water being used. Although the table below does not
distinguish between these different sources of water, additional rows can be incorporated
to record this level of detail.

The breakdown of economic activities identified in the tourism industries water flow
account distinguishes the main tourism industries and the main industries associated with
water supply and use. Recognizing that in any given industry not all water flows will be
attributable to tourism, the distinction between tourism and non-tourism flows should be
made following the methodological advice discussed below.

In both the supply table and the use table, the rows are grouped into five sections, which
each capture different aspects of water flows. For the purposes of describing the application
to tourism, the full set of entries has been reduced to provide a focus on those entries
expected to be of most relevance to the analysis of water flows for tourism industries.
Ideally, the accounting for these flows would be undertaken as part of an economy wide
accounting for water and the structure described supports this approach.

Comment [PL2]: ...by tourism
ratios/share as indicated in TSA-Table 6 (see TSA-RMF 2008, para 4.47-
4.61)!!
Table 3.1: Tourism industries water flow account (cubic metres)

<table>
<thead>
<tr>
<th>Physical supply and use table for water</th>
<th>(Cubic metres of water)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical supply table for water</td>
<td></td>
</tr>
<tr>
<td>Abstraction of water; Production of water; Generation of return flows</td>
<td></td>
</tr>
<tr>
<td>Tourism Industries</td>
<td>Water collection, treatment and supply</td>
</tr>
<tr>
<td>Accommodation for visitors</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Food &amp; beverage serving</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Passenger transport</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Travel agencies &amp; reservation services</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Other tourism industries</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Total tourism industries</td>
<td>Slovenia</td>
</tr>
</tbody>
</table>

1. Sources of abstracted water
   Total supply abstracted water

2. Water
   Distribution of abstracted water
   Over-use of abstracted water

3. Wastewater and re-used water
   Own treatment of wastewater
   Re-used water produced (for distribution)
   Total Wastewater and Re-used water

4. Return flows of water
   Total return flows

5. Evaporation of abstracted water, transpiration and water incorporated into products
   Total

TOTAL SUPPLY

NB: Dark cells are null by definition; striped cells reflect those of most likely importance
<table>
<thead>
<tr>
<th>Physical use table for water</th>
<th>Abstraction of water; Intermediate consumption; Return flows</th>
<th>Flows to the Rest of the world</th>
<th>Flows to the Environment</th>
<th>Total use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Tourism industries</strong></td>
<td>Accumulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accommodation for visitors</td>
<td>Food &amp; beverage serving</td>
<td>Passenger transport</td>
<td>Travel agencies &amp; reservation services</td>
</tr>
<tr>
<td></td>
<td>Tourism</td>
<td>Total</td>
<td>Tourism</td>
<td>Total</td>
</tr>
<tr>
<td>1. Sources of abstracted water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked water resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other water sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total use abstracted water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Water use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of distributed water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own-use of abstracted water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Water use and Re-used water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Wastewater and re-used water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wastewater and Re-used water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Return flows of water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Return flows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Evaporation of abstracted water, transpiration and water incorporated into products</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL USE**

NB: Dark cells are null by definition; striped cells reflect those of most likely importance
3.3.3 Accounts for energy flows for tourism industries

The second account is a physical supply and use table for flows of energy. It contains information on the supply and use of energy by type of energy product including energy from renewable and non-renewable sources. It is likely that, in practice, only relatively few cells in the table will be of significance and these should form the focus of initial development. These cells are highlighted in the table below.

Physical supply and use tables for energy can be compiled at various levels of detail, depending on the required policy and analytical focus and data availability. For example, where there may be limitations in the availability of energy from specific sources, understanding the seasonal patterns in energy use may be of interest. Assessment of seasonal patterns might be undertaken by collating data on selected series rather than compiling a full energy account on a sub-annual frequency.

Depending on data availability, it is likely to be relevant to include estimates for the generation of energy on own-account, for example through the installation of solar panels. Changes in the demand for energy will be understated if such own-account production is excluded.

The breakdown of economic activities identified in the tourism industries energy flow account distinguishes the main tourism industries. All other industries are grouped in a single column and hence for additional breakdowns and comparisons, an economy wide energy flow account will need to be considered. Recognizing that in any given industry not all energy flows will be attributable to tourism the distinction between tourism and non-tourism flows should be made following the methodological advice discussed below.

In both the supply table and the use table, the rows are grouped into four sections, which each capture different aspects of energy flows. For the purposes of describing the application to tourism, the full set of entries has been reduced to provide a focus on those entries expected to be of most relevance to the analysis of energy flows for tourism industries. Ideally, the accounting for these flows would be undertaken as part of an economy wide accounting for energy and the structure described supports this approach.

A useful extension is to distinguish the use of energy products between energy from renewable and non-renewable sources.
<table>
<thead>
<tr>
<th>Table 3.2: Tourism industries energy flow account (joules$^{17}$)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Physical supply table for energy</th>
<th>Tourism</th>
<th>Industry</th>
<th>Households</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production energy products &amp; Generation of residuals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accommodation for visitors</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food &amp; beverage serving</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger transport</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel agencies &amp; reservation services</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other tourism industries</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total tourism industries</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity and gas supply</td>
<td>Tourism</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Energy from natural inputs
   Natural resource inputs
   Inputs of energy from renewable sources
   Other natural inputs

2. Energy products
   Total production of energy products

3. Energy residuals
   Total energy residuals

4. Other residual flows
   Residuals from end-use for non-energy purposes
   Energy from solid waste

TOTAL SUPPLY

NB: Dark cells are null by definition; striped cells reflect those of most likely importance

$^{17}$ According to the International Recommendations for Energy Statistics (IRES), energy statistics are to be compiled by converting physical measures of mass and volume such as tonnes, litres and cubic metres into a common unit representing energy content in net calorific terms. Joule is the common unit generally used for expressing energy flows.
NB: Dark cells are null by definition; striped cells reflect those of most likely importance
### 3.3.4 Accounts for GHG emissions for tourism industries

The third core account is a physical supply and use table for flows of GHG emissions. It contains information on the generation of GHG emissions by tourism industries by type of GHG emissions and is adapted from the air emissions account in the SEEA Central Framework (Table 3.7). Key cells for the compilation of this account are highlighted in red and focus on release of carbon dioxide emissions by tourism industries.

In general, the generation of GHG emissions will be “used”/received by the atmosphere directly. Of particular interest will be the GHG emissions associated with transport. In this regard the method for attributing emissions to individual countries, particularly in the case of air and water transport is of direct interest. This is discussed in more detail below.

The breakdown of economic activities identified in the tourism industries GHG emissions account distinguishes the main tourism industries. Recognizing that in any given industry not all GHG emissions will be attributable to tourism, the distinction between tourism and non-tourism flows should be made following the methodological advice discussed below.

Depending on the availability of data, an alternative breakdown of GHG emissions would involve identifying the source of emissions, for example road vehicles, airplanes or accommodation facilities – as distinct from the industries which are responsible for these emissions.

#### Table 3.3: Tourism industries GHG emissions account (tonnes)

<table>
<thead>
<tr>
<th>Type of waste</th>
<th>Accommodation</th>
<th>Food &amp; beverage</th>
<th>Passenger transport</th>
<th>Travel agencies &amp; recreation</th>
<th>Other tourism industries</th>
<th>Total industry</th>
<th>Household</th>
<th>Total supply of emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tourism</td>
<td>Total</td>
<td>Tourism</td>
<td>Total</td>
<td>Tourism</td>
<td>Total</td>
<td>Tourism</td>
<td>Total</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen oxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrous oxides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total CO2 equivalent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NB: Dark cells are null by definition; striped cells reflect those of most likely importance

### 3.3.5 Accounts for solid waste for tourism industries

The fourth core account is a physical supply and use table for flows of solid waste. It contains information on the generation, collection and disposal of solid waste by type of waste. It is likely that, in practice, only a few cells in the table will be of significance and these should form the focus of initial development. These cells are highlighted in red.

In both the supply table and the use table, the rows are grouped into two sections, corresponding to the fact that while the materials at issue appear in the economy as “residuals”, they may also be purchased. These sections follow the structure of the physical supply and use table for solid waste presented in Table 3.9 Solid waste account in the SEEA Central Framework. The items selected for the categories of solid waste are those deemed
most relevant for tourism industries and for the activities of other industries that meet visitors’ demand.

Physical supply and use tables for solid waste would generally be compiled at a national level and at annual frequency but it may be relevant to compile accounts for specific municipal areas in which tourism is a significant activity and, depending on the capacity for the treatment and disposal of waste, measurement at sub-annual frequencies to monitor peaks in waste generated by tourism activity may be relevant. Such sub-annual data may be used to complement accounting information rather than implying the compilation of sub-annual accounts.

The breakdown of economic activities identified in the tourism industries solid waste flow account distinguishes the main tourism characteristic activities and the main industries associated with waste collection and disposal. The categories of solid waste are described in Annex 1 of the SEEA Central Framework. As yet there is no standardized classification of solid waste but these categories can provide a basis for collection of data and compilation of accounts. It may be of interest to compile estimates of the total quantity of solid waste, irrespective of type.

The focus in table 3.4 is on situations in which the solid waste generated is collected by tourism industries and hence, following the SEEA Central Framework, is deemed to be generated by these industries. There will also be solid waste generated by visitors that is not collected by these industries – for example the collection of solid waste in public parks will include waste generated by visitors. This waste should be recorded in columns for other industries depending on who collects the waste.
Table 3.4: Tourism industries solid waste account (tonnes)

<table>
<thead>
<tr>
<th>Physical supply table for solid waste</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generation of solid waste</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tourism industries</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other industries</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residues</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A. Generation of solid waste residuals</strong></td>
<td></td>
</tr>
<tr>
<td>Metallic waste and other recyclables</td>
<td></td>
</tr>
<tr>
<td>Mixed residential and commercial wastes</td>
<td></td>
</tr>
<tr>
<td>Other wastes</td>
<td></td>
</tr>
<tr>
<td>Total solid waste</td>
<td></td>
</tr>
<tr>
<td><strong>B. Generation of solid waste products</strong></td>
<td></td>
</tr>
<tr>
<td>Total solid waste</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical use table for solid waste</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intermediate consumption; Collection of residuals</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Final consumption</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flows to the rest of the world</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flows to the environment</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total use</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C. Collection and disposal of solid waste residuals</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Landfill</strong></td>
<td></td>
</tr>
<tr>
<td>Incineration</td>
<td></td>
</tr>
<tr>
<td>Recycling and reuse</td>
<td></td>
</tr>
<tr>
<td>Other treatment</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td>Total</td>
</tr>
<tr>
<td>Tourism</td>
<td>Total</td>
</tr>
<tr>
<td>Tourism</td>
<td>Total</td>
</tr>
<tr>
<td><strong>D. Use of solid waste products</strong></td>
<td></td>
</tr>
<tr>
<td>Total solid waste</td>
<td></td>
</tr>
</tbody>
</table>

NB: Dark cells are null by definition; striped cells reflect those of most likely importance

3.3.6 Estimating the tourism share of environmental flows

As noted in the introduction to this section, the available statistical information on environmental flows does not make reference to tourism, though environmental flows related to tourism activity are embedded in the estimates. For example, data on GHG emissions generated by production processes that produce output purchased by visitors (e.g. accommodation or transport services) is not available with specific reference to the tourism share. What is required therefore, are techniques to estimate the proportion of a given environmental flow that is attributable to visitor activity. A number of different techniques were examined by Costantino (2017) and the findings are summarized here.

The paper recognizes that, at least in theory, data on environmental flows related to visitors may be collected directly in cases where tourism and non-tourism businesses are capable of providing information on the different environmental flows as they relate to visitors and non-visitors. While some detailed information may be available in some cases (and should be used if at all possible), the paper concludes that it is unlikely to envisage these data being available on a regular basis for official statistics.

In the absence of directly collected data, three different tourism ratios are described:

- **output ratios** - calculated by dividing an industry’s output sold to visitors by its total output
- **value added ratios** - calculated by dividing an industry’s value added attributable to sales of output to visitors by its total value added
- **intermediate consumption ratios** – calculated by dividing an industry’s intermediate consumption for the production of output sold to visitors by its total intermediate consumption
Each of these could be used to estimate, for each industry, the proportion of an environmental flow (water, energy, GHG emissions, solid waste, etc.) attributable to visitor activity and hence to tourism. In concept, all of these ratios can be derived from a TSA (TSA:RMF Table 6).

By way of example, the tourism share of water use in the restaurant industry may be estimated by multiplying the total water use of that industry by the output ratios of the restaurant industry as defined above.

Some care should be taken in the use of the different tourism ratios for different environmental flows. Output ratios should be used where the magnitude of the environmental flow of interest is directly related to the level of production (e.g. GHG emissions and solid waste) while intermediate consumption ratios are best applied for those environmental flows that are inputs to production (e.g. energy).

Value added ratios can be used when output or intermediate consumption ratios are not available and estimating value added ratios can turn out to be relatively more affordable, but they are not preferred. Their use depends on the extent to which it can be assumed that there is a close relationship between the value added ratio and the ratio concerning output or intermediate consumption. At the same time, where output and intermediate consumption ratios are quite high then it is likely that the value added ratio is also high and then value added ratios may be good proxies for output ratios or intermediate consumption ratios.

The more general assumption in estimating tourism shares is that the production function (mix of outputs and inputs) for an industry is the same for visitors and non-visitors. For example, the amount of water used to make a restaurant meal is invariant between consumers. In concept, this assumption is likely reasonable provided that information is available at a relatively fine level of industry detail. However, in practice it may be difficult to source suitably fine levels of industry detail in which case the appropriateness of the assumption will depend on the extent of differences in the consumption patterns of visitors compared to residents and the mix of products within the industry.

### 3.3.7 Distinguishing the consumption and the production perspectives

<<The following section is to be updated following discussion of the paper prepared by Cesare Costantino on this topic.>>

The discussion in this section has focused on the measurement of environmental flows from the perspective of tourism industries, i.e. a production perspective. The next step is to consider, for the same environmental flows (water, energy, GHG emissions and solid waste), the methods that would be appropriate in estimating the attribution of flows based on visitor activity.

First of all, the investigation should consider the environmental flows associated with tourism activity where households and individuals undertake activity on their own-account. For example, the energy and GHG emissions associated with driving one’s own car on holiday. Also for consideration are the environmental flows associated with visitors staying with friends and relatives. In allocating SEEA estimates to tourism, these environmental flows should be taken into account in addition to those caused by production processes discussed in this section.

Furthermore, in line with SEEA directions concerning possible applications and extensions of economic-environmental accounts, one way to consider the measurement challenge from a consumption perspective is to recognize that 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 along the whole supply chain linked to tourism demand and the outputs that are ultimately consumed by visitors. For example, it would be possible to estimate the quantity of energy embodied in the provision of accommodation services for visitors. The same logic could 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.

Beyond the considerations noted above, more investigation of this topic is required to resolve specific issues. For example, since visitors are by definition outside of their usual environment, there is the dual challenge of both attributing a flow to visitors and also assigning that flow to the residence of the visitors. There is no doubt overlap here with the production perspective but differences in scope do exist.

A conceptual issue lies in appropriately defining the spatial boundaries for consumption. This is especially so since environmental boundaries are open, and visitors travel between countries. The aim here is thus to describe possible methods of presenting a consumption perspective in relation to the environmental flows under investigation. It is quite likely that different approaches are relevant for different flows. Ultimately there should be an alignment of methods here with the delineation of spatial boundaries for destinations but at this stage it should be possible to develop relevant criteria for presenting the consumption perspective without knowing precisely how destinations might be defined.

This discussion provides a brief introduction to the topic and further investigation and discussion of this topic should be undertaken to support compilation activities. It is recommended that initial estimates be undertaken using the production approach since this is generally well aligned with data available through the TSA and SEEA based data sets.

### 3.3.8 Allocating environmental flows associated with transport activity

<<The following section is to be updated following discussion of the paper prepared by Cesare Costantino on this topic.>>

Within the general discussion of the estimation and allocation of environmental flows to tourism activity a particular consideration concerns flows related to transport activity. Because transport businesses operate by moving people and products between locations within and between countries, the allocation of relevant environmental flows to specific countries and destinations is not as straightforward as for other businesses. There are national accounting conventions, in particular the residence principle concerning the allocation of economic units to economic territories, that apply in relation to the treatment of expenditures and revenue by these businesses. Hence, the starting point for measurement from a production perspective in a joint SEEA / TSA approach is to consider that these conventions apply in the case of environmental flows.
However, a question requiring further consideration is whether there are any additional considerations in relation to transport that emerge when considering a consumption perspective on these flows. For example, what is the best way to consider allocation of the GHG emissions from a British Airways plane travelling between Singapore and London and carrying passengers from the United States and Australia. At this stage, no specific answers have been developed and it remains an area requiring further investigation and discussion before more concrete advice can be provided.

3.4 Measuring tourism related environmental assets

3.4.1 General features of measuring environmental assets

Following the SEEA Central Framework (UN et al, 2014a), environmental assets are defined broadly as

“the naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity.” (para 2.17).

There are so many different types of environmental assets, ranging from pristine wilderness to areas heavily influenced by people (such as, city parks and beaches), that applying a single definition can be problematic. The intention however, from a measurement perspective, is to consider that the scope of environmental assets is suitably broad ranging.

Given the range of environmental assets, it is not surprising that many perspectives and associated measurement approaches are adopted. Indeed, in the biophysical sciences, it is clear that there are many specialties including hydrology, geology, climatology, and ecology, and specialisations concerning specific types of ecosystems (e.g. marine areas, forests, deserts) and species (insects, mammals, conifers). Given this variety and the associated breadth of methods and areas of focus, it is perhaps not surprising that there has been, to date, relatively little integration of environmental data into standard national statistical operations.

Nonetheless, there is a very substantial quantity of data and expertise about environmental assets. The challenge from an ongoing measurement perspective is to find ways of gathering, standardizing and presenting the information in a manner that (i) can be integrated with economic and social data, (ii) is useful for policy making, and (iii) respects the underlying science. The accounting framework of the SEEA is designed to provide a platform to meet this challenge.

3.4.2 Approaches to accounting for environmental assets

The SEEA describes two approaches to the measurement of environmental assets. The first approach concerns the measurement of individual assets such as minerals, energy resources, timber, fish, soil and water. This approach is described in the SEEA Central Framework. Some of these individual resources will be relevant for tourism, for example, water resources. Relevant details are discussed below.

The second approach is accounting for the extent and condition of land and ecosystem assets as described in the SEEA Experimental Ecosystem Accounting (SEEA EEA) (UN et al., 2014b). In the SEEA, land is a unique and fundamental environmental asset. At one level it can be accounted for as an individual resource by recording changes in the composition of
land use and land cover within a territory over time. In this way indicators of deforestation and urbanization may be derived.

At the same time, land defines the space within which all activity takes place and other assets are situated and it is the spatial aspects of land that need special and distinct consideration. In the context of environmental assets, accounting for land and ecosystems involves separating an overall territory (e.g. country, region) into distinct spatial areas, known as ecosystem assets, each categorized according to different characteristics. Generally, this will relate to different vegetation types and hence, at an aggregate level there will be a mix of ecosystem assets such as forests, wetlands, coastal areas, urban and built-up areas, farmland, savanna, etc. delineated within a territory. The approaches to land and ecosystem accounting in the context of tourism activity are described further below.

3.4.3 Environmental asset accounts

Accounting for all environmental assets follows basically the same logic. The first step is assessing the stock of the particular environmental asset at a point in time (in accounting terms the beginning of the accounting period). This will likely involve some measurement of the physical stock of the asset using different measurement units depending on the asset. Numbers of wildlife and cubic metres of water would be common metrics.

The second step involves measuring changes in the stock of the asset, both additions and reductions, over an accounting period. In some cases, changes may be further classified in terms of reasons for change. Ideally, measurement would be undertaken each year but, for many environmental assets, monitoring over 3-5 year periods might be sufficient to support policy discussion.

The measures of the changes in stock must then be reconciled to measures of the stock at the end of the accounting period (i.e. the first step is repeated at a later point in time). This accounting identity that opening stock + additions – reductions = closing stock is a powerful equation that supports telling coherent stories over time. Table 3.5 shows the basic form of an asset account that reflects this identity.
Table 3.5: Basic form of an asset account

<table>
<thead>
<tr>
<th>Opening stock of environmental assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additions to stock</td>
</tr>
<tr>
<td>Growth in stock</td>
</tr>
<tr>
<td>Discoveries of new stock</td>
</tr>
<tr>
<td>Upward reappraisals</td>
</tr>
<tr>
<td>Reclassifications</td>
</tr>
<tr>
<td><strong>Total additions of stock</strong></td>
</tr>
</tbody>
</table>

| Reductions of stock                   |
| Extractions                           |
| Normal loss of stock                  |
| Catastrophic losses                   |
| Downward reappraisals                 |
| Reclassifications                     |
| **Total reductions in stock**         |

| Revaluation of the stock*             |

| Closing stock of environmental assets |

* Only applicable for asset accounts in monetary terms.

Often gathering the information to measure each of the accounting entries in Table 3.5 is challenging and hence biophysical models may be applied that provide estimates of, for example, additions to the stock of timber resources using information on the size and age of the forest and the primary species. In this sense, the accounting framework provides a means by which a variety of environmental information can be integrated with economic data since the underlying recording principles are the same.

An important feature of the SEEA’s environmental asset accounting is that it can be conducted in both biophysical (quantitative) terms and in monetary terms. In the first instance, the focus is most commonly on recording data in biophysical terms and indeed, in a sustainability context, understanding the actual physical stock is a fundamental requirement. As well, this information is generally the focus of measurement since the biophysical characteristics can be observed and monitored.

