Chapter 5 – Measuring the Sustainability of Tourism at Sub-national Levels

Draft prepared for the Expert Group on MST

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<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>ILO</td>
<td>International Labour Organization</td>
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<td>MST</td>
<td>Measuring the Sustainability of Tourism</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>SEEA</td>
<td>System of Environmental-Economic Accounting</td>
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<td>SEEA EEA</td>
<td>System of Environmental-Economic Accounting Experimental Ecosystem Accounting</td>
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<td>SF-MST</td>
<td>Statistical Framework for Measuring the Sustainability of Tourism</td>
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<td>SNA</td>
<td>System of National Accounts</td>
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<td>TSA</td>
<td>Tourism Satellite Account</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNCEEA</td>
<td>United Nations Committee of Experts on Environmental-Economic Accounting</td>
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<td>United Nations Statistics Division</td>
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<td>World Tourism Organization</td>
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<td>EG-MST</td>
<td>Expert Group on Measuring the Sustainability of Tourism</td>
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5 Measuring the sustainability of tourism at sub-national levels

5.1 Introduction

5.1.1 The demand for sub-national data

5.1 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 sub-national and local destination levels. In 2008 in Cebu, the Philippines, within the Resolution of the Sixth International Tourism Forum for Parliamentarians and Local Authorities there was an explicit “request to deliver general guidelines on measuring tourism at the regional and local levels”. This request has been reinforced by the Mediterranean Community in their policy recommendation for EU regions and other countries in the Mediterranean: “Designing & Implementing A Common Methodological Framework to Measure Tourism Sustainability”.

5.2 Notwithstanding these examples of calls for action at the sub-national level, in contrast, from a statistical perspective, the development of standards and measurement guidance is generally focused on the development of national statistics to support national governments and international comparisons. In tourism statistics, the IRTS 2008 and the TSA: RMF are both focused on national level data although they both recognize the relevance of sub-national measurement and many concepts and definitions are universally applicable in principle. This chapter describes an approach to building harmonized data at the sub-national level to support the analysis of tourism activity and its sustainability at all scales.

5.3 The rationale for better understanding and analysing tourism at different territorial levels lies in the fact that tourism is strongly territory-contingent, with flows of visitors occurring unevenly across countries, regions, municipalities, or any other territorial entity. Tourism and territory are closely intertwined not only because the natural or built territory is often the main tourism attraction (e.g. an exotic beach, a vibrant city), but also because the characteristics of a territory directly affect the design of tourism trips and itineraries, the nature of the supply that caters to visitor consumption, the capacity to influence tourism activity by means of policy and, consequently, the relationship between tourism and sustainability outcomes.

5.4 In recognising the significance of territory, it is then relevant to conclude that territorial entities would be best served by having a measurement framework that can be used to underpin a data-driven decision-making approach to the sustainability of tourism. Without this, territorial entities may lack information that genuinely reflects the situation in their local area - for example, needing to rely on unrepresentative national data or data limited in scope.

5.5 More specifically, sub-national tourism statistics are needed to:

- Reflect the importance of specific features of territorial entities as tourism destinations;
• Recognise that visitor characteristics and their expenditure patterns can vary markedly among territorial entities;
• Analyse tourist behaviour and satisfaction in the destination, including activities undertaken, itineraries and places visited, mobility, and places of expenditure;
• Understand the attitudes of host communities to tourism and issues such as congestion and over-tourism;
• Design policies and make appropriate investments (such as the infrastructure that needs to be put in place) that are specific to the objectives and the environmental and social context of each territorial entity;
• Make comparisons of tourism and its sustainability, in terms of economic, environmental and social outcomes, among territorial entities and from sub-national to national and broader scales for supporting benchmarking among destinations and ensuring action on the ground is consistent with national and international policy aims;
• Provide inputs to the wide variety of analysis of drivers of change in tourism activity and potential risks and constraints, including identification of seasonal patterns, recognition of main types of tourism and market segments, early warning indicators of future demand and changes in environmental context.

