



Statistical Framework for Measuring the Sustainability of Tourism (SF-MST)

Chapter 2 – Measuring the Economic Dimension

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List of abbreviations and acronyms

EG-MST	Expert Group on Measuring the Sustainability of Tourism
ILO	International Labour Organization
IRTS 2008	International Recommendations for Tourism Statistics 2008
MST	Measuring the Sustainability of Tourism
SDGs	Sustainable Development Goals
SEEA	System of Environmental-Economic Accounting
SEEA EEA	System of Environmental-Economic Accounting Experimental Ecosystem Accounting
SF-MST	Statistical Framework for Measuring the Sustainability of Tourism
SNA	System of National Accounts
TSA	Tourism Satellite Account
TSA: RMF 2008	Tourism Satellite Account: Recommended Methodological Framework 2008
UN	United Nations
UNCEEA	United Nations Committee of Experts on Environmental-Economic Accounting
UNSC	United Nations Statistical Commission
UNSD	United Nations Statistics Division
UNWTO	World Tourism Organization

2. Measuring the economic dimension

2.1. Introduction

- 2.1. The activities of visitors drive a range of economic benefits at local, national and global scales. These benefits include incomes earned by tourism businesses, wages and salaries paid to employees in tourism businesses and indirect benefits to economic units that supply goods and services to tourism businesses. Recording these various economic benefits has been a focus of tourism measurement over recent decades. Measuring sustainability in this economic dimension concerns organizing data that allows assessment of the potential for economic benefits to be secured in the future.
- 2.2. There is a range of economic factors that should be considered in assessing this potential that are the focus of this chapter. Of course, in line with the systems framing described in Chapter 1, there will be non-economic factors – i.e. environmental and social factors – that will also affect the potential for economic benefits to be secured. These are considered in later chapters.
- 2.3. The relevant economic factors concern:
 - Visitor flows – i.e. the extent to which current patterns of visitor flows will continue or change in the future
 - Visitor expenditure – i.e. the extent to which current patterns of visitor expenditures will continue or change in the future
 - Economic performance and structure of tourism businesses – i.e. the extent to which the performance, composition and characteristics of tourism businesses will continue or change in the future
 - Produced assets, including infrastructure, used by tourism businesses – i.e. the extent to which the produced assets used to support tourism activity have sufficient capacity to supply goods and services to visitors in the future
 - Employees of tourism businesses – i.e. the extent to which there are sufficient people with appropriate skills and experience (human capital) to supply goods and services to visitors in the future
- 2.4. The chapter commences with a short summary of the key statistical definitions that underpin the measurement of tourism activity and the associated economic benefits. Measuring flows of and characteristics of visitors, and the economic benefits associated with tourism activity has been a long standing focus of tourism statistics and is reflected in the content of the statistical standards for tourism, namely the International Recommendations for Tourism Statistics 2008 (IRTS2008) and the Tourism Satellite Account: Recommended Methodological Framework 2008 (TSA:RMF). As a result of this statistical development, there is significant statistical guidance for the measurement of the economic dimension.
- 2.5. The economic factors concerning sustainability listed above are discussed in the remaining sections of the chapter. Generally, all of the data required for assessing each of the factors can be sourced from the IRTS2008 and TSA:RMF or from extensions to these standards.

2.2. Key aspects of tourism statistics and the TSA framework

2.2.1. Tourism statistics

- 2.6. Tourism is often described as a demand-driven phenomenon. The same economic activity providing the same goods and services may be considered tourism, or not tourism, depending on whether the consumer is a visitor or not. This makes the concept of “visitor” central to understanding whether economic activities qualify as tourism or not. From an economic perspective, the demand side of tourism refers to the activities of visitors and their role in the acquisition of goods and services. The supply-side of tourism is understood to be the set of productive activities that cater (mainly) to visitors.
- 2.7. The international standard for tourism statistics is the IRTS2008 published in 2010. The IRTS 2008 focuses on the activities carried out by visitors and on measuring them in both monetary and non-monetary terms. It provides a system of definitions, concepts, classifications and main indicators that are internally consistent and that facilitate the link to the conceptual frameworks of the national accounts, especially Tourism Satellite Accounts, Balance of Payments, labour statistics and other statistics.
- 2.8. The framing of the visitor activity that is at the heart of tourism statistics and at the heart of the SF-MST, and is clearly defined in IRTS2008. The key points in the framing are that:
- A **visitor** is a traveller taking a trip to a main destination outside his/her **usual environment**, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited.
 - **Tourism** refers to the activity of visitors.
 - A visitor is classified as a **tourist** (or overnight visitor) if his/her trip includes an overnight stay, or as a **same-day visitor** (or excursionist) otherwise.
 - A tourism trip is a trip undertaken by a visitor and may be categorised as domestic, inbound or outbound trip depending on the residency of the visitor and the main destination. The activity of visitors on trips within their country of residence is called domestic tourism, activity on trips within a reference country by non-residents is called inbound tourism and activity on trips outside a reference country by residents is called outbound tourism (these constitute the different forms of tourism).
- 2.9. The definitions of residence and economic territory (which defines the geographical scope of a country) are the same as described in the System of National Accounts and the Balance of Payments.
- 2.10. For the measurement of economic benefits a key concept is **visitor expenditure** which is the amount paid by visitors for the acquisition of consumption goods and services, as well as valuables, for and during tourism trips.
- 2.11. Another key concept concerns **usual environment**. It is defined as the geographical area (though not necessarily a contiguous one) within which an individual conducts his/her regular life routines. It complements the concept of residence applied in economic statistics and the concept of usual residence as applied in household statistics (which refers to the place at which people reside).