The valuation of environmental assets in monetary terms is a challenging area of research and measurement. It is necessary in cases where the information demand is for comparing environmental assets to other assets or for estimating the capital cost of using environmental assets in the generation of income (e.g. estimating depletion adjusted GDP). However, there are a range of methodological challenges and assumption associated with valuation of environmental assets since they are not commonly traded on markets. Issues associated with valuation are not pursued further in this paper and interested readers are invited to consider material in SEEA Central Framework, Chapter 5 and SEEA EEA, Chapters 5 and 6.

3.4.4 Tourism related environmental assets

The mix of environmental assets relevant to assessing the sustainability of tourism will vary from country to country and within countries. There is no apriori limit to the number and type of environmental assets that might be considered environmentally related but, it is appropriate to focus on environmental assets which

i. directly underpin the provision of goods and services to visitors (e.g. land) in the sense that they are owned and/or managed by tourism industries
ii. are locations and their associated features (e.g. significant species – gorillas, pandas, etc) where visitors undertake tourist activity (e.g. national parks, beaches, ski resorts)

iii. are ecosystems that are impacted by tourist activity, for example through excess visitation or the release of pollutants or wastewater.

It is also recommended that while water resources are not generally under the direct ownership or management of tourism industries, since the availability and management of water is of such direct relevance to tourism in many places, then water resources in tourism areas should be considered tourism related environmental assets.

In some cases, it may be of interest to assess stocks and changes in stocks of resources that indirectly support tourism activity (e.g. soil resources that support agricultural production for food, mineral resources used as inputs to the construction of tourism infrastructure) but these indirect links are better analysed separately and the relevant assets are not considered tourism related environmental assets.

In most cases, the services and benefits supplied by environmental assets will be jointly used by visitors and non-visitors. However, the SF-MST does not recommend partitioning tourism related environmental assets – for example by allocating some portion of water resources in a catchment to be tourism water resources. Rather, it is recommended to assess the stocks and change in stocks of the environmental asset as a whole and to record data on the tourism and non-tourism uses. In this way a much clearer sense will emerge of the changing capacity of the environmental asset to supply services and benefits into the future.

The remaining parts of this section examine four specific tourism related environmental assets, namely water resources, wildlife and key species, land and ecosystem assets. For other types of tourism related environmental assets, the accounting principles of the SEEA Central Framework and the SEEA EEA can be applied in a similar manner as described for these four asset types.

### 3.4.5 Accounting for water resources

As highlighted earlier, 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. In addition, it will be necessary to record information on the stock of water and changes in this stock. The appropriate account for this task is the water resources asset account – shown below in Table 3.6. 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 the sustainability of tourism, it would be appropriate to focus only on those catchments where there is a significant connection to tourism activity. The water resources asset account provides information as to the stocks and changes in stock of the overall resource and hence the use of water by tourism activities can be seen in context. As a consequence, there are no specific issues pertaining to tourism that need to be considered in developing an appropriate water resource asset account.
The compilation of water resource asset accounts is described at length in a range of materials. These include:

- SEEA Central Framework
- SEEA Water
- International Recommendations on Water Statistics
- SEEA Technical Note: Water accounting

Commonly, the estimates of stocks and changes in stocks of water will be based on hydrological monitoring and associated models concerning precipitation, evaporation, run-off and other flows. Direct measurement of stocks of water, particularly with respect to surface water is more challenging but is likely to be relevant where abstraction from groundwater is a primary source.

In some situations, for example in island nations, it may be relevant to assess changes in the quality of available water resources as increases in the salinity of groundwater are a known concern and will limit the availability of water, and/or increase the costs of providing water for tourism activity.

A significant issue in some tourism areas will be the seasonality of tourism activity. Where storage capacity is limited, it may be highly relevant to monitor both water use and changes in the stock of water on a monthly basis such that information for monitoring the capacity to meet peak tourism demand is well established. This may be particularly important as weather and climate patterns vary such that rainfall and peak visitor arrivals do not align well.

Table 3.6: Water resources asset account: Tourism catchments (cubic metres)

<table>
<thead>
<tr>
<th>Accounting entries</th>
<th>Type of water resource</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surface water</td>
<td>Groundwater</td>
</tr>
<tr>
<td></td>
<td>Artificial reservoirs</td>
<td>Lakes</td>
</tr>
</tbody>
</table>

Opening stock of water resources

Additions to stock

- Returns
- Precipitation
- Inflows from other territories
- Inflows from other island water resources
- Discoveries of water in aquifers
- Total additions to stock

Reduction in stock

- Abstraction
  - of which: for tourism purposes
- Evaporation and actual evapotranspiration
- Outflows to other territories
- Outflows to the sea
- Outflows to other inland water resources
- Total reductions in stock

Closing stock of water resources
To provide a complete picture with respect to water resources, it will be relevant to compile estimates of water use within tourism activities as presented in Table 3.1. Approaches to the collection of these data and the attribution to visitors are described in the Technical Note linking the SEEA and the TSA.

Focus in the SEEA is on the active use of water that occurs as it is abstracted and distributed to economic units and households. This will include for example, the abstraction of water to fill swimming pools and related water park facilities. Beyond this, tourism activity will also use water resources passively. Examples include surface water (lakes and rivers) and coastal waters being used for recreation and swimming, and water providing the medium for water transport (ferries, cruises, etc.). Passive uses of water are not the focus of accounting in the SEEA however application of the principles of land accounting (see below), in terms of accounting for land use, may be applied to provide information to support management of these areas.

An important issue related to both the active and passive use of water resources is water quality and the associated issue of the treatment of wastewater. The issue of wastewater treatment is covered in the discussion of the supply and use of water in the Technical Note linking the SEEA and the TSA. Water quality is a challenging area of measurement as introduced in the SEEA Water, although in part this challenge lies in providing aggregate measures of water quality at a national or other larger scale. Approaches to the measurement of water quality in specific locations are well established and it is likely of relevance, particularly in coastal tourism destinations, to collect and record water quality information on an ongoing basis. Approaches to recording this information are described in the section below on ecosystem accounting.

3.4.6 Accounting for wildlife and key species

An individual asset for which asset accounts might be developed are accounts for selected species of wild animals, for example, animal species that provide the focus for safari and related activities in national parks and species that are a focus for recreational hunting and fishing.

Recording changes in the stock of such key species over time would support an understanding of the environmental assets supporting tourism activities. Related areas of measurement such as measurement of biodiversity and protected areas are considered under the topic of land and ecosystem accounting (see following sections).

A basic, but potentially useful, asset account would focus on numbers of particular species monitored at regular intervals and entered into an asset account format. This might be extended to show additions (e.g. through natural births and releases from breeding programs) and reductions (e.g. through natural losses, poaching), to provide more detail concerning the nature of the changes over time. Such an account over multiple time periods is shown in Table 3.7 for the Big Five mammals of southern Africa. Further extensions to integrate information on the age and composition of the stock of animals, for example to understand the number of breeding females, could also be made. The same approach can be applied for all species that may support tourism activity (e.g. Californian redwoods, penguins, wild boar, trout, etc.), noting that many possibilities may be considered.
Table 3.7: Stylised asset account for the Big Five mammals of southern Africa (numbers of animals)

<table>
<thead>
<tr>
<th>Accounting entries</th>
<th>Species</th>
<th>Lion</th>
<th>African elephant</th>
<th>Cape buffalo</th>
<th>Leopard</th>
<th>Black rhino</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Natural births</td>
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<td>Breeding programs</td>
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<td>Other additions</td>
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<td>Reductions in stock</td>
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<td>Natural losses</td>
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<td>Poaching</td>
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<td>Other reductions</td>
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<td>Net change in stock</td>
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<td>Closing stock</td>
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Information of this type for key species may well be available to managers of national parks and protected areas or from active research programs. The aim of accounting is to provide a platform for this information to be placed in context alongside information on visitors and tourism activity and hence provide a more complete picture for decision makers. Indeed, the relevance of this type of information has been highlighted in a recent UNWTO briefing paper Towards Measuring the Economic Value of Wildlife Watching Tourism in Africa (UNWTO, 2015).

For wildlife, there will be a direct link between the stock and the condition (quality) of the associated ecosystem, such as a forest, wetland or savanna. As well, it is common for the assessment of the numbers of species to be determined on the basis of the extent of suitable habitat and hence there will be connections to approaches used in ecosystem accounting.

3.4.7 Land accounts for tourism

The use of land for tourism activity and development is often a contentious aspect of ongoing tourism growth. The contention arises where there are limitations in the availability of land to satisfy all potential users and hence choices must be made in terms of how land is used and who is provided with the opportunity to secure the associated benefits.

In this context, land accounts can provide an important information source to support discussion of planning and land allocation decisions. Following the basic structure of the asset account described above, land accounts report the opening and closing stocks (areas) of land classified by different classes of use, cover or ownership. Thus, land accounts provide information that shows the changing composition of land over time. This information can be extended by examining the types of additions and reductions for different land classes during an accounting period.
Another important output that can be directly related to land accounts are maps showing the areas of land classified by use, cover or ownership. Maps are important tools since they are able to convey the actual configuration of an area that is not apparent when looking at a set of accounts in tabular form.

Both land cover and land use accounts are likely to be of interest in measuring sustainable tourism. For a given territory (country, region, destination), accounts for land cover will provide an understanding of the relative size of areas that are covered by, for example, forests, wetlands, rivers, built-up areas, agricultural areas, grasslands, coastal areas and beaches, etc. If converted into maps, this information will clearly identify key environmental areas and ecosystems and their relative significance and configuration. An interesting overlay of this information would be to incorporate information on protected areas and national parks which might be a focus for certain tourism activities. Changes in the size of such areas might be of particular interest.

Accounts for land use will be able to highlight the relative significance of land used by tourism industries such as hotels, restaurants, recreational facilities, transport hubs, etc. When mapped, this will highlight whether there are particular clusters and how these might be changing over time. While such tourism maps might be regularly produced for cities and regions, the advantage of using a SEEA based land accounting framework is that the information on tourism activity is fully integrated with information on other activities in a mutually exclusive and comprehensive manner.

For tourism purposes, the land account structure that is likely to be of most value is an account that shows an integration of land use and land cover classes. This would involve starting from a land cover account with broad classes, as suggested above (forest, grasslands, etc.) and within the class of built-up areas breaking this down further into various tourism industry use of land and non-tourism uses. Further, within the non-urban land cover classes it would be logical to determine the area of land that was most relevant for tourism activities – e.g. beaches. A map of these various classes, produced on a regular basis, would provide substantive input to planning and other tourism related discussions.

An account showing these types of classes is shown in Table 3.8. It represents a melding and adaptation of the interim land use and land cover classifications described in the SEEA Central Framework. The proposed classes are illustrative only and are included to give a sense of the potential structure of a tourism land account. Descriptions of the relevant classes are provided in the SEEA Central Framework, Annex 1.

<<One question is whether additional, tourism specific land use classes should be developed>>
The compilation of land accounts is the focus of much ongoing statistical attention. The SEEA Technical Note on land accounting provides an introduction to this area of work. Generally speaking, the compilation of land accounts will require a close relationship to be established with experts in geo-spatial data, perhaps through a jointly established national spatial data infrastructure, since there should be a relatively direct connection between land accounts (along the lines of Table 3.8) and maps showing the same information.

Land accounts can be compiled at different scales. The key from a SEEA perspective is consistency in the application of classifications across spatial scales such that different land accounts (and associated maps) can be nested using consistently defined boundaries. This type of approach, which will likely require some level of national co-ordination, will directly support the type of cross-jurisdictional interaction and discussion that is considered necessary for progressing sustainable tourism.

**3.4.8  Accounting for tourism related ecosystem assets**

**Introduction**

The final type of environmental asset to consider is ecosystem assets. While ecosystems are not new concepts, the logic of fully incorporating ecosystems into an accounting structure is quite recent. In a statistical context, this was first presented in the SEEA EEA. The approach involves identifying (delineating) separate spatial areas within a country each representing an ecosystem asset. Most commonly, these separate areas are determined on the basis of different vegetation types but other factors can be incorporated. In effect, each spatial area – referred to as an ecosystem asset – is a statistical representation of an ecosystem as understood by an ecologist.

<table>
<thead>
<tr>
<th>Land classes</th>
<th>Accounting entries</th>
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<td></td>
<td>Opening stock</td>
<td>Additions to stock</td>
<td>Reductions in stock</td>
<td>Net change in stock</td>
<td>Closing stock</td>
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<td>Built-up areas/artificial surfaces</td>
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<td>Transport and storage</td>
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<td>Commercial, financial and public services</td>
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<td>Hotel and catering services</td>
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<td>Retail trade</td>
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<td>Other commercial services</td>
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<td>Recreational facilities</td>
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<td>Residential areas</td>
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<td>Cropped [hebaceous, woody, other]</td>
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<td>Grassland</td>
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<td>Tree-covered areas</td>
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<td>Mangroves</td>
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<td>Shrub-covered areas</td>
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<td>Shrubs and other vegetation, aquatic and regularly flooded (incl wetlands)</td>
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<td>Sparserly natural vegetated areas</td>
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<tr>
<td>Terrestrial barren land</td>
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<td>Permanent snow and glaciers</td>
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<td>Inland water bodies</td>
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<tr>
<td>Coastal water bodies and intertidal areas</td>
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<td>Total area</td>
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Ecosystem extent

Consistent with SEEA accounting principles, all ecosystem assets (i.e. discrete spatial areas) within a territory are classified to a type of ecosystem asset in a non-overlapping manner. Each of these ecosystem assets might change in size – extent – over time. One key role of ecosystem accounting is to record these changes in extent, and measure the composition of a territory in terms of its ecosystem types at points in time. In this regard, there are strong connections to the land cover accounts discussed in the previous section.

Ecosystem extent accounts for tourism could be used to record the current composition and changes in composition of tourism areas according to different ecosystem types. For example, the changing composition of ecosystems such as beaches, coastal zones and dunes, mangroves, rivers and estuaries, forests, wetlands and urban areas may be tracked over time. Maps of these changes may also be useful policy tools. The delineating and mapping of ecosystem assets provides the underlying framing for ecosystem accounting.

Ecosystem condition

In addition to measuring the extent of ecosystem assets, ecosystem accounting records changes in the condition of each asset. This is done by considering, for each asset type, a range of characteristics relevant to the assessment of the overall integrity and functioning of the asset. Characteristics may include water flow and quality, species abundance and diversity, vegetation density and cover, soil fertility, etc. The choice of characteristics is ideally determined at the local level by ecologists familiar with the various ecosystem types. The ecosystem accounts provide a structure within which this ecological information can be brought together and tracked over time. The same approach can also be used to monitor the condition of coastal waters and reefs that may be of importance in some tourism areas, for example by recording changes in coral cover.

Ecosystem services

The next stage in ecosystem accounting involves measuring the flows of ecosystem services generated by ecosystem assets. Commonly, ecosystem services are grouped into three broad classes: provisioning services, regulating services and cultural services. Provisioning services relate to the extraction and harvest of materials from the environment including timber, fish and water. These will largely be inputs to primary industries, e.g. agriculture, forestry and fisheries, but there will be cases of relevance for tourism, for example when a hotel or resort abstracts water from the environment.

Regulating services are generally the least recognized and the most taken for granted. These services include the filtering and purification of water and air by ecosystems, the regulation of soil and water flows to minimize the impacts of flooding and the sequestration of carbon, to name just a few. Communities and tourism activities gain directly from these services but usually do not pay for them.

Cultural services concern the opportunities provided by ecosystems to enjoy and learn from nature. They include educational and scientific connections and, most significantly for tourism, cultural and recreational opportunities including wildlife watching, hiking, camping, visits to national parks, swimming and other outdoor recreation, etc.
Application of ecosystem accounting to tourism

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 common destination level focus of sustainable tourism. Thus the application of ecosystem accounting principles and the development of ecosystem accounts should provide information that can be directly used at destination level to progressively build a picture of tourism’s use of and impact on local ecosystems. For example, it would be possible to:

- 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 businesses 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.

Overall, 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 area itself and for associated ecosystem types, for example beaches, national parks, marine areas, etc. Thus, each tourism area, e.g. a region or local destination, would be expected to comprise a combination of different ecosystem types (e.g. a combination of beaches, forest, rivers and built-up areas).

For each ecosystem within a tourism 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 in that tourism area.

The scope of accounting might be extended to include the changing condition of water catchments and associated groundwater systems that underpin the provision of water to support tourism activity. This would complement the water resources asset account described above.

Assessment could also be made of the supply of ecosystem services from the various ecosystems within a given tourism area, including both those services that contribute to tourism activity (e.g. the recreational opportunities from forests) and other services that may be produced at the same time (e.g. carbon sequestration) but where the user of the service is not the visitor. 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.

Understanding the flows of ecosystem services to different users, including visitors, permanent residents of the area and others, can support a broader discussion on the trade-offs that arise if the supply of ecosystem services changes as result of tourism activity and/or development that impacts the quality of ecosystems within a tourism area. Equivalently, in cases where tourism activity or investment enhances the condition of local ecosystems, the ecosystem accounting approach provides a framework for recording the likely positive impacts on flows of ecosystem services both to visitors and to the local community.

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 data to support direct valuation of ecosystem services. There is a rapidly growing body of work in this area with more than 50 countries involved in ecosystem accounting projects or initiatives.18

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 destinations it may be relevant to consider the influence and condition of infrastructure that supports tourism such as walkways, 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 to sustainable tourism at a destination level.

### 3.5 Tourism related environmental transactions

The SEEA Central Framework outlines a range of concepts, definitions and treatments related to identifying environmental transactions within the standard national accounting system. Environmental transactions include expenditures whose purpose is environmental protection or resource management, environmental taxes, environmental subsidies and similar transfers and payments for the use of natural resources. Following the details of the SEEA Central Framework, the SF-MST identifies these types of transactions where they involve tourism industries or visitors. Such information can support an improved understanding of responses to environmental issues from a tourism perspective.

<<This section to be developed further pending discussion at the Working Group>>

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4 Accounting for the social dimension

Notes to Chapter 4: Accounting for the social dimension in the assessment of the sustainability of tourism is the least developed aspect from a statistical perspective but this is not to suggest a lack of importance of this dimension in measurement. Developing this area of measurement is a high priority on the MST research agenda with the intent of taking advantage of the active body of research and measurement practice in these areas, especially in the context of the SDGs.

This chapter will be further developed following discussion at the forthcoming Working Group meeting to which there have been a few contributions concerning measurement of the social dimension.

4.1 Introduction

From a statistical perspective, the standardization and co-ordination of data on social aspects is much lower compared to the economic and environmental dimensions. In short, while there is a relatively common set of themes that are measured concerning social aspects (including health, education, culture, poverty, crime and safety and decent work) and this measurement is undertaken for a range of population groups (including children, the elderly, indigenous peoples, ethnic and religious minorities and people with disabilities), there is not an agreed overarching framework that places all of these aspects of the social dimension in a common context. Consequently, determining the scope of any assessment of the social dimension is a matter of judgement for those involved in a given measurement project. This may be appropriate for each assessment but without an overarching framework the potential to understand what has been excluded from any assessment is removed and there is much more limited potential to compare the state and trends in the social dimension between different assessments.

For the economic and the environmental dimensions, the SF-MST has applied and integrated existing statistical frameworks to support improved measurement of sustainable tourism. For the social dimension, the approach and ambition must be different. With the broad aim of supporting compilers to establish a relevant set of social indicators, this chapter proposes an organization and presentation of social aspects appropriate for the assessment of sustainable tourism. There are four parts which need to be joined and rationalized:

- The different conceptual approaches to the social dimension including concepts of social capital, social inclusion and exclusion, social equity and welfare, social cohesion and well-being.
- The different perspectives on the social dimension of tourism primarily the visitor, the host community and tourism businesses.
- The aspects that are most commonly associated with the social dimension such as health, education, culture, decent work, etc.
- The different population groups including children and youth, the elderly, people with disabilities, etc.
The blending of these four parts in the chapter is aimed at placing relevant data in context and providing a pathway for compilers to make decisions about which data requires collection and for users to understand which data are of most relevance.

The framing provided in this chapter also goes some way towards suggesting possible relationships between different social data sets but this is limited to answering questions of the appropriate description of the social dimension to support discussion and decision making. There is no intention or ambition to articulate causal relationships between social variables.

4.2 Concepts in the measurement of the social dimension

A range of different concepts have been developed in relation to the measurement and interpretation of the social dimension. Given the accounting-based nature of the SF-MST, of particular interest is the concept of social capital but other concepts such as social inclusion and exclusion, social equity and welfare, social cohesion and well-being are also relevant.

To provide a starting point for the consideration of these concepts in the context of sustainable tourism, the following question is proposed as representing the focus of efforts in the measurement of the social dimension:

What is the extent to which engagement in tourism (both direct and indirect) affects social development?

Social development in this context is considered to be reflective of improvements in social capital, social inclusion, social equity, social cohesion, social carrying capacity, and overall well-being recognizing that these are separate but overlapping components. In addition, what constitutes improvement in social development, i.e. whether one social situation is better than another, will likely vary from place to place and will require social choices to be made, for example as reflected in legislation or charters of human rights. Notwithstanding these challenges, the measurement question outlined above should provide a suitable starting point for framing the discussion and the associated social choices.

It is intended that the following paragraphs will summarize the main points on the different concepts. In general, it is intended to make the distinction between the stock of social capital that underpins social development (as reflected in the extent and quality of networks, shared values, institutions, etc.) and the measures that reflect the performance of the social system including, for example measures of poverty, health, education, culture, etc.