5.6 The host community or grassroots perspective is a high-profile focus of tourism discussions (Ref#). 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. For example, through increased traffic congestion or rising prices for goods and services. At the same time however, this must be balanced by consideration of the potential to improve the quality of life of local populations through tourism (e.g. through employment opportunities) and also the potential for tourism to support improved protection of the natural environment and local bio-diversity.

5.7 A general feature of developing sub-national tourism statistics is that it supports making meaningful distinctions between different environments and landscapes within a country. Thus, it is important to distinguish between, for example, coastal areas, cities and mountain areas, since each type of location will have different environmental features and capacities. Understanding these different features and capacities for different territorial entities is fundamental to assessing sustainability and enacting appropriate solutions.

5.1.2 A statistical approach to sub-national measurement

5.8 In responding to this challenge from a measurement perspective, the SF-MST provides a structured approach to the organization of data at sub-national level to support decision making at relevant scales. This approach extends the statistical framing provided in earlier chapters around the economic, environmental and social dimensions. At the same time, it is recognized that there will be differences in the data available and the decision-making contexts which means the organization of data at sub-national level is not a simple replication of national level methods and practices. Overall, the longer-term statistical ambition is to develop and integrate both detailed spatial data and national
level data to provide a coherent picture of tourism activity that is of most use to decision makers and other stakeholders at different scales.

5.9 Compiling a coherent picture does not imply that all economic, environmental and social tourism information must be available at every spatial scale or for every area within a country. Indeed, it is likely that some data are more relevant at sub-national scale and that other data are most meaningful at national scale. Thus, the general ambition should be that the data compiled at the sub-national level is

- appropriate for the spatial context allowing some flexibility in the selection of measurement themes and
- for a given theme, data are compiled using agreed definitions and classifications that support comparability with other spatial areas and scales. For example, data on visitor overnights at sub-national levels should be coherent with data on visitor expenditure on accommodation at national level.

5.10 The importance of comparability emerges from a policy perspective since there are connections among the outcomes of decisions made at each spatial scale – local, regional, national, global. That is, choices made and actions taken 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 by all stakeholders when the data organized at each level tells a consistent and coherent picture of the structure of tourism activity and the changes over time.

5.11 The 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 Ecosystem Accounting (SEEA EA) (UN et al, 2021), and work on sub-national and sustainable tourism of UNWTO, including the UNWTO International Network of Sustainable Tourism Observatories (INSTO), and the INRouTe network, among a number of other materials.

5.12 This chapter presents in section 5.2 a discussion of defining scales of measurement at the sub-national measurement and provides a rationale for delineating spatial boundaries from a statistical perspective. The conclusion is that sub-national measurement should be targeted at two levels: the regional level and the local tourism destination level.

5.13 Sections 5.3 and 5.4 then describe statistical approaches to measurement at those two levels. Section 5.3 introduces relevant measurement themes and data sources at the regional level and section 5.4 describes relevant measurement themes and data sources at the local tourism destination level. Throughout, the use of common concepts and definitions at different scales is the essence of a statistical approach to the organization of data.

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1 See for example the discussion in Hein et al (2006)
5.2 Defining scales of measurement

Terminology

5.14 Discussion of sub-national statistics requires consistent use of terms and definitions with respect to different scales. The following six scales are described in the SF-MST:

The global (or international) 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 the term region 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. 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 and some municipalities may be sufficiently large such that sub-municipal areas can be defined (e.g. districts, arrondisements, boroughs) In some cases, the municipal scale may encompass a combination of land uses including, for example, urban, agricultural and natural areas. There will be close connections between this scale and the local scale.

The local scale is used to refer to the contiguous areas or zones (a) within a given municipality or (b) across multiple municipalities, that exhibit particularly concentrations, agglomerations or clusters of commonly purposed or aligned activities and businesses. In the context of the SF-MST, the focus is on concentrations of tourism activity but other activities may also be of particular interest. It is not expected that the local scale would coincide with administrative units at this spatial level.