- 2.12. Additional details on the definitions of visitors, trips and usual environment are provided in IRTS2008 Chapter 2 together with description of relevant inclusions, exclusions and recommended treatments. These same definitions and treatments apply in the SF-MST.

2.2.2. The TSA framework

- 2.13. The compilation of tourism satellite accounts has long been recognized as the tool for measuring the economic contribution of tourism, and an excellent basis for assessing its wider indirect and induced impacts on the economy. The international standard for compiling TSA is described in the Tourism Satellite Account: Recommended Methodological Framework 2008 (TSA:RMF) published by the UN, Eurostat and the OECD in 2010. Importantly, it builds directly on the IRTS2008 and complements that system of statistics by providing the link to the National Accounts, detailing the mechanism for bringing together tourism supply and demand data in order to obtain the tourism share of different industries that can then be aggregated to form Tourism Direct GDP, and presenting corresponding accounts and analytical tables.
- 2.14. Indeed, the TSA:RMF was necessary because the standard descriptions and classifications of economic activities do not explicitly identify “tourism” as an economic activity. Since tourism is defined from a demand perspective, and hence encompasses production activity across a range of industries within the standard industrial classification and the industry based view of economic activity (such as accommodation, transport, retail and entertainment). In the standard industry view the groupings of activity are based on similar outputs and inputs, while for tourism a diverse range of inputs and outputs exists. The TSA provides the framework to identify tourism activity within these various industries, and for subsequently deriving the tourism component of different measures of economic activity (like value added, Gross Domestic Product) in a standardized way.
- 2.15. The descriptions in the TSA:RMF are designed to complement the national accounting principles and measurement boundaries described in the SNA 2008. It is essentially a conceptual framework for understanding tourism from a macroeconomic perspective. Further, the use of these accounting principles at the core of tourism statistics provides the basis for the SF-MST to adopt an accounting approach for the organization of information about the sustainability of tourism activity.
- 2.16. Key definitions within the TSA:RMF beyond those defined in the IRTS2008 concern:
- The definition and classification of tourism characteristic products and tourism characteristic activities (tourism industries)
 - The definition of tourism direct gross value added, tourism direct gross domestic product, tourism employment and gross fixed capital formation (investment) of tourism industries
- 2.17. The majority of visitor expenditure is on goods and services, referred to as tourism characteristic products. These are produced largely (but not exclusively) by tourism characteristic activities, also known as tourism industries. Tourism characteristic activities are those that typically produce tourism characteristic products and would not exist if there were no visitors. They are also referred to as tourism industries. There is a particular focus in the TSA:RMF on recording the production, income, employment, investment and value added of these industries.

2.18. Box 2.1 presents the top-level categories for tourism characteristic products and tourism activities. There is clearly a close link between the descriptions of products and activities since an activity is defined in relation to a primary product. However, there is not a one to one relationship. 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 these establishments will usually produce a range of products including accommodation services and food and beverage serving services.

Box 2.1. Categories of tourism characteristic consumption products and activities (tourism industries)	
Consumption products	Activities / Industries
1. Accommodation services for visitors	1. Accommodation for visitors
2. Food and beverage serving services	2. Food and beverage serving activities
3. Railway passenger transport services	3. Railway passenger transport
4. Road passenger transport services	4. Road passenger transport
5. Water passenger transport services	5. Water passenger transport
6. Air passenger transport services	6. Air passenger transport
7. Transport equipment rental services	7. Transport equipment rental
8. Travel agencies and other reservation services	8. Travel agencies and other reservation services activities
9. Cultural services	9. Cultural activities
10. Sports and recreational services	10. Sports and recreational activities
11. Country-specific tourism characteristic goods	11. Retail trade of country-specific tourism characteristic goods
12. Country-specific tourism characteristic services	12. Other country-specific tourism characteristic activities

Source: IRTS 2008, Annex 3 and 4.