It is noted that these performance or outcome measures will likely reflect inputs from a combination of capitals, for example health outcomes will reflect a combination of the quality of doctors, hospitals, the external environment (e.g. air quality) and social capital. In measuring the social dimension, it is therefore insufficient to focus on changes in social capital.

It is also noted that there is not a single view or concept of the social dimension which is sufficient for capturing all of the aspects that decision makers may be interested in. From a statistical framework perspective, it is considered appropriate to be able to provide a logic which allows all of the relevant aspects to be included and for data to be available to users to apply whatever interpretative lens is appropriate. Thus, in a situation where a single aspect, e.g. poverty, is relevant in relation to more than one conceptual view, e.g. poverty is relevant in the measurement of social equity and well-being, the statistical framework should only include the aspect once.
Finally, it is noted that, to a greater extent than for the economic and environmental dimensions, the differences in cultural and societal values that exist around the world may make it more challenging to assess performance of countries with respect to the social dimension. Clarity will be needed on the connection between measurement of various social phenomenon and the interpretation of these data in relation to different societal norms and expectations. >>

4.3 Perspectives on the social dimension in tourism activity

To appropriately capture the various aspects of the social dimension is it important to consider the different perspectives of those involved in tourism activity. Three perspectives are considered central for the measurement of sustainable tourism – the visitor, the host community and tourism businesses. Each represents a different way in which people engage with tourism, either directly or indirectly, and hence each will have different perspectives on tourism’s influence on social development.

The visitor perspective can be separated into the social dimension at the place/s visited and within their usual environment. Key features of the social dimension at the place visited will include visitor perceptions, visitor experiences (e.g. of health, crime, congestion), engagement with local communities (e.g. cultural experiences, heritage, local products) and issues of accessibility (for example with respect to age, disability, or to infrastructure).

Within their usual environment, it may be relevant to consider the extent to which engagement in tourism provides visitors with improved overall well-being, improved social networks, educational outcomes, or more negatively, experience limited access to tourism opportunities (e.g. due to cost, ethnicity). Also, more directly people’s capacity to access tourism may be an important area of measurement.

The host community perspective, is a high profile focus of sustainable tourism discussion. A common area of interest is whether a host community is heavily impacted (i.e. in terms of quality of life) due to the extent of tourism activity. A simple measure of pressure (e.g. number of tourists relative to population) may provide an initial indication of potential host community perspectives. However, a more encompassing assessment should include community perceptions of tourism and indicators of various social aspects such as access to housing, quality of infrastructure (e.g. roads), availability of basic services (including water, energy, health), crime and safety, the distribution of benefits arising in terms of incomes and employment and the degree of recognition of cultural and indigenous heritage. And collectively, the host community perspective should encompass assessment of their capacity (both awareness and involvement) to participate in decision making.

The tourism business perspective is needed to ensure that the contribution of these businesses to social development in considered in assessing sustainable tourism. A particular aspect of focus under this perspective is decent work, i.e. the extent to which tourism businesses provide employment opportunities, adequate earnings, safe working environments etc. To some extent, this perspective might be encompassed within the perspective of the host community (and the extent to which the economic benefits of tourism are shared locally) but taking an explicit business perspective facilitates consideration of businesses which operate across multiple communities.
4.4 Aspects of the social dimension

The term aspect is used here to refer to the different areas, topics and themes which are the most common focus of measurement in the social dimension. Sometimes these aspects make most sense when considering specific population groups (e.g. education usually has most relevance in the discussion of children and youth) but in other cases, assessment for the whole population will be relevant (e.g. in relation to crime). The following aspects are listed to indicate the potential coverage of the SF-MST noting that in practice it will be necessary to consider the relevant perspective (visitor, host community or business) and the appropriate population groups) before determining the scope of measurement.

<<The following list is for discussion. It is recognized that there are overlaps among the groups listed. The intention is to ensure complete coverage and then to pursue improved organization.

Following discussion on the coverage and organization of social aspects, it is intended that the chapter will provide a short description of each aspect, its connection to the social dimension and links to relevant statistical or measurement definition and advice. It is noted that all of the following aspects have been proposed for measurement across a range of international initiatives over the past 10-15 years, including through the SDGs. >>

Potential aspects of the social dimension for sustainable tourism

- Income and wealth distribution; Poverty
- Health; Nutrition
- Education; Skills, Training
- Housing
- Personal security, safety, crime, peace (of visitors; of host communities)
- Social capital
  - Social connections and networks
  - Community and individual levels of trust / tolerance
  - Civic engagement and participation
  - Institutions and governance
  - Corruption
- Subjective well-being of host communities; of visitors
- Visitor perceptions of destinations, Community perceptions of visitors
- Human rights – discrimination, empowerment, social equity
- Participatory processes and decision making
- Decent work
  - Employment opportunities/Job creation
• Decent hours
• Adequate earnings and productive work/life balance
• Child and forced labour
• Job security
• Equal opportunity and remuneration
• Safe working environments
• Social security
• Social dialogue and representation

• Accessibility and use of infrastructure
  • Roads, transport systems
  • Congestion and noise
  • Basic services (water, energy)
  • Environmental space (green space, national parks, beaches)

• Culture and heritage <<NB: Mexico provided a range of material in relation to this aspect that can be developed for use here pending further discussion.>>
  • Participation in production (cultural products, employment, income), social and cultural inclusion
  • Festivals and events
  • Protection of heritage incl. language, arts, etc.
  • Respect for traditional values and cultural assets

Within each aspect a range of variables may be relevant. Measures of the number of people, presence or absence of services, ratings and perceptions, government expenditure, income, or number of occurrences may be useful in different situations. The issue of which measure / indicator should be adopted for use in SF-MST will need to be a part of the discussion in the development of this chapter.

Further, in the description of the relevant aspects and measures, connections will be needed to relevant statistical standards and guidance and to potential measurement approaches. For measurement approaches particular focus will be placed on describing the role of cultural satellite accounts and social accounting matrices in the organisation of data on the social dimension.

<<NB: Mexico has provided a number of tables for the organization of data on the cultural aspects of tourism that will be considered as the chapter develops further.>>

4.5 Population groups

The final part of the framing for the measurement of the social dimension concerns the relevant population groups. While it is possible to measure the range of aspects listed above in relation to a population as a whole, in many instances of most relevant in discussion of the social dimension is the situation with respect to specific groups of people in society. Indeed, it is not unusual for approaches to measurement of social indicators to mix aspects
and population groups when establishing the appropriate areas for measurement. Thus persons with a disability and indigenous people are often identified as distinct areas of measurement.

The approach taken in the SF-MST is to distinguish the aspects and the population groups thereby establishing a matrix showing combinations of these two parts. This matrix can be used to identify the key areas that should be the focus of measurement.

The proposed list of relevant population groups is below. Pending discussion, it is intended to provide a short description of each population group, the connection to the different perspectives on sustainable tourism described above and relevant measurement advice. It is noted that individuals may be a member of more than one group and hence the organization of data about population groups effectively provides a different set of lenses with which to consider social information. Also, it is expected that in many cases it will be relevant to organize data following criteria such as age, income level, and educational status but these are not distinguished here as distinct population groups. Finally, it will be relevant to consider how to best consider data on a spatial basis. The following chapter considers the ways in which the areas within a country maybe delineated to support the measurement of sustainable tourism. In many cases, the assessment of social aspects at detailed sub-national levels will be relevant – especially from the perspective of host communities.

In some cases, there are well-established processes that can underpin the collection of data for these population groups, for example via population census. The challenge is then on the adequate resourcing for ongoing data collection and dissemination. However, in other cases, for example in relation to the collection of data on ethnic and religious minorities, there may be well established principles that do not allow for the collection of such data, for example for reason of protecting privacy. The collection and organization of data to support the discussion of the sustainability of tourism must be aware of and sensitive to these realities.

Proposed population groups

- Gender – Female / Male
- Children and Youth
- Elderly
- Persons with a disability
- Indigenous groups
- Ethnic and religious minorities
- Migrant workers
- Families
- LBGTQI
- Urban / rural / coastal

4.6 Integrating the four parts of the social dimension for the measurement of sustainable tourism

<< Building on the descriptions in the previous sections, and pending discussion on the framing and coverage of the social dimension those sections present, this section will
develop an overall framing for the measurement of the social dimension for SF-MST. It will outline the key areas (i.e. combinations of perspective, aspect and population group) that should be the focus of measurement while at the same time allowing for compilers to recognize means of providing additional or alternative views of the data. The section will also describe key indicators that emerge from the development of the data sets.

It may be useful for determination of the areas of focus to utilize a starting point such as the set of social themes included in the UNWTO 2004 Guidelines on sustainable tourism indicators. 

5 Defining spatial areas for the measurement of sustainable tourism

Notes to Chapter 5: The measurement of the various dimensions of sustainable tourism will commonly be conceptualized at different scales from local level to national and global levels. In practice, the assessment of sustainable tourism and the implementation of relevant policy responses has often taken place at a sub-national level, while the measurement of tourism statistics is usually coordinated at national level. The Sustainable Development Goals embody the tracking of progress globally in a way that is comparable across countries.

This chapter aims to describe a conceptually sound but practical approach to integrating data to underpin measurement across the economic, environmental and social dimensions. There is little doubt this is a challenging area of measurement.

The intent is to provide a common framing and language about spatial areas in the measurement of sustainable tourism to support the discussion and interpretation of data and to provide opportunities for the enhanced integration of data from different dimensions.

The current text is uses material developed in the context of research undertaken for the MST project that was presented at the 6th International Conference on Tourism Statistics. The material provides only a starting point for further discussion. It is expected that substantial progress in this area will take place through the development of the SF-MST.

5.1 Introduction

The development of the concept of sustainable tourism over the past 25 years has had a clear and direct focus on the sustainability of tourism activity at a destination level as distinct from considering the broader sustainability of tourism at national or global levels. In this context, tourism destinations have commonly been conceptualized as relatively small, local areas such as cities or small islands. Using this small spatial area perspective, the sustainability discussion and related measurement and indicator activity is focused on encompassing and finding balance among the three dimensions of sustainable tourism – the economy, the environment and society.

As described in Framing Sustainable Tourism, this small spatial area perspective is quite distinct from the broader national perspective that mainly has been the focus of official tourism statistics. The significant statistical developments of the International Recommendations on Tourism Statistics (IRTS) and the Tourism Satellite Accounts: Recommended Methodological Framework (TSA:RMF) in 2008 provide an excellent platform for measuring tourism activity in a comparable and credible way. However, as both documents have a national and global focus, they do not provide direct guidance for sub-national measurement although they continue to provide an underlying conceptual reference for measurement at sub-national levels.

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19 Discussion paper drafted or the Meeting of the Working Group of Experts on MST, Madrid, 20-21 October, 2016
The purpose of this chapter is to describe how a bridge can be built between these two perspectives – the smaller scale sustainable tourism perspective and the larger scale official tourism statistics perspective. The nature of the bridge needs careful consideration however. In the first instance it will be important to understand that the nature of the policy or analytical question will be different at different scales and hence the type of information that is needed at different scales is likely to be different.

Second, there will be differences in the range of data that is available at different scales. In this regard, it is important to recognize that building a bridge is not simply a case of examining the extent to which currently available national level data can be “downscaled” to provide information at a destination level. Or whether the type of data desired at a destination level can be collected using statistical processes.

Overall, the ambition is to describe how both detailed spatial data and national level data may be best integrated to provide a coherent, “single best picture” of tourism activity that is of most use to decision makers and other stakeholders at different scales.

Compiling a single best picture does not imply that all economic, environmental and social information must be available at every spatial scale. This would not only provide an endless compilation challenge but also likely produce a substantial volume of data that are not useful. Rather the ambition should be that the information set compiled is both appropriate for the spatial level of analysis and use, and coherent with information at other spatial levels. For example, estimates of visitor expenditure on accommodation at national level should be consistent with estimates of visitor overnights at destination levels with a country.

The importance of coherence emerges from a policy perspective as it is recognized that decisions made at each spatial scale – local, regional, national, global – are not independent. (See for example the discussion in Hein et al (2006).) Choices made at a local level will have impacts on broader regions, and national and global policies will influence outcomes at a local level. These inter-connections are best understood and interpreted when the data organized at each level tells a consistent and coherent picture of the structure of tourism activity and the change over time.

There are some data that may seem relatively non-spatial in nature. For example, visitor perceptions, migrant labour movements and climate change indicators. It is certainly the case that the way in which these types of indicators connect to locations is less direct than, for example, indicators of visitor consumption on accommodation and restaurants. However, this paper starts from the general premise that “everything happens somewhere” and hence connection to spatial areas is meaningful for all types of measurement. Thus, visitor perceptions will concern a location or set of locations and the visitor will be resident somewhere. Climate change is a globally diffuse phenomenon but actions that contribute to climate change can be spatially located and the impacts of climate change occur in specific locations.

The primary focus for the SF-MST is on establishing a consistent way in which different spatial scales and spatial areas might be defined / delineated within a country, and hence support coherent policy and decision making. This will support all stakeholders, including users and data providers, to work towards a common approach within their country for the collection and use of data at different spatial scales.

In addition, the SF-MST provides a description of which data might be most relevant at different spatial scales recognizing that some variation in the application will be essential depending on the specifics of the location and the policy/analytical context.

The approach described comes from the perspective of official statistics in the sense of imagining the potential for a nationally coordinated, internationally comparable, set of
information. However, it is important that the perspectives of many other areas of expertise are incorporated to better support decision making.

The initial framing described in this chapter builds on a range of work including the statistical guidance of the IRTS and the TSA:RMF, the spatial accounting in the System of Environmental-Economic Accounting Experimental Ecosystem Accounting (SEEA EEA) (UN et al, 2014b), and work on sub-national and sustainable tourism of UNWTO and the INRouTe network, among a number of other materials. It does not provide a definitive and final word on this topic which will be the focus of ongoing discussion within the MST project.

5.2 Terminology with respect to spatial areas

Discussion of the topic of defining spatial areas immediately suffers from the choice of language and wording to describe the different scales of measurement and analysis that different stakeholders are considering. The section proposes some terminology to be applied in the MST framework.

The broadest scale is considered the global scale encompassing both all countries and all marine areas.

The supra-national scale is used to refer to groupings of countries, usually in contiguous areas, including for example, Africa, the Middle East, the South Pacific. Within international statistics these are commonly referred to as “regions”, but this term is reserved here in relation to certain sub-national areas (see below).

The national scale is the most common level of statistical measurement and is the level of government that sets the overarching legislative and policy frameworks and engages with other countries.

The regional scale is used to refer to the level of administrative unit directly below the national level. This use of the term is the same as applied in the recent INRouTe document (INRouTe, 2016) and corresponds to the NUTS 2 level in the EU territorial classification scheme (although it is noted that compilation at the NUTS 1 level may also be relevant) (Eurostat, 2015). Countries may also use the terms state, province, county, etc. It does not refer to aggregations of countries.

The municipal or city-region scale is used to refer to the level of administrative units corresponding to local but relatively large populations. Large cities may have a number of municipalities. In rural areas, the municipal scale may encompass some urban and agricultural areas.

The local scale is used to refer to the areas or zones within a given municipality that exhibit particularly concentrations or clusters of commonly purposed or aligned activities and businesses. In the context of this paper the focus is on concentrations of tourism activity but other activities may also be of particular interest. It is not expected that administrative units would be defined at this spatial level.

The term sub-national is used to refer to the three spatial scales below the national level (i.e. regional, municipal/city-region, local).

In different countries and contexts some of these scales may be merged or there may be additional scales within the six scales described here. However, these six scales are considered sufficient for the purposes of discussing the relevant concepts.

The term tourism destination might refer to any of these scales (except global). Thus, a destination might be a country, a region, a municipality or a location. In the discussion of

Comment [PL6]: ...there is a link to chapter “3.4.4 Tourism related environmental assets”?
sustainable tourism, the concept of a tourism destination appears to be most commonly associated with spatial areas defined at the local or municipal level and, when the term destination is used, it is this smaller conception of tourism area that is being applied.

The intent in the MST is to integrate economic, environmental and social data. For many of these data, it is appropriate to consider that the scales listed above would be appropriate, in the sense that data should be able to be attributed to a location and hence to the other, larger scales. The important exception to this will be cases where large ecosystems, for example forests, agricultural areas, etc., or other environmental scales, for example water catchments, national parks, etc., cross municipal, regional or national boundaries. The appropriate approaches for integrating data in these situations requires further discussion.

5.3 The statistical challenge in defining spatial areas

The need for coherent spatial boundaries

From a statistical perspective, the methodological challenge is to develop the structure and tools to support providing relevant information for policy and analysis at the appropriate spatial scale. As noted above, most commonly, the starting point for statistical measurement is the national scale. Thus, national statistical agencies will tend to focus primarily on the collection and dissemination of economic, social and environmental data at national level. This reflects their historically primary role as providing a service to national governments.

At the same time, many countries operate statistical systems that are federated in nature. That is, national level data are compiled using information collected at the sub-national level. Thus, there are commonly regional and sometimes municipal level statistical processes and outputs.

While both national and sub-national level data sets are commonly produced, a standard feature of a statistical approach to spatial data is to ensure consistency and coherence across spatial scales. Thus, for any single set of data, a national level aggregate must be consistent with the results obtained for the component regions or municipalities.

Importantly, this does not imply that for each individual set of data, precisely the same sub-national boundaries must be used. For example, data on water is likely best considered in terms of water catchments at sub-national level, while data on social aspects might be best considered for administrative regions. Given this variation there are two challenges to consider:

i. ensuring that for each individual set of data the spatial boundaries are internally coherent
ii. determining which spatial boundaries should be used to facilitate comparison and integration across data sets.

This requirement for internal coherence should ensure that there are mutually exclusive and exhaustive spatial boundaries – i.e. the different spatial scales are defined or delineated in such a way that all areas within a country are included and no areas are covered more than once. This ensures that data coverage is complete and that there is no double counting.

20 The focus in this discussion is on methodological issues surrounding spatial data. In addition, it should be recognized that there are likely to be significant institutional challenges to be faced in developing spatial data sets including establishing co-ordination and management across levels of government and ensuring appropriate data sharing and use arrangements are in place.
This requirement for the delineation of spatial areas such that there is complete and non-overlapping coverage within a country poses a quite different challenge to the situation in which measurement is being designed for a single region, municipality or location. That is, if there is a focus on only one spatial area, it can be defined without consideration of neighbouring areas. This has been the approach taken in many indicator initiatives, where even in exercises that bring together data from different destinations, the definition of each destination has often been determined by the managers of each destination.

Unfortunately, this area-specific approach limits the potential to compare data between similar types of spatial area, since they may be delineated in overlapping ways. More significantly it limits the potential to compare data across spatial scales. Thus, unless there is an agreed and nested structure to spatial areas it is not possible for national level analysis to easily integrate information available at smaller municipal and local type scales if these have been defined in alternative, non-nested ways.

Thus, for the purpose of official statistics, it is important that a set of commonly agreed spatial boundaries are delineated for different datasets. This would be ideally implemented through the adoption of a national spatial data infrastructure (NSDI). This is not to say however that the process of reaching such a common set of spatial boundaries must be top-down. Instead, it will be essential that those working at the various sub-national levels are involved in the discussion and their insights into how spatial areas are defined can generate information that are suitable for analysis and policy at those sub-national level. One pathway forward in reconciling top-down and bottom-up perspectives may be the delineation of spatial areas at very fine levels that can then be aggregated to form different intermediate spatial areas for analysis and reporting. For example, a combination of small spatial areas may be used to represent a single tourism destination.

The application of accounting principles

In the context of spatial areas, statistical accounting standards (e.g. SNA, SEEA, TSA:RMF) clearly specify the geographical boundaries for the collection, compilation and dissemination of data. However, these boundaries are almost exclusively related to national scales of measurement. As a consequence, the general understanding is that accounting standards pertain primarily to the compilation of national level data sets. This extends, for example, to the expectations concerning the appropriate measurement of the substantial global value chains that exist in tourism and other sectors. Accounting standards will tend to consider these chains in terms of linkages between countries rather than as linkages between (or within) businesses for specific goods and services.

In fact, the underlying accounting principles are independent of scale. By way of example, the national accounting principles outlined in the SNA apply equally to a large and diverse economy of the United States and the small island nation of Tonga. Most definitely, the measurement of the national accounts will be a more involved task in the United States, and in both countries different types of data are likely to be used, but the principles applied are the same.

The same conceptual logic applies in sub-national situations since the essential difference between national and sub-national scales is one of size. Often it is imagined that there are quite fundamental differences in measurement principles at sub-national scales. In fact, the differences lie in the application of the principles and the primary considerations are feasibility (i.e. are resources available to measure national level statistics at finer spatial scales) and relevance (i.e. should all national level data be compiled at finer spatial scales).
Nonetheless, there are two specific measurement challenges that are significant in the context of tourism. The first concerns the recording of information on transport and visitor movements at a sub-national level and the associated attribution of production activity, particularly of transport companies. This is no doubt a challenging measurement issue. However, recognizing that conventions have been established to deal with such issues between countries then, at least in principle, and assuming the availability of sufficient resources, it would be conceivable that each location or municipality within a country could be considered a separable area for transport purposes and all movements and production allocated using the national level treatments.

Second, again at least in principle, it should be possible to estimate the allocations to tourism activity that are required to calculate, for example, tourism gross value added. In practice, this can be challenging at national level and is likely to involve additional issues in finding appropriate data at a sub-national level. Conceptually as well, the allocation of data for a single business operating across multiple locations within a country is not straightforward.

While these challenges are real, they are in part a reflection of an attempt to downscale national accounting based data and methods to sub-national level. An alternative approach is to consider the availability and application of data sources such as local visitor surveys, business register statistics and big data (e.g. mobile phone data) to build a rich sub-national information set that can then be integrated with top-down national accounts based sources and methods.