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

5.16 The term tourism destination might refer to any of these scales. Thus, a destination might be a supra-national area (e.g. the Pacific), a country, a region, a municipality or a location. In the discussion of 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 hence the term local tourism destination will be applied here to refer to spatial areas at this micro scale.
The need for coherent spatial boundaries

5.17 From a statistical perspective, the methodological challenge is to develop the structure and tools to support providing relevant and comparable information for policy and analysis at the appropriate spatial scale. While both national and regional 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. There are two primary challenges to consider:

i. Ensuring that for each individual set of data the spatial boundaries are internally coherent. 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.

ii. Determining which spatial boundaries should be used to facilitate comparison and integration across data sets. 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 compared to the situation in which measurement is being designed for a single region, municipality or location.

5.18 Thus, for the purpose of official statistics, it is important that spatial boundaries are delineated and applied for different datasets. Since there are many different types of data, these boundaries may vary for different measurement themes. For example, for water related data the relevant boundaries will concern water catchments. This would be ideally implemented through the adoption of a national spatial data infrastructure (NSDI).

5.19 For the purposes of measuring the sustainability of tourism, an overarching single layer of spatial boundaries is required that supports the integration of data across measurement themes. That is, relevant tourism areas must be defined to which data for all relevant themes can be attributed. In establishing the set of tourism areas, it will be essential that those working at the local tourism destination scale are involved in the discussion and their insights into how spatial areas are defined can generate information that is suitable for analysis and policy at those sub-national scales.

Applying statistical practice at different scales

5.20 From a statistical perspective, it will generally be relatively straightforward to envisage the development of regional scale statistics for the various, generally larger, administrative areas within a country. Indeed, often there is a requirement to produce statistics at this scale and, in some cases, all national data may be the aggregation of data from regionally collected administrative areas. The combination of national and regional...
5.21 However, measurement at this scale is not sufficient for measurement of the sustainability of tourism and measurement at municipal and location tourism destination scale will be required. This presents additional challenges because

- there are potentially a large number of local tourism destinations,
- issues of statistical significance and confidentiality are likely to emerge when using traditional survey-based approaches
- defining the boundaries of local tourism destinations will be challenging.

5.22 While measurement undertaken by national statistical systems may be more limited at the municipal and location tourism destination scales, this should not be interpreted as meaning that there is little measurement activity more generally since many local tourism destinations will collect and utilize information specific to their area. Indeed, the allocation of resources to this task is likely to be significant and gains may be observed using a coordinated approach to compiling statistics for local tourism destinations. Public administration at different levels, national and regional statistical institutes, universities and other stakeholders may be involved. By way of example, in such an approach, national statistical institutes may provide methodological guidance while agencies in local tourism destinations collect and compile data. The framing of an approach to measurement for local tourism destinations is discussed further in section 5.4.

5.3 Measuring sustainability for regional tourism destinations

Introduction

5.23 The development of data at the regional level is designed to provide a practical step towards recognizing the value of sub-national data more generally as well as providing useful information for decision making at the regional level. The primary focus of organizing information at a regional level is to understand the trends in tourism as an economic sector at the regional level. This information will in turn support the local level assessment of potential pressures on environmental and social dimensions of sustainability. Examples of this connection include measures of visitor flows and numbers of tourism establishments which will likely drive outcomes concerning environmental quality, water use, waste generation and traffic congestion. In addition, there will be some environmental and social themes that are relevant to assessing sustainability that may be usefully analyzed at regional level. Examples include energy use, GHG emissions and employment.

5.24 For the purposes of SF-MST, it is assumed that the spatial delineation of an R-TIS would be based on large administrative areas of a country. To support the development of integrated approaches to sustainability, the ambition is that all regions within a country compile a common core set of tourism data recognizing that, for some regions, additional data on certain themes will be included to recognize regionally relevant issues.
5.25 However, initially, it is not expected that all regions would be the focus of an R-TIS, that is, compilation of tourism statistics should be focused on those regions

- in which tourism activity is a significant proportion of the national total (e.g. based on the share of visitor flows);
- (ii) where tourism activity is a significant proportion of the region’s economy (e.g. based on the number of accommodation beds per resident population);
- (iii) where there are specific environmental and/or social concerns (e.g. high environmental risks due to the presence of tourism activity).

