

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

Meeting of the Working Group of Experts on 20-21 October 2016
Discussion Paper #3

ROLE OF STATISTICAL AND ACCOUNTING FRAMEWORKS FOR MEASURING SUSTAINABLE TOURISM

October 2016

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1. Introduction

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

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

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

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

2. The scope of statistical frameworks

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

- i. the use of core statistical infrastructure to underpin the collection of data, in particular the use of business register
- ii. the use of internationally agreed concepts, definitions and classifications for the measurement of individual data sets, for example the definition of employment or visitors

- iii. the use of accounting frameworks to provide a basis for the integration of data across different data sets using consistently defined measurement boundaries and common terms and language; TSA and SEEA are crucial in this respect.

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

Box 1: What is a statistical framework?

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

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

Figure: The Information Pyramid

Information in silos

Agency A	Agency B	Agency C
Indicator A	Indicator B	Indicator C
Data structure A	Data structure B	Data structure C
Data A	Data B	Data C

Integrated information

Agencies A, B, C

Indicators

Accounting framework
SEEA - TSA

Basic data and statistics

Economic data | Environmental data | Social data

Key reporting **indicators** and aggregates, especially across themes, e.g. sustainability

Accounting frameworks to integrate data using common definitions & language

Basic data sourced from multiple collections and technical agencies

Some benefits of a statistical framework are that it

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

Adapted from UNSD and Australian Bureau of Statistics

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

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

In relation to accounting frameworks the key publications are:

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

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

An important aspect of the statistical framework for sustainable tourism will be the development of data at a sub-national or destination level. In concept all of the statistical standards and guidelines just described can be applied at all levels of spatial detail (in the same way as they are equally applicable for countries of different size). The challenge in most cases is not conceptual but rather the collection of sufficient information at sub-national levels.

With this challenge in mind the InRouTe project has been working for some years to advance the development of sub-national tourism statistics picking up on many of the issues to be faced in the MST project. This work to design a Regional Tourism Information System (R-TIS) will also be used to develop the statistical framework for sustainable tourism.

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

3. The role and advantages of statistical frameworks

Why incorporate accounting frameworks?

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

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

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

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

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

Advantages of accounting approaches

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

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

Limitations of accounting frameworks

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

One concern in the development of statistical frameworks is that they will force a level of standardization that does not take into account the degree of uniqueness and difference that exists at the destination level, nor take into direct account the views of local participants. This may be true to some degree. However, the statistical

framework itself does not prescribe which indicators should be used in any given location. Rather, it provides a type of checklist of all of the different possible elements that can provide a complete picture about a location. Consequently, the uniqueness of each destination will thus emerge from the provision of information on these different elements. Those destinations with beaches and those with mountains can still use the same framework provided that the framework includes both beaches and mountains.

It should also be noted that statistical frameworks are not intended to provide analytical outcomes or results. That is, their role is the organization of information, in this case concerning the structure and trends of sustainable tourism. It would be anticipated that the information set would support a range of analytical applications including the derivation of indicators, modeling of economic outcomes, and assessments of sustainability. It is also likely that through analysis of data the relative uniqueness of locations can be assessed since comparable information would be available about different locations.

Additional benefits of developing statistical frameworks

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

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

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

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

4. Conclusion

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

5. Questions for discussion

Is the description of statistical frameworks clear and appropriate?

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