5.4 The feasibility and relevance of compiling sub-national data

Although statistical and accounting principles could be applied at all spatial scales, the reality is that this does not take place and generally there will be far less data available at sub-national scales than at national scales. This reality arises for two key reasons. First, the available resources for statistical collection are generally allocated so as to optimize the compilation of national level estimates and this means that finer level detail is generally either not produced or is of relatively poor quality (e.g. where small sample sizes lead to very high standard errors).

Second, there are commonly different decisions made at national levels compared to regional and municipal levels and hence there are different types of data that are relevant. For example, detailed data on the performance of the financial markets is not of relevance at sub-national levels.

These two points provide an explanation for the most common situation of a lack of standardized coverage of spatially detailed official statistics. For national level decision making, this may be satisfactory for macro-economic management, but it is generally unsatisfactory for many other areas of policy and decision making where understanding the location and context is imperative. Put differently, relying on national averages is often likely to be misleading and ignore important variations among different areas within a country.

At sub-national level, the immediate demand for standardized spatial areas from decision makers may be less clear since they will have a focus on data for their own spatial area. However, there may be significant benefits in being able to discuss policy and other issues with other sub-national areas and with national level decision makers on the basis of a common understanding of the different spatial area within a country.

The case for extending and improving sub-national statistics is very apparent in considering sustainable tourism. Measuring the sustainability of tourism requires the integration of data
across the environmental, economic and social dimensions and assessing sustainability across these dimensions. Generally, determining context-specific policy responses is most meaningful at finer spatial scales. The need to consider sustainability at finer spatial levels is evident in the almost complete focus on destinations in the conceptual and policy work on sustainable tourism. Further, the case for sub-national statistics for sustainable tourism has been made strongly in much previous work, including by INRouTe (2017), the Regional Government of Andalucia, Spain and the OECD (OECD, 2016) The relevant arguments have been picked up in the MST project.

In terms of national statistical programs, this demand for sub-national data is strongly supported through work to geo-reference data from national population censuses and business registers and this type of work can directly support implementation of SF-MST.

At the same time, while the case for sub-national level data is strong and statistical principles can, in theory, be applied equally at sub-national level, it is not the case that the logical ambition is to replicate all national level statistical outputs at all sub-national spatial scales. Aside from the potential cost, since the types of decisions made at different spatial scales vary, not all data will be equally relevant at all scales. Indeed, some data may be most relevant at finer scales and not relevant or meaningfully aggregated to national scale, e.g. data on traffic congestion.

5.5 Current definitions of spatial areas for tourism

From a statistical perspective, there is little standardized advice on sub-national tourism statistics. The IRTS has a brief mention of the need for sub-national tourism statistics but provides no guidance on how sub-national areas might be delineated. The TSA:RMF does not consider sub-national measurement.

The concept of a tourism destination is not defined from a statistical perspective although it has been defined by UNWTO for tourism management purposes (see Box 5.1). Unfortunately, this definition, while clearly linked to a spatial concept, does not provide the means by which a standardized approach to delineating sub-national tourism areas can be established within a national context.

Box 5.1: Destination management definition

A Tourism Destination is a physical space with or without administrative and/or analytical boundaries in which a visitor can spend an overnight. It is the cluster (co-location) of products and services, and of activities and experiences along the tourism value chain and a basic unit of analysis of tourism. A destination incorporates various stakeholders and can network to form larger destinations. It is also intangible with its image and identity which may influence its market competitiveness. (UNWTO, 2016).

In its research and discussion on sub-national tourism measurement, the INRouTe project (2017) proposed a series of classes to support the organization of statistical information at sub-national levels. Those classes are shown below in Box 5.2. The classes are placed in two groups - regional and local. The classes are not defined in a hierarchical manner, i.e. they are not nested such that smaller areas lie within larger areas, and hence information associated with the different classes cannot be meaningfully aggregated or disaggregated. Thus, the classes provided by INRouTe do not provide a classification as such but rather a typology of different spatial areas that may be of interest. This is certainly useful in furthering the understanding of statisticians and other stakeholders of the levels at which information is required. However, since there is no specific connection between the different classes,
particularly between the local and regional levels, it is not clear precisely how a coherent set of spatial areas might be defined.

**Box 5.2: INRouTe sub-national classes**

**REGIONAL**
- Region
- Multi-regional (supre-national)
- Multi-regional (intra-national)
- Other administrative units
- Analytical units

**LOCAL**
- Municipality
- Multi-local
- Other administrative units
- Analytical units

It is worth emphasizing that the ambition of developing a nested set of spatial areas for the organization and aggregation of statistical information on tourism should remain the objective recognizing that it is likely that the resulting set of spatial areas will not satisfy all requirements or analytical demands.

Perhaps the most established approach to sub-national area classification is the European NUTS classification (Eurostat, 2015) that was originally established in 1970. It has four levels and two additional levels that allow for further disaggregation. The boundaries are established based on the three principles of population thresholds, administrative divisions and stability through limited amendments over time ([http://ec.europa.eu/eurostat/web/nuts/principles-and-characteristics](http://ec.europa.eu/eurostat/web/nuts/principles-and-characteristics)). The fully nested nature of the NUTS classification scheme perhaps provides a structure within which tourism destinations can be identified.

At national level, there are also classifications of areas that may be relevant. In Australia, primarily for the purpose of organization of population census information, but also for the organization of other socio-economic data, a classification of spatial areas based on concentrations of population has been implemented. ([ref#](#)) This works from so-called “mesh-blocks” at the finest level through to a series of larger areas known as “statistical areas”. Statistical area boundaries are nested/constrained to the regional level of aggregation but different aggregations of mesh blocks are used to generate municipal level information. Thus, from a fine level spatial area alternative and complementary aggregate spatial areas can be defined. In the UK, at fine level, “neighbourhood” statistics have been developed where neighbourhoods are delineated on the basis of census output areas or electoral boundaries (electoral wards). No doubt there are many other examples of national approaches to sub-national classification.

The majority of approaches are likely to have a close link to administrative units, which in turn are commonly based on concentrations of people and the households they comprise, particularly at finer spatial levels. Using boundaries delineated in this way to analyse the behavior of visitors, the productive activities of tourism industries and associated environmental stocks and flows may suggest additional factors need to be considered.

The System of National Accounts briefly discusses the idea of sub-national/regional accounting systems, a topic also picked up by Eurostat (2010). The System of Environmental-
Economic Accounting (SEEA) Central Framework (UN et al, 2014a) focuses almost exclusively on national level statistics although recognizes that environmental assets and flows will be recorded in relation to a specific location. The SEEA Experimental Ecosystem Accounting (UN et al., 2014b) explicitly takes a spatial perspective in defining ecosystem assets wherein the assets are defined in terms of the area of different ecosystem types, e.g. forests, wetlands, grasslands, etc.\(^2\)

5.6 Pathways forward in defining spatial areas for measuring sustainable tourism

5.6.1 General observations

Overall, there are a number of examples of statistically based classifications of sub-national spatial areas. On the whole, aside from the ecosystem accounting approach, the approaches used start from administratively defined areas and have a nested delineation of progressively smaller areas. At the same time, complementary areas may also be defined for the purposes of being able to present statistics in reference to different spatial areas.

Finding a pathway forward will require reconciling the general motivation of statisticians to provide data based on administratively defined spatial boundaries and the reality that the spatial areas of most relevance for the analysis of sustainable tourism do not conform to these boundaries. There is thus a balance to be found between feasibility on the one hand and relevance on the other, recognizing that comparability among spatial areas is likely a key feature of relevance given the inter-linkages both within and across spatial scales.

Ultimately, relevance must take the highest priority and methodologies should be developed that support implementation. Providing data at a spatial scale that is currently most feasible but which is not relevant for decision making and analysis, would not represent a good return on investment. Nonetheless, to the extent that the provision of data on the basis of administrative areas is relatively more tractable it is then important that these spatial areas retain an important place in the proposed structure. Discussion of the types of data for which administratively based areas would be most appropriate is relevant in this context. The next step is to consider how areas of relevance for the analysis of the sustainability of tourism might be delineated.

It will be important to keep in mind that data quality at finer levels of spatial detail will be hard to achieve. In particular, the fact that accounting concepts may be applicable at fine scales does not imply data quality at that level. At the same time, the use of accounting methods wherein various data sources are confronted within an agreed framework, may provide the opportunity to make the best use of a variety of data sources in compiling statistics on tourism at relatively fine spatial scales.

From the literature, it appears the clearest approach is to define areas on the basis of significant functions or roles. This reflects the type of approach that underpins the delineation of social-ecological systems (see, for example, Leslie et al., 2015), the way in which ecosystem accounting (described in the SEEA EEA) delineates between different

ecosystem assets and in relation to spatial areas for tourism (see, for example, Hernandez-Martin, 2014).

Methodologically, the primary issue then becomes which factors, characteristics or criteria should be considered to determine whether tourism is significant in a particular location. It should be noted that the choice of characteristics for delineation is not an independent process but rather needs to be conducted by involving all stakeholders such that the resulting statistics are meaningful for policy and analysis at all levels to the greatest extent possible.

In this regard, it should be accepted that the delineation of spatial areas for statistical purposes will not result in spatial areas that are considered ideal for all purposes. However, the alternative of applying different spatial boundaries for every project and in every context significantly limits the potential to compare across projects, across dimensions of sustainability and over time. It is a focus on improving the potential to compare that is at the forefront of efforts to measure sustainable tourism.

A final factor to consider is that since the SF-MST encompasses data from a range of dimensions, the delineation of spatial areas should be relevant to different data. Thus, the potential power of sub-national data will be considerably enhanced if data from different dimensions can be attributed to a standard set of spatial areas. In this regard, the availability of data at finer scales may be an important consideration.

5.6.2 Possible characteristics and criteria for delineating sub-national spatial areas

Given the multi-faceted nature of tourism that is encompassed by tourism statistics there are two complementary perspectives to be considered – (i) a tourism supply perspective in which the focus is on the location and concentration of tourism industries and (ii) a visitor demand perspective in which the focus is on the places visited. Further, under both of these perspectives it will be relevant to make connections to associated ecosystems – e.g. marine areas and national parks.

The supply perspective is perhaps the most tractable pathway to delineating smaller spatial areas. This would involve using information on the location of tourism characteristic industries and determining a boundary around particular concentrations of these industries. In many cases it is likely that such areas are relatively well known and evidenced by known concentrations of hotels and associated restaurants. In some areas, it may be a concentration of, for example, theme parks and similar attractions. For statistical purposes, it would be relevant to provide methodological guidance on how relevant concentration thresholds may be estimated at sub-national and national levels (as distinct from proposing universal standards to be applied which would not be appropriate). This would be developed as part of the SF-MST.

Delineation from the perspective of visitor demand will, in many cases, overlap with a delineation based on tourism supply. That is, in cases where the visitor receives goods and services from a tourism business, the relevant location is the same in both perspectives. However, there will also be instances where visitor activity takes place away from, or at least adjacent to, the location of tourism businesses. Particular examples will be national parks, beaches, reefs, cultural sites, etc. In addition, there will be many exchanges between visitors and non-tourism businesses. Taken together both the demand and supply perspectives should enable a description of a set of tourism areas within a country.

To initiate discussion the following possibilities are listed:

- Industry concentration – e.g. location of tourism establishments
- Employment concentration – e.g. location of tourism jobs
- Visitor concentration – e.g. location of visitor overnights
- Expenditure concentration – e.g. location of visitor expenditure

At this stage, no specific guidance has been developed beyond these initial descriptions. It is intended that the development of the MST framework will facilitate further discussion and the descriptions in this preliminary draft represent a starting point for this discussion and research. Some particular points for discussion include:

- describing the relationship between small tourism areas and the concept of “usual environment” that underpins tourism statistics
- developing suitable criteria for determining tourism significance for application in delineating small tourism areas
- considering with particular care the application of the approaches to delineation in large cities where tourism activity will be important but one of many activities taking place
- understanding the extent to which the delineation of small tourism areas raises questions of maintaining confidentiality in the release of statistics
- appropriately integrating environmental and social data for small tourism areas and, at the same time, related areas such as water catchments
- making the connection to differences in geography and climate in distinguishing between tourism destinations.
6 Combined presentations, indicators and applications for measuring the sustainability of tourism

Notes to Chapter 6: Ultimately, the conceptual framework described in the SF-MST will drive the compilation of data and accounts. For these data and accounts to be most useful for decision making and assessment of progress towards sustainability, they need to be summarized. This chapter describes ways in which this translation of data can be undertaken through the development of combined presentations, through the derivation of indicators and through the use of various analytical tools and applications. The discussion here is not intended to finalise a mandatory set of indicators for the measurement of the sustainability of tourism, but rather aims to demonstrate the types of indicators that can be derived within the SF-MST.

6.1 Introduction
<<To be developed pending agreement on the inclusion of this chapter>>

6.2 Combined presentations
The SF-MST incorporates combined presentations to support the communication of information on sustainable tourism and to underpin the derivation of indicators. Combined presentations provide a means to bring together a range of information from different sources. They thus present a summary of key measures and also provide a basis for the derivation of indicators. In this context, the underlying base accounts and tables provide the means to ensure that summary data and indicators are based on coherently and consistently compiled data for any given topic, for example, environmental flows of water or energy.

Many forms of combined presentations are possible depending on the focus of communication and the range of data available. The data items included in the combined presentations should be of relevance to policy makers and should be able to be used to calculate indicators, for example for reporting on progress on the SDGs. A consistent level of industry disaggregation has been applied in these combined presentations. In practice, this level of disaggregation should be varied to suit the decision-making context, noting that there should be consistent use of the underlying ISIC classes to support comparison and analysis.

The following examples of combined presentations are illustrative only. They should be used to introduce and demonstrate the potential applications of the SF-MST and serve as a basis for engagement with different users about their needs and with different data producers about the ways in which their data are being applied for policy and analysis.
Table 6.1: Examples of combined presentations for sustainable tourism (illustrative examples only)

Table 6.1a: Combined presentation – Economic dimension for tourism industries

<table>
<thead>
<tr>
<th>ECONOMIC DIMENSION OF TOURISM INDUSTRIES</th>
<th>Tourism industries</th>
<th>Total all industries</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Accommodation for visitors</td>
<td>Food &amp; beverage serving</td>
</tr>
<tr>
<td>UNIT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Income and costs</td>
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<td></td>
</tr>
<tr>
<td>Output</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Dilution added</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Compensation of employees (labour costs)</td>
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<td>$</td>
</tr>
<tr>
<td>Intermediary consumption</td>
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<td>$</td>
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<td>Total</td>
<td>$</td>
<td>$</td>
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2. Business demographics

<table>
<thead>
<tr>
<th>Total number of establishments</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td></td>
</tr>
<tr>
<td>Locally owned</td>
<td></td>
</tr>
<tr>
<td>Foreign owned</td>
<td></td>
</tr>
<tr>
<td>Location - by tourism region</td>
<td>#</td>
</tr>
<tr>
<td>#1</td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td></td>
</tr>
</tbody>
</table>

3. Employment

<table>
<thead>
<tr>
<th>Employment in tourism</th>
<th>Hours worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total jobs or employees</td>
<td>#</td>
</tr>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Part time</td>
<td></td>
</tr>
<tr>
<td>Full time</td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td></td>
</tr>
<tr>
<td>Self-employed</td>
<td></td>
</tr>
<tr>
<td>Age / experience / education / skill set</td>
<td></td>
</tr>
</tbody>
</table>

4. Investment and infrastructure

<table>
<thead>
<tr>
<th>Gross fixed capital formation</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>$</td>
</tr>
<tr>
<td>Other</td>
<td>$</td>
</tr>
<tr>
<td>Capital stock</td>
<td>$</td>
</tr>
<tr>
<td>Buildings</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>$</td>
</tr>
<tr>
<td>Other</td>
<td>$</td>
</tr>
<tr>
<td>Available capacity (accommodation)</td>
<td>#</td>
</tr>
<tr>
<td>Rooms / beds</td>
<td></td>
</tr>
<tr>
<td>Net financial position</td>
<td></td>
</tr>
</tbody>
</table>

82
Table 6.1b: Combined presentation – Environmental dimension for tourism industries

<table>
<thead>
<tr>
<th>ENVIRONMENTAL DIMENSION OF TOURISM INDUSTRIES</th>
<th>Tourism industries</th>
<th>Total all industries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accommodation for visitors</td>
<td>Food &amp; beverage serving</td>
</tr>
<tr>
<td>UNIT</td>
<td>Tourism Total</td>
<td>Tourism Total</td>
</tr>
</tbody>
</table>

1. Environmental flows
   - Net water use: m³
   - Own-account water abstr: m³
   - Washwater generated: m³
   - Net energy use: MJ
   - Use of energy from renew: MJ
   - GHG emissions: tonnes
   - Solid waste generation: tonnes

2. Environmental assets
   - Land
     - Land use: ha
     - Land value: $

Table 6.1c: Combined presentation – Demand perspective – domestic and inbound visitors

<table>
<thead>
<tr>
<th>DEMAND PERSPECTIVE</th>
<th>Total</th>
<th>Same-day visitors</th>
<th>Overnight visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>by country of residence</td>
</tr>
<tr>
<td>UNIT</td>
<td></td>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

Number of visitors
- Total: # by age: #

Inbound arrivals
- Total: # by mode of transport: #

Number of overnights
- Total: #

Tourism expenditure
- Total: $ Passenger transport: $ Personal: $ Business/professional: $

Visitor satisfaction
- index

Attendance at events, sites and cultural assets by type of event, site, asset
- #
It should be apparent that there are many potential indicators that might be formed from the information contained in the accounts of the SF-MST through combination with existing information on tourism industries. For example, analysis might be extended to consider environmental flows by size of tourism establishments. The intention in designing combined presentations is to provide a starting point for discussion between compilers of accounts and decision makers to ensure that the measurement and derivation of indicators is both feasible and relevant.

### 6.3 Indicators of the sustainability of tourism

<<to be developed pending further discussion>>

#### 6.3.1 Sustainable tourism indicators for the SDGs

<< This section should be updated once discussion on the SDG indicators has advanced such that specific indicators can be described. We can then link these to relevant base accounts and tables and also design a combined presentation that has a focus on deriving SDG indicators.>>

The demand for high quality indicators to monitor progress has been most recently underlined by the adoption of the SDGs and the recognized importance of establishing clear and measurable indicators of progress towards these goals. Further, in establishing the SDGs, the UN General Assembly explicitly requested that the indicators developed for the measurement of progress towards the goals be statistically based (ref#). There is thus a clear role for the SF-MST and other statistical standards in the development and ongoing derivation of SDG indicators.
There are three SDG targets that relate directly to sustainable tourism, namely:

- **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.

The current proposals for indicators for these targets concern tourism GDP (TGDP) and tourism employment and jobs. Both of these areas of measurement are within scope of the SF-MST and the development of indicators is ongoing through the UNWTO Committee on Tourism Statistics and TSA.

At the same time, a focus on only these two areas of measurement will provide a partial picture of progress towards sustainable tourism and, more broadly, will not give a sense of the broader potential of sustainable tourism to contribute to the wider sustainable development agenda and the other SDGs. These broader connections are well summarized in the UNWTO release *Tourism and the Sustainable Development Goals* (http://icr.unwto.org/publication/tourism-and-sustainable-development-goals).

Work is ongoing to define a broader set of sustainable tourism indicators and alignment will be ensured between the definition of these indicators and the SF-MST.

### 6.3.2 Indicator initiatives at national and sub-national levels

The development of indicator sets for the measurement of sustainable tourism has been an active area of work for many years. Short summaries of a range of initiatives are presented below (Box 2) with a focus on indicator sets being developed by international agencies and within the private sector.

Country and regional level work on measuring 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.

Unfortunately, while there is generally considerable overlap between the indicator sets in terms of the types of themes that are covered, generally aligned with the guidance provided in the UNWTO 2004 reference on sustainable tourism indicators, there is little overlap in terms of the specific indicators chosen or the precise definitions underlying the indicators. This limits the potential for a joined-up conversation about progress towards sustainable tourism and comparison of policies and strategies that have been put in place in different countries, regions and locations.

There is, therefore, an opportunity for improved alignment by grounding measurement of selected themes in the definitions of the SF-MST. The SF-MST is not prescriptive in terms of the selection of themes or in the selection of relevant indicators but can support harmonized measurement of a wide range of indicators and hence underpin comparisons of performance on sustainable tourism.

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22 [http://statistics.unwto.org/studies_experiences](http://statistics.unwto.org/studies_experiences)
Box 2: Examples of Sustainable Tourism indicator sets

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.

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

OECD work in measurement 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.

European Commission's initiative on a European Tourism Indicators System (ETIS) for sustainable destination management has defined 43 core indicators and has been trialed in a number of destinations, including NECSTouR regions. To frame the indicators, they have identified four main themes: Destination management, Social / cultural impact, Economic value, Environmental impact.

United Nations 10 Year Forward Program (10YFP) on Sustainable Consumption and Production (SCP) has initiated the development of a flexible monitoring and evaluation framework to provide directions and vision and measure its progress on capacity enhancement for the shift towards SCP and incorporates a Sustainable Tourism Program (STP) within this broader framing.


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

28 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.

29 20 general pilot indicators have been 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.
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.

Within the private sector, UN Environment is developing a suite of indicators for measuring sustainable tourism within the private sector. Other private sector developments include:

- Voluntary certification standards around sustainable tourism operation with the Global Sustainable Tourism Council (GSTC) being a leading facilitator.
- Hilton hotels sustainability measurement platform
- Hotel Water Measurement Initiative (HWMI), and its equivalent for carbon, promoted by the International Tourism Partnership (ITP) of Business in the Community.
- The World Travel and Tourism Council (WTTC), with Griffith University and the University of Surrey, has released research on sustainability reporting in the context of the UN SDGs.