5.26 For example, initially it may be appropriate to compile regional tourism statistics for six out of 10 regions within a country with the remaining four regions aggregated to form a single grouping of non-tourism regions.

Core measurement themes at regional level

5.27 The core themes of interest at a regional level will be:

- Visitor flows including both international and domestic visitors
- Accommodation
- Characteristics of tourism businesses in the region
- Visitor expenditure
- Employment and jobs in tourism industries
- Decent work
- Resident population and their characteristics
- Household income (average and distribution)
- Environmental flows: water use, energy use, GHG emissions, solid waste
- Land use and land cover

5.28 In all cases, the statistical definitions and measurement guidance for these themes is described in other SF-MST chapters. Table 5.1 provides a structure for recording the core statistical data at the regional level.

5.29 These core themes provide a strong starting point for the assessment of sustainability in any region and enable comparisons among regions. Beyond these themes, individual regions may wish to incorporate additional themes as proposed in the chapters concerning measurement of the economic, environmental and social dimensions. It is also recognized that within regions, at the local tourism destination level, other themes might be of particular interest. Further discussion on measurement for local tourism destinations is provided in section 5.4.
Table 5.1: Outputs from a Regional – Tourism Information System (to be further developed pending determination of themes and indicators)

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<th>Tourism region #3</th>
<th>Tourism region #4</th>
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**Approaches to compilation**

5.30 There are a number of ways in which this data set may be compiled. Some information may already be available at a regional level, e.g. on employment, population and accommodation, either as regional estimates from national surveys and statistical collections or from regionally specific data collections. In this situation, data can be readily recorded with the only caveat being to ensure a reconciliation with national level totals and consistency in the use of concepts and definitions.

5.31 Other information such as on the characteristics of tourism businesses would ideally be sourced from a national level database – such as a business register – which allowed for allocation of businesses to each region. Where allocation of national totals is being undertaken, it will be important to document the allocation techniques and ensure consistency in the allocation methods used within a country.
5.32 For data related to visitors – visitor flows and tourism expenditure – it is likely that significant care will be needed in determining regional allocations, particularly in situations where visitors travel to multiple regions in a single trip (for example related to the GHG emissions of inter-regional transport, which may be operated and owned by a company in the origin, destination or a third region). Conceptually, this same challenge confronts the compilation of national level aggregates but it is likely to be more difficult to resolve at regional level if there is less data available concerning within-country travel.

5.33 In all situations, it will be beneficial to develop maps showing the spatial distribution for each variable of interest. Such maps will help to clarify and focus attention for policy purposes, especially for those decision makers at national level.

5.34 Ideally, the integrated measurement of regional level data would incorporate the compilation of regional TSA. Compilation of these accounts would provide a rich set of information to support the assessment of sustainability. However, the compilation of regional TSA can be a challenging and costly task. It is therefore recommended that initial focus be placed on using a common core list of tourism products and industries across all regions and ensuring alignment with national aggregates as relevant. This work will provide a strong basis for regional indicator systems.

5.35 At the same time, it should be recognized that through the compilation of regional level data, there is likely to be an important feedback loop to the compilation of national data, including national TSA. Collaborative models of statistical production between regional and national authorities should be encouraged. The use of common statistical concepts, definitions, classifications, accounting rules and principles of recording facilitates such collaboration.

### 5.4 Measuring sustainability for local tourism destinations

**Introduction**

5.36 The measurement of tourism sustainability for local tourism destinations is a very common area of focus. In many ways, it is at this scale that the interactions between the different dimensions (economic, environmental and social) are most evident and it is the scale at which management actions take effect. The section considers the two key conceptual steps to support measurement of sustainability for local tourism destinations. These steps involve delineating spatial areas to represent local tourism destinations and selecting and measuring relevant themes.