One possible requirement to support the derivation and analysis of indicators is the definition of an equivalent tourism population that allows the use of resources and social impacts to be appropriate compared to other, non-tourism, contexts and situations.

### 6.4 Applications and analysis of the sustainability of tourism

<<To be developed pending further discussion. Only a short introduction to the possible applications and types of analysis would be provided with the focus on how the accounts of the SF-MST can support such work>>

One of the distinct advantages of organizing and integrating data using an accounting framework is that the information can be directly linked to economic modeling that uses input-output tables summarizing the structure and inter-linkages of the economy. This is possible due to the use of consistent definitions of income and production and the use of common industry classifications.

There are many examples of the use of environmental flow information in connection with standard input-output tables and an introduction to the principles and summary of the relevant literature is provided in SEEA Applications and Extensions (UN et al 2017). Examples already exist in the area of tourism, for example the work for Wales on the connections of tourism and GHG emissions and tourism and employment (refs needed). Advancing the measurement of integrated TSA and SEEA accounts will further support these efforts in understanding the broader connections between tourism activity and the environment and ensuring that environmental data can be taken into account in the economic modeling of tourism.


32 [https://www.wttc.org/Sustainability-Reporting#undefined](https://www.wttc.org/Sustainability-Reporting#undefined)
Annexes

Manila Call to action

Relevant classifications
Glossary

<<To be developed>>

References and links (to be finalized)

European Commission, The European Tourism Indicator System, ETIS toolkit for sustainable destination management

OECD, Measuring the Role of Tourism in OECD Economies, The OECD Manual on Tourism Satellite Accounts and Employment

SNA 2008: System of National Accounts


https://unstats.un.org/wiki/display/IRTSG

Eurostat (20xx) European Implementation Manual on Tourism Satellite Accounts


SEEA

http://unstats.un.org/unsd/envaccounting/seearev/

UN et al (2014) SEEA 2012 Experimental Ecosystem Accounting


Water

UNSD (2016) SEEA Technical note: Water accounting, Draft to UNCEEA
UN (2012) System of Environmental-Economic Accounting for Water. UN. Series F No. 100 (ST/ESA/SER.F/100)


Energy


UNSD (201x) International Recommendations on Energy Statistics (IRES)

GHG emissions

UNSD (2016) SEEA Technical note: Air emissions accounting, Draft for UNCEEA.


Solid waste


Country examples of integrating TSA and SEEA


Pilot studies

MST documentation

UNWTO – MST website [http://statistics.unwto.org/mst]


Miriam Blumers (Federal Statistical Office of Germany)

1. Overall structure and framing of SF-MST

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

   It might be helpful to give a brief definition of “tourism” itself. “Tourism is a social, cultural and economic phenomenon related to the movement of people to places outside their usual place of residence, pleasure being the usual motivation.” (UN 2010, p.1)

   The part on page 10 does not fit under the heading “What is sustainable tourism”. The part from “The ongoing interest in sustainable tourism” to “In broad terms, these milestone achievements highlighted the need to integrate advances for people, planet, prosperity, peace and partnerships.” would fit better under 1.2.3 “a history of measuring tourism”.

   The following part about the SDGs is about the objective of the SF-MST. It might be useful to add a heading “Objective of measuring sustainable tourism” or “Policy context”.

   However, all in all, the introduction is quite long (31% of the entire document) and the structure is partly not consistent: 1. Introduction, 1.3. Overview of the SF-MST, 1.3.1 Introduction.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

   Yes. While an overall accounting approach to all three dimensions would be desirable from a conceptual point of view, the approach taken in the SF-MST is pragmatic given the availability of concepts and data.

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

   Yes. However, the interplay with the endeavours to put together a set of indicators (carried out by the SDG sub group) is still unclear. Will this set of indicators – once defined – be included in the SF-MST? If yes, will it be used as an example or as a core set of indicators?

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

   Throughout the SF-MST useful extensions are often outlined. Here the further process of the framework is unclear i.e. are these extensions meant to indicate future developments of the SF-MST? Or is the intention to point out interesting additional points to be considered when implementing SF-MST?

   In general, we would consider identifying a core set from the abundant possibilities outlined within the SF-MST as very fruitful (while certainly being a challenging task).
We suggest including a sub-chapter on the concepts (i.e. territorial and residence principle) used in the SF-MST. Mr. Cesare Costantino elaborates on this topic in his paper “The demand perspective in measuring the sustainability of tourism with specific focus on environmental aspects” presented at the last Meeting of the Working Group of Experts on MST.

2. Employment aspects in measuring the sustainability of tourism

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the sub-group on Employment as well as the individual contributions of three experts to the Working Group meeting on this topic:
   - Canada
   - Cardiff Business School
   - GJASD International

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

3. Measuring the environmental sustainability of tourism

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

   In addition to the accounting for tourism related environmental assets and their use, it would be reasonable to involve the supply side. Accounting for tourism related environmental protection expenditure and the supply of environmental goods and services should be considered. To that effect, chapter 3.5 needs to be developed further.

   Furthermore, we wonder why material flows are not considered.

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

   Yes. However, certain knowledge of SEEA is needed and useful. It is understandable that the complex interrelations cannot be addressed in depth within the SF-MST.

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

   Tourism benefits from services of ecosystems. Ecosystems provide space and landscape features, enabling people to enjoy landscape views or undertake activities such as hiking (recreation benefits). The service usually involves investments in the ecosystems (e.g. for building walking trails).

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

   In general, the availability of data and the disaggregation of data will be the most challenging part.
4. Measuring the social sustainability of tourism

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism? You may wish to consider the main issues identified by the sub-group on the social dimension: “Statistical Tools to Measure Tourism from a Social Focus” as well as the individual contributions of three experts to the Working Group meeting on this topic:
- Argentina
- Italy
- Visit Flanders

4.2. What are the most important perspectives to consider in assessing the social dimension?

4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

5. Defining spatial areas for tourism measurement

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

6. MST connections to sustainable development indicators

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

*The SDGs certainly are a good occasion for determining a set of indicators on the sustainability of tourism and also a good reference framework.*

6.2. What are the priority themes for the development of indicators?

*In our understanding such a set of indicators should cover all three dimensions of sustainability in a rather balanced way. With regards to the indicators we suggest a pragmatic approach based on SF-MST and already existing standards, concepts and methods.*

6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

7. Other comments

7.1. Do you have any other comments on the SF-MST at this stage?
Mini Prasannakumar (Director, Ministry of Tourism, India)

1. **Overall structure and framing of SF-MST**

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

   **Comments:** There is need for specific measurable indicators.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

   **Comments:** There is need for specific measurable indicators.

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

   **Comments:** There is need for specific measurable indicators.

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

   **Comments/Views:** No specific comments.

2. **Employment aspects in measuring the sustainability of tourism**

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism?

   **Comments/Views:** Employment opportunities, Job security, adequate representation of local people in employment in tourism industry and safe working environment may be considered as key aspects concerning employment in measuring sustainability of tourism.

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

   **Comments/Views:** Adequate earnings and productive work, job security, equal opportunity and remuneration, social dialogue and representation etc. may be treated as the important aspects of decent works.

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

   **Comments/Views:** Employment in tourism industry involves a disproportionately high degree of Employers/ owners/proprietors, as well as own-account workers (selfemployed) i.e. those who work on contractual basis for a specified period of time with no formal employer employee relationship. Information on these entities is usually difficult to obtain and, from the employer’s point of view, they are considered an intermediate cost, and not as part of labourers. People come to tourism with varied backgrounds and professional educations and leave it for a range of other economic
activities. In view of these reasons, it is difficult to collect income, compensation, hours of work of persons employed and their conditions of work in the tourism sector from any administrative record.

3. **Measuring the environmental sustainability of tourism**

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

**Comments/Views:** Tourism is fully dependent on the natural resources of a destination like: wildlife, beaches, mountains, lakes, coastal zones, dunes, mangroves, rivers, estuaries, forests, wetlands etc. Without these natural resources, tourism does not exist in any destination. Man-made attractions have generally little to do with creating interest in visitors. Therefore, it is necessary to record and measure the current composition and changes in tourism related ecosystem assets for measuring the flows of ecosystem services so as to enable the policy makers to frame adequate policies to preserve the assets in a sustainable manner. Therefore, the ecosystem accounting approaches stipulated in the SF-MST, is relevant for measuring the impact of tourism on these ecosystems. iv. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

**Comments/Views:** Collection of data related to the environmental assets, its changes over time, measuring the condition of these assets over time etc. is a tedious job. Demarcation of the flows of ecosystem services to different users, including visitors, permanent residents of the area and others would be a difficult task.

4. **Measuring the social sustainability of tourism**

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism?

4.2. What are the most important perspectives to consider in assessing the social dimension?

**Comments/Views:** Host communities perspectives are to be considered as the most important aspect in assessing the social dimension of sustainable tourism.

4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

**Comments/Views:** The selected indicators (social connections and networks, community and individual levels of trust / tolerance, civic engagement and participation in Institutions and governance, corruption, subjective well-being etc of host communities and visitors) are sufficient to measure the social capital. However, it is very difficult to Collect data. Limited indicators are sufficient, instead of defining more indicators with non-availability /difficulty in collecting related data.

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?
Comments/Views: Collection of data on different aspects of social dimensions itself is very tedious. Moreover, bifurcation of these data as a consequence of tourism and non-tourism activity is a much more difficult task. Overlapping cannot be ignored.

5. Defining spatial areas for tourism measurement

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labeling of these levels suitable?

Comments/Views: Labeling are suitable which cover all segments of spatial area. However, within national, country specific sub national spatial area may be decided by respective economies.

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

Comments/Views: Administrative unit may be kept as first sub national level for comparison purpose. Within sub national level, visitor concentration may be the basis for further spatial bifurcation.

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

Comments/Views: Since the measurement is for sustainability of tourism, spatial area is to be selected according to the tourism importance. Therefore, the proposed approach is appropriate.

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

Comments/Views: There are some data that may seem relatively non-spatial in nature. For example, visitor perceptions, migrant labour movements and climate change indicators. Therefore the different spatial areas may be considered for different dimensions like economic, social and environmental according to the availability of data.

6. MST connections to sustainable development indicators

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

Comments/Views: Yes. However, non availability of data, difficulty in collecting available data, and non availability of proper methodology for measurement of the indicators are the constraints.

6.2. What are the priority themes for the development of indicators?

Comments/Views: Impact of tourism on Economical, social and ecological aspects are to be considered as priority themes.

6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

Comments/Views: Non-availability of data, difficulty in collecting available data, and non-availability of proper methodology for measurement of the indicators are the constraints. The methodology for measuring Sustainable Tourism should be focused on administrative data rather than Survey based data. Hence the indicators should be
chosen in such a way that they are available from administrative records. It would be difficult for a country like India to collect various data through surveys especially related to social and environmental dimensions of tourism on annual basis. The surveys would be very costly and time consuming.

7. Other comments

7.1. Do you have any other comments on the SF-MST at this stage?

**Comments/Views:** The methodology for measuring Sustainable Tourism should be focused on administrative data rather than Survey based data. Hence the indicators should be chosen in such a way that they are available from administrative records. It would be difficult for a country like India to collect various data through surveys especially related to social and environmental dimensions of tourism on annual basis. The surveys would be very costly and time consuming.
Raúl Figueroa (INEGI, Mexico)

1. **Overall structure and framing of SF-MST**

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

   The introduction provides a very appropriate context for the measurement of sustainable tourism, however, it is recommended to provide a more in-depth explanation of the role of SF-MST within all that contextual and reference framework that is mentioned throughout the introduction.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

   Yes, we are satisfied, because although we must see the sustainability of tourism as a single activity in which the different dimensions of tourism activity converge, the measurement of each of them is different, even from the definitions and basic concepts that are handled they are special of each dimension.

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

   Considering that the SF-MST does not intend to repeat the RIET and the CST: RMC, in chapter number 2 it would be advisable not to focus so much on manuals related to CST. Likewise, in this chapter it could be added that the identification of tourist establishments with ecotourism operations can be done through the use of geographic maps, which could allow us to locate those establishments that are close to the Protected Natural Areas and make them production account. Regarding employment, we consider it appropriate to include green jobs in Mexico’s tourism activity in chapter 4.

   Regarding chapter 3, it is intended that the measurement be made in physical units; however, as a complement, the measurement of monetary units can be suggested.

   In relation to chapter 4, reference is made to employment, as in chapter 2; considering it appropriate to be included only in this chapter. Likewise, it would be possible to include the production accounts that Mexico produces in the archaeological zones and in other zones or places considered as Cultural Heritage. In terms of population groups, it is very difficult to have such disaggregated information and also relate it to tourism activity.

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

   We believe it is appropriate, however, that these combined tables can be completed as a result of the compilation of environmental information in Chapter 3.

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

2. **Employment aspects in measuring the sustainability of tourism**

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the
as well as the individual contributions of three experts to the Working Group meeting on this topic:
- Canada
- Cardiff Business School
- GJASD International

Perhaps the most important and easy aspect to measure is decent employment linked to tourism activities.

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

The main challenges are the need to have a job survey that at this level of detail and also, that allows you to associate it with the tourism industries.

3. Measuring the environmental sustainability of tourism

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

Yes, although Mexico considers that the quantification of animal species is very difficult to have at a national level and it is much more complex to determine the part that is for tourist activities.

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

Yes, it is described it, however, emphasis should be placed on accompanying the experts in environmental economic accounts to ensure success in this connection.

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

It would be an important role, having well-identified tourist regions and that these are mutually exclusive. In the case of Mexico, many tourist destinations converge with each other and are not mutually exclusive, making it very complex to establish specific allocations to the tourist activity without duplicating and / or omitting some geographical areas of the country. Likewise, it must be considered that ecosystem accounts are not additive, just as satellite accounts are not.

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

The main challenge is the coordination with different institutions that generate environmental information and see in which units of measure they do it and under what temporality. In the case of Mexico, there are several institutions that collect environmental data and do so with different units of measure to those proposed in the SF-MST.

In the case of Mexico, the above is resolved through the creation of technical working groups, where all the institutions related to the sector are involved.
4. Measuring the social sustainability of tourism

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism? You may wish to consider the main issues identified by the sub-group on the social dimension: “Statistical Tools to Measure Tourism from a Social Focus” as well as the individual contributions of three experts to the Working Group meeting on this topic:
- Argentina
- Italy
- Visit Flanders

4.2. What are the most important perspectives to consider in assessing the social dimension?

4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

5. Defining spatial areas for tourism measurement

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

In general, we can say that levels are adequate; However, having information at all these levels is a pleasant challenge to face.

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

Each country must define which level should be its focus, since it is often subject to political issues and depending on the government in turn.

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

Yes, as long as tourist areas are well identified.

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

The challenges that Mexico identifies are budgetary to develop the projects, as well as the political aspects according to the government that is established in the country, as well as the interests of the rulers.

6. MST connections to sustainable development indicators

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

We consider them as good indicators, however, we must also consider the existing information and that UMWTO issues its opinion regarding its construction.
Likewise, Mexico considers that they are sufficient and should go according to the development of the statistics of each country.

6.2. What are the priority themes for the development of indicators?

6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

The main barriers are imposed by a political way in each of the countries, since based on the decisions of each acting government, it makes the budgetary allocation in the areas that they consider a priority.

7. Other comments

7.1. Do you have any other comments on the SF-MST at this stage?
Leonel Matsumane (Mozambique)

1. Overall structure and framing of SF-MST

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

R: For us Mozambique, the structure is clear but many times when you translate from English which is the official document language to Portuguese, it lose the context, so we suggest to share this in two languages (English and Spanish). We suggest also to include in the introduction the explanation of these three dimensions (Economic, Social and environmental) for better understanding of what we really are seeking to measure.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

R: The conceptual frameworks of MST satisfy us although it will challenge us to better organize ourselves in order to respond in appropriate manner these dimensions.

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

R: we think that out of these dimensions, we need political enforcement to have the leader engaged in MST. As we know, the MST structure requires involvement of other sectors out of tourism sector so, in this case becomes important to have any political-legal enforcement to have all other sectors engaged with this proposal.

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

R: is very important chapter as it provides an overview of what exactly we need to do to respond the three dimensions of MST.

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

R: no questions by now.

2. Employment aspects in measuring the sustainability of tourism

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the sub-group on Employment as well as the individual contributions of three experts to the Working Group meeting on this topic:

- Canada
- Cardiff Business School
- GJASD International

R: regarding the employment issues, it’s important to consider:
- Nationality (to assess job opportunity for local residents);
- Country of permanent residence (to measure in which extend we open opportunity for those foreigners who applied for other nationality);
• Gender (as one of the UN agenda is to promote gender equality especially in less developed countries).

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

R: for us as a country in the concept of decent work, we consider as important issues discussed by the employment sub-group such as working hours, social security and formality. In our country seems like the jobs in tourism industry are not formal and based on this we do not consider people with appropriated skills to do their jobs in specific areas.

It’s very important to have the ministry of labour of each country engaged in formalization of different job areas of tourism sector (tourist guide, bar man, etc).

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

R: special in Mozambique, the challenge on data collection regarding to employment in tourism industry is the registration of man power that each tourism business have. This lack of registration many times is related with low skilled people who in many cases are not aware of their employment rights resulting in job exploitation.

3. Measuring the environmental sustainability of tourism

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?  

R: in our point of view, the most relevant are there.

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?  

R: yes, it describes, but seems like we need to build awareness in people, managers and different players of tourism industry to have them engaged with environment preservation.

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?  

R: the ecosystem accounting approaches described in chapter 3 is very important although it’s very difficult to assess the areas proposed in the methodology. The 3 categories proposed (regulation services, cultural services and procurement services) in ecosystem services approach, will be very hard to assess in a country like Mozambique where we have 2700Km of coast line and many people sustain their lives based on ecosystem resources.

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?  

R: the main challenge is to measure the conception of the tourism sector in sector like water, energy, communication, controlled by other sectors.

4. Measuring the social sustainability of tourism

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism? You may wish to consider the main issues identified by the sub-group on the social
dimension: “Statistical Tools to Measure Tourism from a Social Focus” as well as the individual contributions of three experts to the Working Group meeting on this topic:
- Argentina
- Italy
- Visit Flanders

R: the introductory text of chapter 4 on the social dimension covers all relevant aspects of this dimension. It’s important to notice that the 4 approaches proposed by the social sub-group complement and brings a clear understanding on what is expected from us.

4.2. What are the most important perspectives to consider in assessing the social dimension?

R: when we look to social dimension, its important out of what the group discussed, the community ownership of the projects. Many projects comes in name of local communities but seems like there are imposed to accept what the foreign organizations want and can cause any social problem locally between the local leaders and their communities.

4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

R: the social dimension cover many aspects that can be different country by country, region to region or continent to continent but in our point of view the important aspects of the social dimension which can guarantee international comparability of data are included in this chapter

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

R: in case of Mozambique is very difficult to collect data on social issues as many of our communities are nomads. They depend mainly on the seasons of the years as they farmers. When there is a lack of region they migrate to other region with good conditions. In this case sometimes is difficult to measure local people employed in tourism projects.

5. Defining spatial areas for tourism measurement

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

R: the proposed scales have to be adjusted according the common understanding. For us a regional scale it’s like group of country’s (RETOSA-regional Tourism Authority of southern Africa which includes Mozambique, Zimbabwe, Zambia, Malawi, Swaziland South Africa, and Angola). For administrative unity’s, we consider provinces or districts. For other levels we totally agree.

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

R: in our point of view, no.

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?
R: **this approach is very common in different countries so, based on that we do not consider other approach.**

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

*R: for countries like Mozambique it’s a challenge to collect information on sub-national level as the communication between these two levels is very weak. The sub-national do not have people with appropriated skills to deals with statistics issues resulting many times in non-reliable statistics.*

**6. MST connections to sustainable development indicators**

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

*R: Yes, in our point view the SDGs 8, 10 and 14 are very representative in terms dimensions to measure the sustainable tourism if when look to its specific goals (8.9, 12.b, and 14.7)*

6.2. What are the priority themes for the development of indicators?

*R: the priority themes on this indicator are:

- 8.9.1. contribution of Tourism to GDP;
- 8.9.2. Number of employment’s (divided by gender);
- 12.b.1. Number of tourism strategy’s related to sustainability and action plans implemented as well.*

6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

*R: The one of the barriers that we see in case of Mozambique is that many of indicator that need to be putted in place to assess SDG are related to other sector out of tourism industry. To solve this problem, we need more coordination internally and build awareness to have all other institutions engaged with SDG.*

**7. Other comments**

7.1. Do you have any other comments on the SF-MST at this stage?
Patrícia Seguro (Turismo de Portugal)

Disclaimer: The following comments are constrained to the Portuguese experience in compiling the following satellite accounts: tourism satellite account (TSA), the Environmental goods and services sector (EGSS) account, the Environmental protection expenditure accounts (EPEA), environmentally related taxes and fees, Physical energy flow accounts (PEFA), Air emissions accounts (AEA) and economy-wide Material flow account (EW-MFA). Portugal does not compile the Water flow account neither the Solid waste account.

Comments on Chapter 2 - Accounting for the economic dimension

2.3.2 Accounting for characteristics of tourism industries

It is important to stress the idea that being tourism a “demand side activity”, whenever tourism characteristic activities are the reference (as potential productive agents of tourism, as in TSA Table 5-Production account) a broad concept of tourism is implicit.

Total demand from visitors is not produced exclusively by tourism characteristic activities and total production of tourism characteristic activities is not demanded by visitors. This is a “limitation” of the “tourism characteristic activities” approach, but, nonetheless, it is a fair approach since it sums up the core of tourism. Afterwards, if actual tourism production is to be considered, as TSA-Table 6- tourism ratios by activity will have to be considered.

To compile table 6, after the demand level is established, hypotheses have to be made to allocate the counterpart of tourism production across the several activities. This implies a first level of arbitrariness since, in fact, there is no data source about “which industries visitors go to”, only which products they buy. Taking the restaurant activity within the TSA as an example, there is no set of establishments/entities associated to tourism; only a certain amount of production is considered as touristic. Then choosing the “environmental” activities/companies among those will bring another level of arbitrariness. The use of a business register would not solve this issue.

2.3.6 Extending the TSA to record environmental transactions and eco-tourism operations

Within chapter 2, on the economic dimension, it is mentioned several times that an establishment approach of the TSA industries/tourism activities can solve part of the needs for the sustainability measurement and indicators.

If not the establishment level, the industry/activity/company level is, in fact, apparently, a way of merging tourism and environmental statistical standards and answer to the SF-MST information needs. This is true in what concerns the environmental transactions, at least those that are derived by industry and from a bottom-up approach, departing from the company/establishment information (as it is the case of those transactions related to payments of environmental taxes) and the physical flow accounts (energy flow and the GHG emissions).

In the case of the environmental transactions within the Environmental goods and services sector (EGSS) accounts, it is not expected that a significant number of entities from its universe falls under the tourism characteristic activities. Thus, even though the intersection of EGSS and TSA is possible in theory, in practice this intersection will probably be nearly empty.

Extending the TSA through the classification of eco-tourism operations will depend on the existence of information on those establishments/operations as, for instance, the existence of some kind of “environmental certification”.

Furthermore, the different level of detail of industry classification between the TSA and the environmental statistical standards is other potential issue. For instance, Accommodation and
Restaurants, within the environmental standards are always aggregated; also transports don’t refer only to passenger transport.

2.4 Measuring the employment aspects of tourism

Some notes:

Like Canada: from a measurement perspective, the employment aspect in sustainable tourism should be limited to employment in the tourism industries.

Green jobs: In Portugal “green jobs” are presently being assumed as the employment, measured as FTE, compiled within the EGSS account. It refers to the FTE associated with the EGSS production aggregate by NACE and environmental domain.

Comments on Chapter 3 - Accounting for the environmental dimension

3.3.4 Accounts for GHG emissions for tourism industries

Independently of the difficulty of the estimation, Households should also be mentioned as producers of GHFG emissions. The GHFG emissions account predicts households as “emissions’ suppliers” and the value refers almost entirely to “own transport”. In a tourism context, travels by car are significant. Also secondary houses are exclusively for tourism use (by convention within the TSA), so an amount of emissions related to accommodation service consumption of these houses would also be possible, in theory.

The reading and understanding of the absolute values of emissions estimated are somehow hermetic. The information would be more interesting if compared with the total economy: a percentage of emissions of the tourism activities would fit that purpose.

Page 31, footnote 13, the link is not working.

Comments on Chapter 6 - MST connections to sustainable development indicators

From our perspective, the UN SDGs are a useful framing for determining a set of indicators on the sustainability of tourism, since this is a complex issue, difficult to summarize in three indicators. Nevertheless, the existence of a worldwide framework is important for international comparisons.

The priority themes for the development of indicators are population (namely gentrification) and environment.

From a statistical point of view, the main barrier to the collection of data to derive indicators is the definition of sustainable tourism industries in statistical terms. What needs to be put in place to support the use of indicators in decision making processes is, besides the existence of resources to collect data and compile statistics, communication. TSA still has a complex language, difficult to communicate to general users and politicians.
I know the below paragraphs are more to theoretical, but I would like to share our point of view regarding "sustainable employment"

1. The MST initiative considers three dimensions of sustainability (economic, social and environmental), where employment is a key consideration of the social dimension.

   "Human Capital" is of significant relevance in measuring the sustainability of tourism.

   "Decent Work" is very important but is a question of relativity, while "Green Jobs" is equally important but what about "Other than green jobs". For employment sustainability, green and non-green jobs need to be considered together.

   One way to increase the sustainability of employment is to help people improve their skills, so that they can progress from short-term, entry-level jobs to better jobs.

2. Employment aspect in measuring the sustainability of tourism

Regarding employment in the Saudi tourism industry, ‘food services’ sector accounts for the largest share of tourism-related employment, employing 48.7% of the total workforce in 2016 (1). It is important to note that the total output of a tourism-related industry (food and beverages services) usually exceeds consumption by visitors, as some of the output of the industry is purchased by non-visitors. For example, meals in restaurants, visitors’ purchases will usually account for a portion of the total number of meals produced. The output of food services will involve substantial sales to non-visitors. Hence, the total employment of tourism-characteristic industry does not necessarily equate to the employment generated by tourism demand. Therefore, it is necessary to use an allocator to approximate more closely the levels of employment generated by tourism sector. This is dealt by the use of the tourism ratio or the tourism value added industry ratio (2)

This method of using the tourism value-added industry ratios involves an assumption that the employment generated by tourism in each industry is in direct proportion to value-added generated by tourism (3)

The key challenge is, "How to achieve a continuous growth in sustainable tourism jobs, if there are skill shortages.

a. Green Jobs
   ILO defines green job as one that provides decent work and that contributes to:
   - Improving energy and raw materials efficiency
   - Limiting green-house gas emissions
   - Minimizing waste and pollution
   - Protecting and restore ecosystems
   - Supporting adaptation to the effects of climate change

   Green jobs can be distinguished by their contribution to more environment-friendly processes. Tourism does not directly produce goods or services that benefit the environment, but a tourism job could follow a more environment-friendly process. A key issue is to identify a measurement baseline. Should we be measuring the impact of the job’s existence? If the existence of the job allows for a certain level of tourism activity, should the environmental impact of the tourism activity be considered when measuring how green the job is?

b. Human Capital (Availability of Skills and Experience)
   This is vague. Should the focus be on whether the jobs contribute to the skills/experience of the person in the job, or should it be on how the level of skills and experience of those in a given occupation compare?
There is a European study that may illustrate a way to measure this. It was conducted by the European Centre for the Development of Vocational Training (CEDEFOP). That study examined skill levels across the entire labor force. It determined how many individuals had skills mismatches using four factors: underqualified, overqualified, underutilized, and obsolete (skills).

c. Decent Work
Decent work is important but is a question of relativity. This concept is new for their application in the framework of the tourism industries.

3. For sustainable tourism employment, KSA's focus has been on issues related to the following:
   - Employment in urban, rural and coastal areas of the Kingdom’s tourism sector
   - Employment in the Kingdom by 13 provinces (regions) of the Kingdom
   - Employment by gender (male – female)
   - Aggregate employment

One of the objectives has been to achieve sustainable aggregate employment in the Kingdom. The main issues are related to their measurements.

4. Key issues in measuring employment in the context of sustainable tourism

An approach to the organization of data and the relevance of different concepts do differ between national and local scales, depending upon the stage of economic development, the relative contribution of tourism to the economy and tourism awareness at the national and local scales.

The data quality issue is there for Saudi Arabia, which needs to be resolved, but despite of all shortcomings, tourism employment statistics classified by 11 economic activities “Establishment Survey”, is published by the General Authority for Statistics. Currently, MAS Center of SCTH is the only Government agency publishing tourism statistics for the Kingdom.

Regarding the sustainability in tourism employment measurement, more efforts are needed to enhance the quality of statistics.

Available measurement frameworks, statistical standards, other references on tourism employment sustainability

- ILO, Guidelines concerning a statistical definition of employment in the environmental sector.
- UN, IRTS 2008 Compilation Guide.
Fernando Cortina (INE, Spain)

From the INE of Spain we have no additional comments to those already expressed on other occasions.

Some of the questions are of a political nature and should be the ministries that contribute their analysis and needs.

Other questions are of a more general nature, especially those that refer to the collection of data, and in this case the main problems are those related to access to information, availability of data, access to administrative records, loading of information for informants, etc.

We would like to influence the need to define more precise indicators, in which the methodology for its calculation is clearly defined in order to establish comparisons at the international level.
Nancy Steinbach (Statistics Sweden)

I have looked through the chapters related to the SEEA and as it is still in early stages I can only provide some basic thoughts.

1. Chapter 2.3.6 about extending the TSA to record environmental transactions and eco-tourism operations à As you have a specific chapter 3 dedicated to the SEEA, perhaps this chapter 2.3.6 could be moved to chapter 3.5 and expanded upon? The SEEA describes the environmental goods and services sector and could use some additional thoughts on how to measure the eco-tourism part (so I’m hoping that your framework can help us improve our statistics).

2. Statistics Sweden has published a pilot study on the link between demand and SEEA, perhaps Cesare can find some of those results helpful: https://www.scb.se/contentassets/e5cd0bc363124d99a2c1b3cda18a8117/mi1301_2016a01_br_mi71br1802.pdf

3. About the asset accounts – I assume that GIS will be required to delimitate the areas of interest and a range of data sources to go with that. I would be beneficial if the chapter could describe this.
1. Overall structure and framing of SF-MST

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

R: The introduction is very good, it provides a general description of SF-MST, what are its purposes and its scope.

I would simply make a modification when talking about what should be considered Sustainable Tourism, reference is made to Stable Employment, I think it would be necessary to add Stable and Decent Employment.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

R: Completely satisfied, this facilitates interpretation and broadens the conceptual vision. Even anyone who isn’t related to the subject, could get a clear and general vision.

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

R: The chapters cover the economic, environmental and social dimensions.

Particularly in the case of the environmental dimension when establishing the measurement of the use of energy, the distinction in the table between renewable and non-renewable energy is important. In the case of Uruguay, 100% of the energy matrix is renewable and there is legislation that forces new constructions to use solar panels for certain services, with which the measurement of self-generated energy is important, although very difficult to cover.

In this new version some of the observations made at the last meeting of the working group in October have been saved, but I believe that the methodology that harmonizes the measurement of the social dimension is still somewhat diffuse. This dimension has many fronts (vulnerabilities, culture, equity, gender, employment, etc.) and it is not easy to unify criteria for the different realities and levels of progress that each country has. I think we should reach a consensus on a minimum of parameters that this number should cheapen.

In addition, there is no mention of a social problem in many countries that live on tourism, the sexual exploitation of children and adolescents. The need to eradicate “Sexual Tourism” should be visible if we want sustainable tourism.

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?
2. **Employment aspects in measuring the sustainability of tourism**

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the sub-group on Employment as well as the individual contributions of three experts to the Working Group meeting on this topic:

- Canada
- Cardiff Business School
- GJASD International

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

*R*: Key aspects related to employment relevant to measuring the sustainability of tourism:
- Formality
- Temporary employment
- Training / Education
  - Gender Equity in activities
  - Number of employees with some disability.
  - Salary / Position / Gender
  - Medical losses
  - Number of workers hired / working hours
  - Quantity of Employment generated by the green investment.
  - Employment outsourced to companies dedicated to the care of the environment (recycling, renewable energies, etc.)

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

*R*: All aspects that are not associated with formality are difficult to measure. The training of employees, the link with the environmental part, the inclusion.

3. **Measuring the environmental sustainability of tourism (this has already been answered)**

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

4. **Measuring the social sustainability of tourism**

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism? You may wish to consider the main issues identified by the sub-group on the social dimension: “Statistical Tools to Measure Tourism from a Social Focus” as well as the individual contributions of three experts to the Working Group meeting on this topic:

- Argentina
- Italy
- Visit Flanders
4.2. What are the most important perspectives to consider in assessing the social dimension?

4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

5. **Defining spatial areas for tourism measurement**

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

R. Yes it is

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

R: Perhaps the environmental dimension is more relevant at the Sub national level. Exite Protected Areas and Ecosystems that are easier to abolish from a subnational than national perspective.

In the case of the evaluation of ecosystem services above all, they become more relevant if the context where the ecosystem is located is analyzed and the services it provides are closely related to a particular community. Social and economic dimensions tend to be more generalized and can be understood from a National perspective. Of course there are always different situations and in that sense it is that the possibility of a measurement at different levels is so important.

The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

5.3. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

6. **MST connections to sustainable development indicators**

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

R: I believe that the UN SDGs are insufficient for a framework of tourism sustainability. We can not ignore that tourism is an industry that transcends a set of activities and that, therefore, sustainable tourism must be part of each of these activities. In addition to the characteristic activities of tourism there is a large network of activities that sustain tourism and that in turn tourism provides sustenance. It is one of the largest value chains that can be found in the economic activity and in each link of the chain value is added to the final product.

For this product to be sustainable, each link must be sustainable.

6.2. What are the priority themes for the development of indicators?

R: No comment
6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

R: No comment

7. Other comments

7.1. Do you have any other comments on the SF-MST at this stage?

R: No comment. Simply congratulate for the result that is coming and thank everyone’s efforts to obtain a document that will serve as a guide for all of us who work in the visualization of sustainable tourism.
If we are analysing tourism as a multidimensional activity we are obliged to avoid duplication of tasks, and it is desirable to involve departments dealing with official statistics for tourism (Eurostat, National Statistical Institutes, UNWTO,…), as well as those dealing with official statistics related to the Environment, Culture, Education, Employment and others at International, national and regional level.

There are some very relevant aspects affecting directly the sustainability of Tourism and even Sustainability in general terms where there is still path to improve, but that are under the competency of other departments. For the following aspects, we are obliged to collaborate if our aim is to get an integrated approach of sustainability:

- **Water consumption**: the provision of water to the different consumers (households, retailers, industry …) needs to be quantified for the billing of the services. This information is even individualised by each customer. However, this data is usually in private hands that are not properly approached for the provision of the necessary aggregated information for public policy purposes.

- **Energy consumption**: similar situation can be applied to the data about energy consumption necessary for billing different typologies of customers. Concern about energy price and consumption is not an exclusive concern of the tourism sector: aspects as energy poverty and competition policy share the same need for data. In addition, the source of renewable energy is already quantified for other policy purposes (usually environmental). Official statistics bodies could benefit from this already existent data, that is, at its origin, very detailed located in the territory.

- **Waste generation and management**: again, this is usually a service provided to different customers for which they need to pay a price (sometimes a public price), but for which there is a need to know the amount and type of waste generated by each locality for the proper management. The correct management and recycling of waste is not only a concern for the tourism sector, so there is here also the possibility of joining forces with other sectors lacking proper information for management (local finances, agriculture, industry…) for the official statistics to prioritize this correct and territorially disaggregated information.

- **Education**: Tourism is not clearly integrated in the International Standard Classification of Education (ISCED), therefore, there is no a specific classification of post-compulsory education (vocational training, University, etc…) of tourism to be compared in a homogeneous way with the rest of sectors.

- **Quality (decent) jobs** and its link with education statistics: Tourism has traditionally been identified as supported by non-skilled workers, but this cannot be monitored and changed by policy actions if we do not have sound statistics to sustain them. If there is a need to assess if the tourism workforce is under or over skilled, we need adjusted Education statistics and we must be able to identify whether tourism workers have specialized education in tourism.

Difference of speed is applicable to official statistics bodies, where measurement of new situations is usually taken into account after the first concerns have arisen. New actors are gaining positions and therefore, monitoring their implications in the tourism sector becomes also more difficult. In this sense, there are already on the table some issues where the official statistics needs to start working on definitions, designing methodologies and (perhhaps) implementing regulation. Some of those are:
- **Digital platforms** and the so-called “sharing economy”. Developing common metrics to measure supply and demand to understand their role in the whole system of tourism and their impact on the territories and communities, to address the impact on the employment, to work towards a clear definition and differentiation between private and commercial hosts.

- **Big Data**: Some big data solutions conflict with traditional data analysis, and there is a need of building consensus between both sources of information. Budgetary considerations, as some private stakeholders that are Big Data generators (mobile phone enterprises, OTAs, digital platforms,…) had created a business model from the release of their data.

- **Accessibility**: Definition and measurement of variables related with accessibility and inclusive tourism. The measurement of accessibility for tourism resources has been a difficult task to undertake, given the lack of official sources. The information available is the one provided by private organization of disabled people, which in many cases even provide a directory about accessible tourism resources. Collaboration with these organisations could help to improve the official measurement of inclusive tourism.

- **Certifications**: Quality certification and standards definition and statistics. As it is the case for accessibility, the information available is the one provided by the private organisation, but differently as with the previous case, the access to this information is not always easy.

**Comments more directly linked to the sub-national scale**

From our point of view, delineating sub-national level tourism areas requires the application of the management criteria. The statement “you cannot manage what you cannot measure” should be the basis for this concern.

The challenge of the territorial dimension for the elaboration of the indicators is directly related with the issues affecting different government levels.

At the global and country level aspects such as global warming, climate change, CO2 emissions, and Sustainable Development Goals commitments are priorities, so there must be a system of reliable and sound statistics to deal with these issues. In this respect UN Statistical Division and UNWTO with the Measuring Sustainable Tourism initiative are doing the right job.

In the case of most European Regions, having full competencies in tourism, the available statistics or indicators must be able to answer questions like:

- Is tourism a net contributor to sustainable development?
- Compared to other industries or the whole economy, how resource intense is tourism?
- Is my economy too dependent on tourism?
- How is seasonality affecting the quality of jobs?

For local destinations the questions to be answered are:

- Is Tourism affecting any valuable ecosystem?
- How does tourism compare to alternative uses of land?
- How happy is the local population with the flow of tourists in peak season?

It is very important also to identify the real need of information of the different spatial levels. It needs to be a balance between the cost and the utility of the final system. In this sense, the role of freely available official data is crucial.

Other relevant aspect to take into account, are the real competencies in terms of tourism policy at each government or territorial level, because depending on them, then the requirements for information will be different.
If a destination does not have competencies in terms of tourism policy, then the elaboration of, for example, a TSA in order to include its magnitudes in the measurement of sustainability will not make sense, and then we could use some indirect measures in order to understand the economic importance of tourism, and not a fully integrated account based system of tourism statistics.

Based on our experience on NECSTouR and MITOMED+, we can extract some of the main concerns that can shade some light for the identification of the key issues to consider in the development of sub-national level data sets for measuring the sustainability of tourism.

- NECSTouR and its indicator Working Group: 37 strong European Regions have been working on the identification of needs within the European statistical system, the need of integrating economic, environmental, cultural and social dimensions within the tourism sector data and the need of maintaining this data in a continuous manner in order to establish trends. In addition, within this Working Group, it has been identified the relevant role of official statistics, methodologies and definitions in order to have a rigorous and homogeneous system allowing a sound benchmarking.

- MITOMED+ Interreg project: Andalusia, NECSTouR and Tuscany Region are partners of this project as well as of the Platform of Smart Specialisation for Tourism. 15 pilot destinations through the Mediterranean Europe are testing a homogeneous system of indicators for their integration into the decision-making process and empowerment of tourism stakeholders and destination managers.

**Design of a system of indicators sustainable over time**

Using jointly defined methodologies between data producers and data users. The need of having a unique system of indicator has been identified through all the consultations and working groups as a priority.

Extensive work has been devoted to the design of these complete systems of indicators; therefore we intend to make use of already existing advances in this respect.

Worth mentioning is the work of the UNWTO: “Statistical Framework for Measuring Sustainable Tourism”, even though at the moment significant advances are only clear for the environmental sustainability of the Tourism Sector.

This document identifies the aspects necessary to measure tourism environmental sustainability that have already been worked for the development of System of Environmental Account. This framework will help the compilation of data and figures more homogeneous.

**INSTO** initiative proposal does not define nor endorse specific indicators but instead delineate more generic issue areas that need to be monitored such as Seasonality, employment, Destination economic benefits, Governance, local satisfaction, energy management, water management and waste management.

**ETIS** initiative endorsed by DG Grow that finally provided a toolkit for 2016 was an important step forward, but, after the 2 pilot experiences where more than 100 destinations joined, we have not seen a real follow up by the European Commission. In addition, ETIS has not been nor endorsed not supported enough by the European Statistical System, and it would be desirable a joint effort in this respect.

The system of indicators claimed by the sector is not only needed for designing policies but also for monitoring and follow up of the policy actions.

In this system of indicators, not only the economic dimension must be integrated, but also the environmental, and especially the social one, given the interest shown in this respect.
Reconciliation of producers and users of data work

This is another priority expressed by European Regions, as it is perceived a distancing between producers and users of data. It is important to match those issues included in the political agenda (like sustainable and inclusive tourism) to be integrated in the statistical priorities like the measurement of accessibility.

Working together with Eurostat and the European Statistical System can be positive in including some issues at the top of the political agenda for tourism such as sustainability, accessibility and quality of jobs for their inclusion in the official statistics priorities.

Therefore collaboration (like data gaps analysis, specific events or working groups) of producers and users of statistics are very useful for identifying needs and best practices in the measurement of this specific topics, such as sustainability, accessibility, and also for others like the measurement of the so called collaborative economy, residents’ attitudes towards tourism, big data... in order to provide the policy-makers with policy relevant indicators that are statistically based.

All the stakeholders consulted have also identified as very relevant to implement specific actions towards the coordination of information produced for measuring sustainable tourism at different geographical level (European, national, regional or local).

Provision of skills and capacity-building

These activities should be directed for the provision of skills and capacity-building for different stakeholders: private sector, destination managers, public officers, data producers...

For the private sector these specific skills could be focussed on how to take decisions based on data: georeferenced information, Revenue Management, Search Analytics, market analysis, …

For destinations managers, DMOs, public administration officers skills like how to use indicators and statistics for enhancing tourism sustainability performance, how to manage, how to monitor and how to design policy actions based on data.