**Delineating local tourism destinations for statistical purposes**

5.37 Traditional statistical approaches to the delineation of small spatial areas involve the use of administrative units, for example, municipalities. In turn, these areas are commonly delineated based on concentrations of people and the households they comprise. For certain types of information and in certain contexts it might be relevant to use fine-scale administrative units to delineate local tourism destinations. Organization and release of data for these areas may also be highly relevant since the jurisdiction of decision-makers is likely to be defined by these boundaries.
5.38 However, using administrative units for understanding the sustainability of tourism (including analyzing the behaviour of visitors, the productive activities of tourism industries and associated environmental stocks and flows) is likely to be analytically limiting given the likelihood that tourism and visitor activity will commonly be concentrated in specific areas within an administrative unit and also have connections across administrative units. Hence, delineation will require the use of additional factors.

5.39 From the literature the clearest approach is to define areas on the basis of criteria, functions or characteristics. This reflects (i) the type of approach that underpins the delineation of social-ecological systems (see, for example, Leslie et al., 2015); (ii) the way in which ecosystem accounting delineates between different ecosystem types (described in the SEEA EA); and (iii) the way that spatial areas for tourism have been identified (see, for example, Hernandez-Martin, et. al., 2016³).

5.40 Given the multi-faceted nature of tourism that is encompassed by tourism statistics there are three perspectives to be considered – (i) a tourism supply perspective, in which—for the purposes of subnational measurement—the focus is on the location and concentration of tourism industries; (ii) a visitor demand perspective in which the focus is on the places visited in terms of location and time spent; and (iii) the area of influence of tourism activity. These perspectives are considered below.

5.41 The supply perspective is the most tractable and recommended pathway to delineating local tourism destinations. This involves using information on the location of tourism businesses and determining a boundary around particular concentrations of these businesses. In many cases it is likely that such areas are relatively well known and evidenced by known concentrations of accommodation establishments and associated restaurants, together with popular tourism attractions (e.g. museums, beaches, parks).

5.42 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, concentrations of tourism businesses. Particular examples will include national parks, beaches, reefs and cultural sites.

5.43 A third perspective to consider is the area of influence of tourism activity which refers to the locations that are affected by or support tourism activity, usually beyond the boundaries of the local tourism destination. Examples include communities where a substantial number of employees of tourism businesses reside and water catchment areas.

5.44 Depending on the context, the following four criteria should be applied to delineate a local tourism destination. These concentrations should be mapped and compared. Then,

through stakeholder discussion, local tourism destination boundaries can be drawn. It is likely that these boundaries will change gradually over time, or new local tourism destinations will emerge, and hence ongoing review (say every five years) is recommended.

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

5.45 It will be appropriate to set thresholds for the concentrations listed above recognizing that only a selection of areas within a country will be the focus of targeted, tourism focused measurement.

5.46 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.

5.47 Once a set of local tourism destinations is established, for analytical purposes, it may be of interest to group together destinations that have common topographical and geographical characteristics. Examples of possible groupings include: coastline and small island destinations, mountain destinations and urban destinations. The use of common measurement themes and indicators within such groupings may be of considerable benefit in comparing alternative policy solutions. It is anticipated that on the basis of the principles provided in the SF-MST it will be possible to develop more specific guidance for specific types of destinations.

**Measurement themes for local tourism destinations**

5.48 Based on the principles above, the core data that can be used to delineate local tourism destinations include: visitor overnights, the number of tourism establishments, accommodation capacity (rooms/beds), the area of the local tourism destination (in hectares) and the resident population and associated demographics.

5.49 Data on these topics can also be used to provide a general sense of tourism intensity and tourism density and how it is changing over time. Tracking such changes on a daily, monthly or quarterly basis can provide meaningful indicators of pressures on the local area and its environmental, social and economic context.

5.50 To determine the core themes that may be of relevance at the local tourism destination level, the 10 themes identified for the regional level in Section 5.3 should be used as a starting point as well as consideration of the 11 "core issue areas” identified in the UNWTO-led INSTO initiative which are:

- Local satisfaction with tourism
5.51 In addition, and to ensure that unique aspects of each local tourism destination are reflected, the following measurement themes may be included as relevant, to provide a broader and locally relevant set of measures and to support decision making at the local level.