For data producers the skills provided will be related to learning to make indicators audience-relevant, skills for results presentations, elaboration of relevant analysis based on data extracting and presenting relevant information for the end user,…
Inmaculada Gallego (SAETA)

The territorial vision is essential in the measurement of sustainability; tourism is an essentially territorial activity, the space functions as both the medium (supply of goods and services, consumption of renewable and non-renewable resources, mobility, etc.) and the attraction at the same time, which generates a variety of positive and negative impacts.

Generally, determining context-specific policy responses is most meaningful at finer spatial scales. The need to consider sustainability at finer spatial levels is evident in the almost complete focus on destinations in the conceptual and policy work on sustainable tourism (SF-MST – 5.4).

In SF-MST (1.2.4) it is considered that annual data mask the relevance or impact of the pressure of tourism demand at certain times of the year and it is necessary to incorporate the temporal vision. In the same way it is essential to incorporate the territorial vision, since the national data mask the different tourism realities (coastline, city, interior, natural parks, etc.) and therefore their results as averages do not offer a realistic view of the situation and therefore make it difficult to make sound decisions.

The development of the concept of sustainable tourism over the past 25 years has had a clear and direct focus on the sustainability of tourism activity at a destination level as distinct from considering the broader sustainability of tourism at national or global levels (SF-MST – 5.1).

Relying on national averages is often likely to be misleading and ignore important variations among different areas within a country (SF-MST – 5.4).

In Andalusia we have been working on the measurement of tourism sustainability at two territorial levels: Regional and municipal. Below, the projects developed are briefly described:

Creation and implementation of a System of Indicators of Sustainable Tourism Development and synthetic indexes for Andalusia that responds to the demand of the General Plan for Sustainable Tourism of Andalusia 2014-2020 to have a system of indicators that makes it possible not only to develop situation diagnoses, but also to monitor and evaluate results, to detect deviations and re-orient tourism policies if necessary.

+ information: http://www.turismoandaluz.com/estadisticas/sites/default/files/Sist_Indicadores_1.pdf

Andalusia also leads the working group on indicators in NECSTouR (Network of European Regions for Competitive and Sustainable Tourism) where 37 European regions have worked on the identification of needs within the European statistical system, the need to integrate the economic, environmental, cultural dimensions and social data within the tourism sector and the need to maintain this data continuously. In addition, within this Working Group, the important role of official statistics, methodologies and definitions has been identified in order to have a rigorous and homogeneous system that allows solid comparative evaluation.

+ information: http://www.necstour.eu/working-groups/Indicators

We are also active members of INRouTE (International Network on Regional Economics, Mobility and Tourism) whose contribution has focused on the preparation of the document “A Closer look at Tourism: Sub-national Measurement and Analysis- Towards a set of UNWTO Guidelines” which defines methodological aspects for the measurement of tourism at the sub-national level.
On the other hand, we participate in MITOMED+ (Models of Integrated Tourism in the MEDiterranean Plus) that belongs to the Interreg MED European Projects and aims to increase knowledge and social dialogue in relation to the development of sustainable and responsible maritime and coastal tourism.

Among the different tools that are used to achieve this objective, it is worth highlighting the measurement and monitoring of the sustainability of tourism activity and its economic, social and environmental impacts and consequences through a system of indicators developed at the municipal level.

As a result of this experience, the key aspects to be taken into account in the measurement of tourism sustainability at the sub-national level, both from a conceptual and methodological perspective are discussed below. We also include in the last section of this document those aspects that should be taken into account in future developments of the SF-MST document.

1. **Key aspects from the conceptual perspective:**

   - **When defining the concept of tourist destination, we must be aware of the separation that exists between the perception of tourism demand and the defined spatial levels, which are based on administrative limits to which statistical production and the dissemination of results is linked. In this way, the delimitation of the different spatial scales is intimately related to the administrative structure in tourism management.**

     *Finding a pathway forward will require reconciling the general motivation of statisticians to provide data based on administratively defined spatial boundaries and the reality that the spatial areas of most relevance for the analysis of sustainable tourism do not conform to these boundaries. There is thus a balance to be found between feasibility on the one hand and relevance on the other … (SF-MST – 5.6).*

   - **Territorial delimitations must be linked to management, since this should be the ultimate goal of any measurement.**

     The measurement systems should be designed to support the decision-making of tourism managers. Therefore, when establishing coherent spatial limits, it is necessary to take into account territorial competences in terms of tourism policy, an aspect that should also be considered in the criteria for defining sub-national spatial areas.

     Although it is necessary to develop a nested set of spatial areas for the organization and aggregation of statistical information on tourism (SF-MST-5.5), in no case should we lose sight of their analytical and management objective.

     *From a statistical perspective, the methodological challenge is to develop the structure and tools to support providing relevant information for policy and analysis at the appropriate spatial scale (SF-MST – 5.3).*

     *There are commonly different decisions made at national levels compared to regional and municipal levels and hence there are different types of data that are relevant (SF-MST – 5.4).*
Providing data at a spatial scale that is currently most feasible but which is not relevant for decision making and analysis, would not represent a good return on investment. Nonetheless, to the extent that the provision of data on the basis of administrative areas is relatively more tractable it is then important that these spatial areas retain an important place in the proposed structure. (SF-MST – 5.6).

- The six spatial levels proposed in the SF-MST do not include territorial groupings that are customary and of special relevance due to their own nature and differentiation from the rest, such as groupings of municipalities (e.g., tourism areas: Costa del Sol) or groupings of areas of different municipalities (e.g., Nature Parks).

The following terms are applied in the SF-MST:
- Global – referring to all countries and marine areas.
- Supra-national areas – referring to groupings of countries.
- National – referring to countries.
- Regional – referring to the level of administrative unit directly below the national level (corresponds to the NUTS 2 level in the EU territorial classification scheme).
- Municipal or city-region – referring to the level of administrative units corresponding to localised but relatively large populations.
- Local – referring to the areas or zones within a given municipality that exhibit particularly concentrations or clusters of commonly purposed or aligned activities and businesses. It is not expected that administrative units would be defined at this spatial level. (SF-MST – 1.3.4)

2. Key aspects from the measurement perspective:

Taking into account the current reality, it would be hardly realistic to expect the sub-national tourist destinations, especially at the local level, to be able to apply and develop TSA and SEEA methodologies, or for the national methodologies developed in this area to offer the territorial breakdowns necessary for tourism policies, many of which are of sub-national competence.

Territorial breakdowns that are based on a national operation (top-down approach) are appropriate for ensuring that homogeneous information will be available for all the territories and that they will be comparable among themselves and consistent with the estimates for the Nation as a whole, but they present two major drawbacks:

- On the one hand, the specific characteristics of each territory are not taken into account, which does not make it possible to adequately represent their structure, limiting the possibilities of further research and analysis of results.

- On the other hand, the harmonizing of sources implies the loss of information available in each territory, and therefore observations that may be relevant for one territory may be meaningless in another or in the national set.

Therefore, we propose that the Group of Experts on Measuring the Sustainability of Tourism (UNWTO) develop a specific line of work for the measurement of sustainability at the sub-national level based on the creation of simple and compound indicator systems as a first step, understanding this as a process that in continuous evolution, in which any advance in definitions, methodologies or statistical and/or/documentation tools should be integrated continuously for its improvement, working towards more complete and complex systems.

Below are the main aspects to be taken into account in the development of these indicator systems are detailed, based on our experience:
• Clearly defining the objective, the territorial and temporal scope of analysis and the user profiles for which it is intended.

The extent of sustainability will be dependent on the time horizons being considered, the scale of analysis (e.g. local communities or countries), the perspective of the analysis (local business, government official, visitor) and the set of values that are applied (SF-MST – 1.2.1).

Decisions about the appropriate frequency of data collection and reporting should be based on the relevant policy and analytical questions and the available resources (SF-MST – 1.2.4).

• Part of the success in ensuring that a system of indicators is actually used is its adaptation to the end users and the presentation of the results through a friendly and intuitive environment, in such a way that its users do not require specific training.

Many forms of combined presentations are possible depending on the focus of communication and the range of data available. The data items included in the combined presentations should be of relevance to policy makers … (SF-MST – 6.2).

• Taking advantage of existing resources and their continuity over time. In this respect, the involvement of the official statistical bodies takes on special importance (SF-MST - 1.4.2 The role of national statistical offices in implementation).

It is recommended that initial work on the compilation of SF-MST accounts focus on the use of currently available data rather than considering the development of new data sources (SF-MST – 1.4.1).

As for all statistical frameworks, the SF-MST is designed to be implemented on an ongoing basis to provide a consistent and coherent picture of sustainable tourism over time …. one-off studies do not provide a sufficient base for ongoing decision making (SF-MST – 1.2.4).

The official statistics may be applied at different scales, in particular in the context of geo-spatial statistics and the development of national spatial data infrastructure (SF-MST – 1.4.2).

Their legal mandate may often facilitate access to data sources that are unavailable to others (SF-MST – 1.4.2).

• Evaluating the fact that the cost of generating specific information that cannot be obtained from other sources must be assumable and reasonable, while always keeping a favourable relationship between said cost and the volume, quality and usefulness of the information obtained.

The selection of which components of the SF-MST should be the focus of measurement should be driven from two perspectives. First, from the perspective of users of information where the question of relevance should be paramount (…). Second, from the perspective of data providers, the question of feasibility will be a fundamental question (SF-MST – 1.4.1).

• Defining a set of basic indicators designed for comparability between destinations and another group adapted to the specific reality of each destination to be measured, generating and managing the information that it considers relevant for its decision making.
The implementation of the SF-MST does not imply that every economic, environmental and social variable needs to be measured at all scales, from local to national level. Further, the choice of scale at which the SF-MST is applied might vary depending on the topic of interest and the way in which the data may be used in decision making (SF-MST – 1.4.1).

(...) the ambition should be that the information set compiled is both appropriate for the spatial level of analysis and use, and coherent with information at other spatial levels (SF-MST – 5.1).

(...) it will be important to understand that the nature of the policy or analytical question will be different at different scales and hence the type of information that is needed at different scales is likely to be different (SF-MST – 5.1)

- In any case, **consistency with national/international definitions and methodological frameworks** must be ensured.

Regular and reliable information on these types of indicators is best provided by a statistical framework since it ensures consistency in definition of indicators over time (including in the choice of measurement units), the coherence between different indicators and the ability to compare indicators among destinations, regions and countries (SF-MST – 1.4.3).

3. Key aspects to take into account in the future development of the SF-MST document:

- Integration of **new measurement tools** that facilitate obtaining territorial data: **Big data**. This also entails normative work for conceptualization and measurement that tends to favour the comparability of data.

  The SF-MST might provide a suitable rationale for the collection of new data or the improvement of existing data sources. (...) the development of new data sources (e.g. mobile phone data) and data integration platforms such as a national spatial data infrastructure (NSDI) (SF-MST – 1.4.1).

  The development of statistics commences from a well-established and broadly agreed concept that can be the focus for the development of rigorous definitions, classifications and measurement methods (SF-MST – 1.2.1).

- Incorporating, conceptually and methodologically, in the measurement of sustainability, **aspects that are currently needed and demanded**, such as accessibility, residents’ attitudes, the equivalent tourist population or the sharing economy.

  Three perspectives are considered central for the measurement of sustainable tourism – the visitor, the host community and tourism businesses. Each represents a different way in which people engage with tourism, either directly or indirectly, and hence each will have different perspectives on tourism’s influence on social development (SF-MST – 4.3).

  In many cases, the assessment of social aspects at detailed sub-national levels will be relevant – especially from the perspective of host communities (SF-MST – 4.5).

  One possible requirement to support the derivation and analysis of indicators is the definition of an equivalent tourism population that allows the use of resources and social impacts to be appropriate compared to other, non-tourism, contexts and situations (SF-MST – 6.3.2).
• Promoting and developing platforms to enable **meetings between users and producers** of statistical information.

*One of the key benefits of developing the SF-MST with its broad scope is that it provides a platform for ongoing discussion between data users and data providers as to what aspects of tourism should be the areas of most focus (SF-MST – 1.4.1).*

• **Interaction** between the producers of information from **different areas** and the **interoperability of information systems**.

There are very important aspects that directly affect the sustainability of tourism but which are under the competence of other areas or departments (environment, education, transport, etc.). If our objective is to obtain an integrated approach to sustainability, we are obliged to collaborate.

*The implementation of SF-MST will require co-ordination of a range of agencies including national tourism administrations, national statistical offices, technical agencies with environmental information, policy agencies, academia and researchers, and the private sector. Indeed, it is important to recognise that there will not be a single data provider. A key task of the leading organization/s will therefore be the co-ordination of the various participants and there are a range of possible institutional arrangements that might be used (SF-MST – 1.4.2).*

• **Applications for decision making:** modelling, generation of scenarios, contingency plans, forecasts, delimitation of thresholds, etc.

*A coherent set of information, that can support (i) monitoring and reporting (and associated indicators), (ii) evaluation and assessment and (iii) modelling and projections. All of these activities are important parts of the policy and decision-making process (SF-MST – 1.2.4).*
Mahbubul Alam (Betty and Gordon Moore Center for Science, Conservation International)

This is a shaping up to be a great resource that not only provides guidance on measuring sustainable tourism but tries to integrate all recent developments and frameworks including experimental ecosystem accounting (SEEA EEA). I have just a couple of comments:

As an economist I found that monetary valuation has received little attention in this document, much less than it deserves. Economic valuation of cultural services in ecosystem services context has always been a big challenge. There are challenges in using mainstream economic principles, practices and methods (e.g. contingent valuation approaches or welfare-based measures) due to incompatibility with SNA principles. But that doesn't prevent us from developing/testing different options. This is true for both measuring tourism as an individual ecosystem service as well as as an ecosystem asset. For example, SEEA recommends on the use of net present value (NPV) of expected future flows to measure asset value. This is particularly powerful, as it goes beyond just reporting past and present of tourism indicators but actually tries to make future projections – which is the essence of sustainability that this document puts emphasis on. This also gives opportunities to think about making policies and development decisions in alternative scenarios.

The other comment I have is a suggestion to have an additional section on the analytical side and policy application. Measuring SF-MST is powerful. But this is not an end in and of itself. How all the data and information generated can be used for further analysis and how to provide policy support is the true strength of this whole work. Some methodological tools and analytical discussion to this end would be interesting.
1. Overall structure and framing of SF-MST

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

I think it is important to insert a distinction of indicators for the different geographical areas, especially for the coastal areas considering that:

- Approximately 50 per cent of all international tourists travel to coastal areas (with high flows concentrated spatially and temporally). In some developing countries, notably Small Island Development States, tourism accounts for over 25 per cent of GDP.
- More than 600 million people (around 10 per cent of the world’s population) live in coastal areas that are less than 10 meters above sea level. Nearly 2.4 billion people (about 40 per cent of the world’s population) live within 100 km (60 miles) of the coast.
- Climate change, and the consequent geohydrological and coastal risk, will hit above all those areas that have a high anthropic vulnerability

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

Yes, I think it is necessary a deepening on which indicators (main and optional) will be considered, as well as deepen the method of calculation and data available.

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

I believe it is necessary to speed up and impose a TSA action bonds, which will stimulate and allow the deadline of 2020 to be maintained.

2. Employment aspects in measuring the sustainability of tourism

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the subgroup on Employment as well as the individual contributions of three experts to the Working Group meeting on this topic:

- Canada
- Cardiff Business School
- GJASD International

- Labour additions of Tourism Satellite Account (TSA) to understand the efficiency of the resources involved in employment and how to process inputs and outputs on decent jobs for the evaluation of green labour.
• Working environment is a part of any green job assessment. Resource efficiency is important for local prosperity, for example in a rural context.
• A good starting point would be to link jobs in characteristic establishments of tourism, e.g., Hotel or restaurant. Much of the work to protect environmental resources that are important for tourism and used by tourists is outside tourism facilities, especially in the public sector, which has an important role to play in protecting natural resources.
• The employment aspects of sustainable tourism:
  - Definitions of work-related decency to be agreed / standardized
  - Access to basic rights such as sickness pay, social security - basic protection for employment.
  - Human capital \( \rightarrow \) the most problematic issues in terms of decent work include a measure of the appropriate use of a person's intellectual abilities
  - Must be considered references to local prosperity and economic development
  - Endogenous growth \( \rightarrow \) We do not want tourism-dependent economies to always be dependent on tourism (which requires more and more input from the outside to protect jobs and increase GDP). Some measures and practices are necessary to start defining green jobs, decent jobs. Some international classifications are needed to understand how to define green jobs, in order to start thinking about how to measure them.

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

3. \textbf{Measuring the environmental sustainability of tourism}

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

\textit{Important to consider impact indicators on habitats, biodiversity and ecosystem services, but also the direct environmental impacts on the population, to what extent the pressures exerted by the tourist activity affect the local population.}

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

4. \textbf{Measuring the social sustainability of tourism}

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism? You may wish to consider the main issues identified by the sub-group on the social dimension: “\textit{Statistical Tools to Measure Tourism from a Social Focus}” as well as the individual contributions of three experts to the Working Group meeting on this topic:
  - Argentina
  - Italy
  - \textit{Visit Flanders}

4.2. What are the most important perspectives to consider in assessing the social dimension?
4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

5. **Defining spatial areas for tourism measurement**

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

    *I think we should also consider the geographical and target type criteria. As explained in the previous question 1.3, there are specific characteristics and problems to be analysed for different types of destinations and geographical areas. I think it is necessary to consider this, because in a series of generic indicators there may not be very important indicators for the different characteristics.*

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

6. **MST connections to sustainable development indicators**

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

6.2. What are the priority themes for the development of indicators?

6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

7. **Other comments**

7.1. Do you have any other comments on the SF-MST at this stage?
Antonio Massieu (InRouTe)

Some suggestions regarding chapter 5

1. Title

As far I understand it, this chapter “Defining spatial areas for the measurement of sustainable tourism” has the ambition to address a first statistical based reflection about the measurement of tourism at subnational levels; obviously a classification of territorial entities is a key issue to address but there are many others too (such as supporting key tourism stakeholders at different spatial scales providing the appropriate data they need, what are the main activities of visitors while at destination,… and a long etc.) Consequently, Measuring the sustainability of tourism at subnational levels sounds to me a more appropriate title.

2. Main challenges regarding data collection

I would suggest that the new version of the Consultation Draft include a new paragraph referring to UNWTO provision of future technical assistance and capacity building support as well as guidance about statistical and non-statistical measurement at subnational levels.

Also, last paragraph of Section 5.3 “The statistical challenge in defining spatial areas” / The application of accounting principles” of the Consultation Draft could include a reference to the opportunity for setting up an articulated national / subnational set of statistical data regarding the main sources used for national tourism measurement.
Nour Barnat (UNCTAD)

1. **Overall structure and framing of SF-MST**

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

   Yes! But in fact, we would be interested to learn how UNWTO define and especially, identify sustainable tourism industries.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

   Yes!

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

   Completely, and thanks for this. As Statistician, I can’t survive without indicators and guiding.

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

   Maybe concrete examples for developing countries especially for Least Developed countries. Data are missing, and a concrete work must be done.

2. **Employment aspects in measuring the sustainability of tourism**

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the sub-group on Employment as well as the individual contributions of three experts to the Working Group meeting on this topic:

   - Canada
   - Cardiff Business School
   - GJASD International

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

   In my opinion, first in some countries (developing) employment in tourism sector is not even collected, let alone more details. This is an opportunity guide country on collecting detailed data on the employment in tourism industries, and of course consider the informality. Why not work on a questionnaire to be implemented and tested in these countries.
3. **Measuring the environmental sustainability of tourism**

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

   *I think yes, at least it is a very good start.*

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

   *The identifications of the matter, the method applied (survey, administrative data, ....?) and the financial aspect, especially for developing countries.*

4. **Measuring the social sustainability of tourism**

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism? You may wish to consider the main issues identified by the sub-group on the social dimension: "*Statistical Tools to Measure Tourism from a Social Focus*" as well as the individual contributions of three experts to the Working Group meeting on this topic:
   - Argentina
   - Italy
   - Visit Flanders

4.2. What are the most important perspectives to consider in assessing the social dimension?

4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

   *The informal employment*

5. **Defining spatial areas for tourism measurement**

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

5.2. Are there particular themes that should be the focus of measurement at sub-national level?

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

   *General comment: I am not sure that the purpose and the whole concept is enough clear for, again Least Developed Countries....where there are many challenges and lack of data everywhere.*
6. **MST connections to sustainable development indicators**

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?

6.2. What are the priority themes for the development of indicators?

6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

_I am repeating myself here, again the problem is big when we want to cover the developing countries (especially LDCs). The need, technology and tools available there are not the same as what we have in developed countries. We have to think in the appropriate way to deal with all their issues._

7. **Other comments**

7.1. Do you have any other comments on the SF-MST at this stage?

_Just to say, thank you very much for the great work you are doing. Tourism is very important in many countries. Sustainability is needed everywhere. The good measurement of all aspects is the key. Thanks._
1. **Overall structure and framing of SF-MST**

Key questions for consideration

1.1. Does the introduction provide appropriate context and explanation of the role of the SF-MST? Are there other topics and issues that should be included in the introduction? Is the structure/logic of the introduction appropriate?

* I suggest including more often graphical information, particularly in the introduction, to make the document more readable for stakeholders outside academia and national accounts.

* One main issue in the introduction is to clarify what do we mean with the sustainability of tourism? My position is that the sustainability of tourism can be approached in three main different perspectives that should be clarified from the very beginning. A) The sustainability of firms and establishments belonging to the tourism industry. B) The sustainability impacts of tourist consumption. C) The sustainability of tourism local destinations. It is important to clearly distinguish these three perspectives to avoid confusion. Sometimes along the text we miss the perspective.

1.2. Are you happy with the conceptual framing of the SF-MST using a multiple capitals-based approach to the organisation of data on the different dimensions of tourism activity?

* In the field of tourism, multi-capitals approach has the advantage of allowing an integrated overview of sustainability issues and an opportunity to apply and eventually contribute to the development of methodologies designed outside tourism. It is important to use in tourism methodologies that can be used elsewhere having the capacity of integrating tourism sustainability with general sustainability. In addition the nature of tourism promote this kind of interdisciplinar approaches as multi-capitals. Following an approach similar to that contained in the UN System of Economic Environmental Accounting could be considered a natural extension of that powerful way of thinking and organising complex information in the case of tourism.

* Nevertheless, I find also important drawbacks of such an approach. First, most of the stakeholders, even those with high tourism skills are not familiar with this kind of approach. Second, the multiple-capitals approach is not familiar for most stakeholders of tourism. Third, the multiple capitals approach has been particularly developed in the context of environmental impacts but there is a lack of methodological support to apply it to social or economic issues in an specific field as tourism.

* Anyway, building a statistical framework for MST with the help of multiple-capital approach can serve as conceptual national structure that is then enriched by complementary tourism indicators for both the national and the local level. From a policy oriented perspective the SF MST (that requires a lot of expertise and information and is not easily readable by stakeholders) must be built in parallel to a the local level indicators and presentations, with more direct policy implications.

1.3. Across chapters 2, 3 and 4 covering the economic, environmental and social dimensions, are there significant missing topics or themes?

* One possible solution for some topics not considered in chapters 2,3 and 4 (because they do not fit in a national statistical framework) is to consider them in chapter 6. This would mean that chapters 2, 3 and 4 are related to the National Statistical Framework for MST (avoiding indicators and local destination issues that could be recalled in chapter 6).
1.4. This draft includes a new chapter, chapter 6, on indicators and analysis. Is this inclusion appropriate?

This new chapter is completely necessary and should include guidelines for a common set of basic indicators for measuring tourism sustainability. Probably it will not be as methodological powerful as the chapters following a multi-capital approach, but it will be probably more useful for a majority of users of the document. This chapter 6 should contain a set of indicators for local areas designed on chapter 5 (that should just be focused on the delimitation of local areas) and in a less extent, chapter 6 may include a summary of indicators derived from chapters 2, 3 and 4.

1.5. Any other comments or questions on the overall coverage and structure of the draft SF-MST?

As the times goes on, the chapters of the document must continue gaining coherence and relation. For example, chapters 2, 3 and 4 should be similar in structure. Chapter five and six should be better justified from the beginning. Why do we need more chapters if we have considered the three dimensions of a statistical framework of sustainability in chapters 2, 3 and 4. The answer we think is related to the fact that, because of its different implications, the spatial dimension of tourism has been voluntarily neglected on those chapters. Therefore, on chapter 5 this issue is recalled and the main consequence is presented: the need for the delimitation of local destinations. Finally, chapter 6 should gain relevance if it is integrated with previous chapters and should be converted into one central chapter of the document containing a more practical perspective than that contained in the previous chapters, but keeping a link to all previous chapters.

2. Employment aspects in measuring the sustainability of tourism

2.1. What are the key aspects concerning employment that are relevant in measuring the sustainability of tourism? You may wish to consider the main issues identified by the sub-group on Employment as well as the individual contributions of three experts to the Working Group meeting on this topic:
- Canada
- Cardiff Business School
- GJASD International

2.2. What aspects of the concept of decent work are of most importance for policy and to what extent are they measurable?

Of course, decent work is a central issue, particularly in the field of tourism. However, it is impossible to reach an international agreement on the thresholds of decent work. Anyway, we can select a set of indicators that when analysed together and with the help of qualitative information couldn’t provide useful information for designing policies affecting labour conditions.

Therefore, I should avoid using non-tourism concepts that are not accepted by the UN and that is the case of decent work. Instead, we should provide a set of indicators from which stakeholders could draw conclusions. The same applies to green jobs.

2.3. In practice, what do you see as the main challenges in collecting additional detail on employment in tourism industries?

The main challenge is to have good business registers related with employment and good census information on the areas of influence of tourism (local job markets). Delimiting these areas of interest is necessary to provide policy oriented information. Information on wages would be also of great interest, but difficult to have accurate data because of tips, informal economy, etc.
3. Measuring the environmental sustainability of tourism

3.1. Does the chapter on the environment dimension cover all of the relevant areas for the measuring the environmental sustainability of tourism?

Despite it is not clarified on the text, the chapter is focused on analysing sustainability from a national point of view and through an ecosystem accounting approach. Issues dealing with the sustainability of local destinations are missing in the chapter probably because the approach selected is not appropriate for this scale. But this local scale is where relevant environmental concerns exist and it is where some policies are designed and demanded. Indicators approach could be a way of dealing with environmental sustainability at local destinations. This can be included either on this chapter 3 or in the chapter 6 related with indicators.

3.2. Does the chapter appropriately describe the link between tourism activity and environmental assets?

It considers a supply approach. It describes the relationship of the tourism industry with the environment. But there are two missing complementary approaches not considered: the demand approach: tourist behaviour and consumption; and the “local destination approach”: specific environmental issues in tourism concentrated areas.

3.3. What role do you see for ecosystem accounting approaches in the SF-MST?

Developing a framework for the integration of tourism in the SEEA is an important contribution that should be pursued. Nevertheless, in the case of tourism this approach seems insufficient to cope with environmental concerns (see next question).

3.4. In practice, what do you see as the main challenges in collecting environmental data in relation to tourism activity?

The main challenge is that tourism environmental problems are concentrated in local destinations. Therefore, a set of environmental indicators should be proposed. The problem with the environmental indicators is that some of them can be country or destination specific because of local singularities. In addition, indicators cannot be interpreted isolatedly without a context and without the help of a tool in the line of importance-performance analysis. Importance-performance analysis provide us with information not only of the level reached by an indicator but also with the relevance the indicator is given by stakeholders. It is important to have signals of the relevance of each indicator for each place to promote sustainability policies.

4. Measuring the social sustainability of tourism

4.1. Does the limited text describing the chapter on the social dimension cover all of the relevant approaches and aspects for the measuring the social sustainability of tourism?
You may wish to consider the main issues identified by the sub-group on the social dimension: “Statistical Tools to Measure Tourism from a Social Focus” as well as the individual contributions of three experts to the Working Group meeting on this topic:
- Argentina
- Italy
- Visit Flanders

4.2. What are the most important perspectives to consider in assessing the social dimension?

The social dimension of tourism sustainability is strongly related to the welfare of local communities living inside or close to tourism destinations. Dealing with the social dimension requires a local destination related approach.
4.3. Establishing standard measures of social capital will be challenging in the short term. Is it sufficient for the SF-MST to focus on framing the measurement of the social dimension in terms of selected indicators?

Of course the SF-MST should not introduce new general concepts related to social accounting that are not still available worldwide. In future extensions of the SF MST there may be room for a contribution to international statistical standards beyond tourism. But this task exceeds the current objectives of the document.

4.4. In practice, what do you see as the main challenges in collecting social data in relation to tourism activity?

As I mentioned before, the main challenge is to have good business registers related with employment and good census information on the areas of influence of tourism (local job markets). Delimiting these areas of interest is necessary to provide information with policy interest. Social data may not be easily comparable among destinations and should be related to social data of the country. Therefore, conducting surveys in selected local destinations (firms, workers, tourists, residents,…) could be a practical way of approaching to sustainability issues.

5. Defining spatial areas for tourism measurement

5.1. The SF-MST proposed 6 spatial scales from global to local levels. Is this appropriate and is the labelling of these levels suitable?

This classification of six spatial scales is a way of organising information and minds and I think that can be appropriate. However, some of the scales are not used throughout the document because they are not really necessary. Actually, there are fewer relevant scales. One relevant scale is the global scale (since sustainability issues affect all the planet), another is the local scale (the usual environment of some a community where “significant” tourism activity take place) this scale can be sometimes proxied by the municipal scale despite (as a second best solution). For measurement purposes it is better to delimit local destinations as places with tourism relevance, intensity or concentration.

Municipalities (easier) or usual environment of individuals (more complex identification) can be a useful spatial units for measuring the social influence of tourism. Nevertheless, for the economic and the environmental issues may need to delimit the smallest destination we can. This is because it is important not to include inside destinations places without tourism relevance because the data we may obtain can be misleading. This difficulty in delimiting destinations help to explain why the delimitation of destinations must be to a great extent the result of a consensus among tourism boards and stakeholders.

Another issue is the type of tourism local areas. The local destination is one important spatial area but there is another interesting spatial zone: the area of influence. This area of influence is related with several issues: employees in tourism may live within what is called the local job market whose boundaries are bigger than the destination. In addition, the tourists may visit during a day-trip, several places in an extensive area around the destinations and finally, many providers of goods and services to tourists or to the tourism industry may be located in this area surrounding the tourism destination. This area of influence can be chosen in terms of administrative divisions (e.g. municipalities or group of municipalities). In the case of urban tourism, coastal tourism and nature related tourism or visiting friends and relatives, the relevance of tourism destinations and area of influence may vary. Again, the subjectivity of stakeholders should play a role in defining these areas beyond objective indicators.
5.2. Are there particular themes that should be the focus of measurement at sub-national level?

Yes. One important issue is that there is need for a change in the point of view and in the relevance of sustainability issues with respect to a national scale analysis. For example, CO2 emissions of a local tourism destination are not as relevant for the destination stakeholders in this destination as waste production and management, noise or the quality of water in the beach.

In addition to a change in the focus there is a change in the nature of indicators. Most indicators that are relevant at the national or global level are aggregates or averages of data coming from lower layers. By contrast, at the local scale there are several strategic sustainability indicators that cannot be aggregated or hidden behind an average. This is the case of quality of the water, the level of noise, damages to the landscape, depletion of local water resources, impacts to local culture, spills, sanitary conditions, welfare on local population, natural hazards, etc.

Most tourism activity take place within very small places. This fact allows explaining an important share of tourism sustainability by analysing these places that we call local destinations.

Using local destinations as a unit of statistical analysis obliges to introduce another aggregate of other places (non-local tourism destinations or the rest of the country). This “rest” allows a comparison of tourism with “non-tourism” places. Destinations + non-destinations must equal the national/regional total.

5.3. The approach to defining spatial areas is based on establishing principles for measurement based on the idea of tourism concentrations. Is this an appropriate approach?

Yes, as we have already proposed (Hernández Martín et al., 2016) it is important to combine two main criteria: one related to concentration, intensity or relevance of tourism (either supply side or demand side indicators) and the other related to the tourism destination model (there can be areas completely oriented to tourists, other areas developed around the old town, other areas developed around some attractions, etc. Subjectivity issues, not only objective indicators, are agreed to be necessary to define local destinations and in general, functional areas in Social Sciences. Beside subjectivity issues, some conditions of feasibility, relevance and confidentiality are, of course, also needed.

5.4. In practice, what do you see as the main challenges in collecting sub-national data in relation to tourism activity?

The main challenge is to provide a toolkit to analyse local tourism destination sustainability with coherent international guidelines.

The second challenge is to integrate the local scale set of indicators with the national level SF-MST in a double sense. First, local destinations account for a relevant share of national aggregates in several tourism indicators (eg. energy consumption of tourism, employment). Second, information on local destinations like the working conditions, the traffic congestion or attitudes against tourism by local communities in certain destinations should be somehow integrated in a national approach to tourism.

6. MST connections to sustainable development indicators

6.1. Are the UN SDGs a good, useful or sufficient framing for determining a set of indicators on the sustainability of tourism?
It is important to use international standards as a starting point to analyse the sustainability of tourism trying to converge with UN useful initiatives. Nevertheless the set of indicators related to UN SDGs is still not well developed and it is not adapted to tourism attributes. Therefore, UN DDGs are not sufficient. It should be better to develop SF-MST in parallel but independently to UN SDGs. SF-MST, as a particular case, must develop beyond UN SDGs which have a more general approach.

6.2. What are the priority themes for the development of indicators?
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6.3. What are the main barriers to the collection of data to derive indicators and what needs to be put in place to support the use of indicators in decision making processes?

The main barrier for the development of indicators is related with governance. Statistical skills and policy capacity lies on the national or regional governmental scales while most tourism sustainability issues have a local nature. The problem of the lack of use of indicators in decision making processes is also related with governance. As a rule of thumb, the more democratic, educated and wealthy, the more the use of indicators for decision making.

7. Other comments

7.1. Do you have any other comments on the SF-MST at this stage?

Any additional comments you may need related with my answers or other topics, I will be delighted to support you with my ideas.
Mr. Dirk Glaesser (Director, Department of Sustainable Development of Tourism, UNWTO)

DETAILS

Overall:
- Links to the discussions of INSTO are missing (see attached outcome documents)
- Instead of always underlining the missing definitions, approaches etc. it should be highlighted WHY they have not been found so for when measuring sustainability in tourism and IF that is actually feasible.
- Alignment with other monitoring systems (e.g. GSTC)? – no reference made
- An overview of the selected accounts (issue areas) and the corresponding indicators would be good to provide in each section (economic, environmental and social) in order to see clearly what is going to be monitored.

1. Introduction

1.1. What is sustainable tourism?
- No chronological order (SDGs come after IY2017)
- Missing important milestones (e.g. A/RES/69/233 in 2014)
- Focus of content: why focus half a page on IY2017? It’s not the international year that increased the awareness of the issue of monitoring sustainability but especially the SDGs, which should receive more attention in this chapter
- Specific tourism SDGs should be specified: 8.9; 12.b and 14.7.
- Clear problem statement is missing in the introduction: it needs to clearly highlight the reason why monitoring is so important of sustainability. The challenge for tourism stakeholders due to the remaining lack of evidence need to be highlighted as well as the challenges that come with the nature of sustainability due to its characteristics (intangible, future product etc.), its complexity, dynamism and interlinkages etc.
- The context-sensitivity and the related issues with that need to be referred to when talking about lack of evidence and reasoning.

1.2. Statistical Approach to measuring sustainable tourism
- Missing reasoning for monitoring: lack of evidence for better decision making for tourism stakeholders…
- Why differentiate between sustainability and sustainable development?
- P.11: There are broadly agreed concepts of sustainability. What determines a particular activity as sustainable CANNOT be perfectly agreed on universally because of…. 
- P. 11: the three broad approaches to assess sustainability in tourism should not be presented as something separate but rather as complementing
- P.13 needs references for the figures
- P-14 needs to clarify that before the indicator book there was an important publication by UNWTO called ‘what tourism managers need to know’ that was the first that reflected on indicators. This was then followed by the 2004 publication which was based on global consultation, providing over 700 possible indicators for relevant issue areas.
- P.14 reference to INSTO and UNWTOs commitment to support destinations at the local level should be made here (as this is ongoing since 2004)

Chapter 1.3.4
- P.21 it is good that the importance of the destination level is now acknowledged in this initiative, however, it also underlines its challenge as efforts for integrating e.g. economic and environmental accounts will be realized at a national level.
- P.21 when talking about spatial scale, the project would benefit from using wording used in spatial planning and referencing different levels of granularity and the related problems in measurement as shown by different research initiatives.
• P.22 tourism destination: when talking about the local level (city or rural) it needs to be kept in mind that that tourism may not be distributed throughout the entire administrative units, but instead often covers only parts of one or several administrative units.

Chapter 1.3.5
• P.22 SF-MST accounts: wording needs to be consistent to the one already used on page 17 to avoid confusion

Chapter 1.3.6
• Combined presentations and indicators reflect the same idea as composite/weighted indexes – why giving it a new name here, adding to the confusion? Need for alignment with already existing terms

1.4. Implementation and application of the SF-MST

In the first paragraph, the main issue of MST is clearly described: the project seeks to find a common, internationally comparable framework; yet, countries will adopt flexible and modular approaches, not implementing the possible parts at the same time, the same order and at different levels. In addition, the framework is not mandatory.

Considering these aspects while also understanding that now the destination level is included into the framework, hence making the success of MST not only depend on the national efforts but also local efforts, it presents a very ambitious project that may not be possible to be implemented in the way it is currently planned (also considering time, financial and capacity issues). Clarification the realistic timeframe of such a progressive and modular approach is required. The organization cannot promise a comparable framework if it will take decades for countries to arrive at a certain point of coherence (expectation management).

Finally, after describing the role of national statistical offices, this chapter would also benefit from adding a section on the use of non-traditional data and how or if it will be integrated into the initiative. Until this chapter, there is no information on HOW data will be collected.

Chapter 2 – Economic Dimension
• Link to the previously presented MST accounts on p.23 is missing (consistency).

Chapter 2.3.2 (p.32)
• Business surveys and visitor surveys are presented as the typical way to collect data on tourism industries though the TSA.

Chapter 2.3.3 (p.33)
• When talking about taking stock of assets such as airports, ports, hotels etc. we are talking about making an inventory of the assets that the destinations encompass. From the INSTO experience, this is already a great challenge for destinations and not done in a common way. In addition, new data sources and tools (e.g. remote sensing) are increasingly offering good solutions to encounter this challenge. Common wording and reflection about current developments and new possibilities to ensure data availability need to be considered.

Chapter 2.3.5
• Besides the various challenges that the initiative already has to encounter, it is unclear why a commitment is now also sought to measure the sharing economy. In order to provide reliable data in a responsible manner, it will require diving into exercises with non-traditional data, which is currently not included in the project. Finding a standard way on how to measure the percentage of shared accommodations can (similar to providing better guidance on establishing reliable and updated inventories) be an individual project on its own and should not be taken onboard just because it is a trending topic without
considering the needed discussions, research and data. Measuring sharing economy is a new addition to this initiative which could already be an individual project itself. To align with already existing terminology should it not be something like 'non-commercial or privately-owned' or 'shared' accommodation instead of 'sharing economy'?

Chapter 2.3.6
- p.34 eco-tourism should not be presented as the reference type of tourism for sustainable development as it is just one of many. Also, it is difficult to identify which establishments serve only 'eco-tourism' purposes due to the missing agreed definition

Chapter 3 – Environmental Dimension
- Would be good to include the reasoning why the four main accounts/issue areas were selected to be the focus in this initiative.
- There is a need to present the current data availability and the existing sources for the selected areas and their related indicators in order to understand the feasibility of measuring them. Much data is available outside of the sector, these sources should be considered.
- Aspects such as circularity and the element of the displacement factor are completely missing
- 3.4.1 uses different terms than used on page 36 (accounting for natural resources). Consistency needs to be improved to avoid confusion.
- P.54 first paragraph: UNWTO has previously used the term ‘wildlife watching’ instead of safari and focuses on non-consumptive part of it only, hence no recreational hunting and fishing. Consistency with UNWTO's previous work needs to be ensured.

Chapter 4 – Social Dimension
- P.64/65: the list of social issue areas is long and will include a variety of different indicators for each of these aspects. Similar to the work in the other areas, limiting the focus on the most essential will be key. Selection of priorities depends on data availability and used tools. Non-traditional techniques have especially helped in the area of local satisfaction (not perception!- stay aligned with commonly used terms) in recent years, which is why this topic will need to be integrated in the project. Hence clarification on which indicators is needed.
- Accessibility and use of infrastructure: unclear what ‘roads, transport systems’ mean and why this is now in the social dimension and not in the previously presented section on infrastructure.
- 4.6 (p.66): which are the four parts of the social dimension???

Chapter 5 – Defining spatial areas
- See general comment in the email & feedback on 1.3.4
- P.70: would be better to follow and align with terminology used by spatial planners. Usually, the municipal/city region reflects the local level and is referred to as such. Difference can then be made within the local level between urban areas/agglomerations and rural areas.
- Tourism destination (p.70/71): avoid sentences such as ‘the concept of sustainability appears to be…’. The document should not be based on personal observations.
Here are some additional comments (together with those regarding the SDG tourism indicators I sent previously):

First, of the MST employment documents I like Igor's paper the most. I think the best approach is to use the ILO methodology to determine the number of green jobs, then estimate how many of those are related to tourism. In terms of measurable related indicators, I think that 1) The percentage of the country's tourism employees paid at or above the national minimum wage could be useful, together with 2) Whether the country concerned has signed the relevant ILO labour codes, 3) Whether the ILO codes are actually enforced in the country for the tourism sector and 4) Average years of education of tourism employees, preferably separated for management and non-management.

I'm surprised the MST draft does not yet refer to the UNWTO's earlier work with the ILO, and the 2 documents which resulted (http://statistics.unwto.org/en/project/employment-and-decent-work-tourism-ilo-unwto-joint-project). I believe a reference to these should definitely be included. Another relevant indicator could actually be 5) Country inclusion of Section 5 on employment in the UNWTO Compendium. A quick check of countries that have not included Section 5 in their 2018 UNWTO Compendium entry begins with Algeria, American Samoa, Andorra, Anguilla, Antigua and Barbuda, Armenia, Aruba, etc.…..

Finally, considering that tourism has always been promoted as a labour-intensive sector, I'm still amazed that so little effort is evidently made to collect adequate tourism employment statistics. As noted, a quick look at the UNWTO Tourism Compendium shows that employment stats are typically missing. I think this section of the MST text should clarify why these statistics are so important, and strongly urge tourism stakeholders to make much greater efforts. An analysis of why tourism employment stats are so often not collected should be included, together with examples and case studies of countries that have managed to overcome the problems.

Also, perhaps the UNWTO could work jointly with the ILO on training programs to improve/standardize tourism employment statistics collection, as well as to teach labour unions to lobby their governments to ensure the necessary survey work is actually completed.