- Air quality (including associated measures of pollution)
- Water quality (river, marine) (including associated measures of pollution)
- Biodiversity and ecosystem condition (e.g. indicators of species diversity, beach condition, coral cover, protected area statistics)
- Heritage conservation
- Congestion and noise
- Tourism related infrastructure
- Safety and crime
- Social inclusion
- Visitor satisfaction

5.52 The ambition is to ensure that where the same theme is being incorporated by multiple local tourism destinations and within associated regional level data, all compilers use the same variables, statistical definitions and indicators, starting from the existing statistical standards and recommendations. The use of common language and metrics supports the sharing of experience, comparison of performance, discussion of policy options, and may identify opportunities to reduce the costs of data collection. National statistical institutes and national tourism administrations can play a leading role in establishing and sharing appropriate guidance and supporting compilation work at different levels.

Compilation approaches and considerations

5.53 In common with the measurement of regional statistics, measurement at the local tourism destination level will require consideration of a wide range of data sources. Possibilities include:
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- Fine scale national data, for example from population census
- Locally based surveys concerning community perceptions of tourism and visitor perceptions of satisfaction with destinations
- Registers of tourism businesses at local, regional and/or national levels
- Data from local utilities concerning water, electricity and waste
- Data from local authorities and registers on land use, transport, accessibility, governance arrangements
- Data from local business groups on tourism industries and their employment
- Remote sensing data (including from satellites and sensors)
- Big data collected from, for example, mobile phones and credit cards

5.54 Wherever possible the data should be geo-referenced to facilitate meaningful connections across datasets and increased applicability to local decision making. The potential for compiling geo-referenced data is increasing steadily, including for visitor surveys. A range of digital survey tools may be applied that output data in geo-referenced form.

5.55 In the initial phases, the challenge from a measurement perspective is likely to be finding the resources to analyse and investigate the range of potential data sources and to work towards understanding the data quality and the extent of coverage, access and time series. At this scale of measurement there may also be important issues of confidentiality to be considered.

5.56 The key role of SF-MST concerning measurement is to provide a standard set of concepts and definitions such that available data can be assessed in relation to an agreed benchmark. Since it is likely that data sources will change over time, it is fundamental to the process of statistics to ensure a stable measurement definition otherwise assessment of change over time – a fundamental aspect of measuring sustainability – can be rendered meaningless.

5.57 One of the significant benefits in the application of the SF-MST should also be that different local tourism destination can compare approaches to the measurement of the same concepts and progressively improve and refine these approaches. For example, it may be possible to develop and use similar questionnaires and related technology; and in the use of remote sensing data it will also be more cost effective to measure the same variable for different locations via a single approach with the data supplier.

Linkages with accounting for ecosystems

5.58 Chapter 3 introduced the approach to accounting for ecosystems developed in the context of the broader SEEA. Ecosystem accounting provides a spatially based approach to delineating ecosystem assets (e.g. forests, wetlands, etc) in the landscape and recording over time the extent of these assets, their condition and the flows of ecosystem services they supply. Ecosystem accounting retains the fundamental link
between stocks and flows that is common to all accounting approaches but extends and applies this link to finer spatial scales.

5.59 Since spatial context is a very important aspect of assessing sustainability, particularly at the local tourism destination level, there are statistical practices that have developed in the context of ecosystem accounting that can be adapted to support the development of tourism data at this small spatial scale.

5.60 In addition, it may be relevant to apply some ecosystem accounting terminology to frame the discussion of measurement at the local tourism destination level. For example, it may be possible to consider the changing extent of different features/areas within a local tourism destination, to assess the changing condition of these areas and to record the flows of ecosystem services and benefits supplied by different areas within and potentially outside a local tourism destination.

5.61 Finally, the concept of carrying capacity which is common in the discussion of tourism sustainability, mirrors in many respects the concept of ecosystem capacity that has developed in the context of ecosystem accounting. Overall, the integrated spatial accounting approach of ecosystem accounting in the SEEA may support advances in measurement at the local tourism destination level.