2.19. The TSA:RMF covers a range of economic topics, framed into 10 interrelated tables as follows:

- Tourism expenditure (inbound, outbound, domestic) and other components of tourism consumption, by product (TSA:RMF Tables 1 to 4)
- Production, income and value added of the tourism industries (tourism characteristic activities) (TSA:RMF Tables 5 and 6)
- Employment (TSA:RMF Table 7)
- Gross fixed capital formation (TSA:RMF Table 8)
- Tourism collective consumption (TSA:RMF Table 9)
- Non-monetary indicators (TSA:RMF Table 10)

2.20. Across these different aspects, the TSA:RMF provides an agreed basis for defining the extent and structure of tourism activity. It also highlights particular issues such as the treatment of vacation homes, the recording of transactions with travel agencies and the treatment of consumer durables purchased for tourism purposes. The SF-MST does not alter these definitions and treatments. Rather the focus is on using this data to supporting assessments of sustainability and extending the IRTS and TSA datasets to organize additional data.

2.3. Measuring the sustainability of visitor flows and expenditure

2.3.1. Visitor flows

2.21. A strong starting point in understanding the sustainability of tourism-related activity will be gained through ongoing recording of visitors flows according to different types of visitors and their characteristics. The total number of visitors to a country or destination may be a key indicator of sustainability from an economic perspective when considered in relation to, for

example, total visitor expenditure, the income that can be generated for tourism businesses, the number of employment opportunities and the available infrastructure (e.g. transport and accommodation facilities). In addition, there will be connections to environmental and social dimensions of sustainability.

- 2.22. To support a range of analysis, flows of visitors should be recorded according to the various characteristics recommended in the IRTS2008. These will include visitor flows concerning:
- inbound visitors, domestic visitors and outbound visitors;
 - number of trips and nights; same-day visits;
 - country of residence; main purpose (for which nine main types are listed); types of 'tourism product'; duration of trip; origin and destination; modes of transport; and types of accommodation.
 - gender, age, economic activity status, occupation, annual income and education
 - timing of visits through the year.
- 2.23. As appropriate, these different characteristics of visits should be measured for visitor flows at both national and sub-national level.
- 2.24. The TSA:RMF Table 10a (Number of trips and overnights by forms of tourism and classes of visitors) and Table 10b (Inbound tourism: number of arrivals and overnights by modes of transport) demonstrate the type of data that can be used to support the monetary analysis of tourism which is the focus of the other TSA tables.
- 2.25. Countries are encouraged to expand this set using the information on characteristics of visitors and tourism industries as presented in the IRTS 2008. From an economic sustainability perspective, the key question is whether the mix of visitors flows is overly dependent on a specific type of visitor. In general, over-reliance on specific type of visitor may heighten the risks of sustaining tourism activity in a country or destination if circumstances change. For example, if visitors are predominantly from a particular country and relationships with that country change, visitor flows may be affected; or if visitors are predominantly arriving by air and issues arise with air transportation then economic sustainability may be affected. Thus, understanding the composition of visitor flows and how they are changing over time will help identify critical points of economic dependency.
- 2.26. At a national level, an important economic sustainability indicators concerning visitor flows include the **number of inbound visitors relative to total visitors**. A high ratio of inbound visitors may point to potential economic risks if circumstances change such that visitors from other countries were not able to travel.

2.3.2. Visitor expenditure

- 2.27. The natural extension of measuring visitor flows is the measurement of visitor expenditure. Ideally, for all of the categories of visitor flows listed above, data on visitor expenditure would also be collated. In the first instance, this data can provide richness to the discussion of economic dependency since the expenditure per visit ratio will likely vary for different types of visitors. Thus, from a purely economic perspective, there will be heightened risks around sustainability in case where the incomes of tourism businesses are dependent on high levels of expenditure from specific visitors.

- 2.28. More generally, information on visitor expenditure per visit in aggregate measured over time can point to changes in the composition of types of visitors and be used as an indicator of changes in the income arising from tourism activity. The core sustainability indicator concerning visitor expenditure is **average visitor expenditure, i.e. the ratio of visitor expenditure to total visitors.**
- 2.29. Table 2.2, reflects a summary presentation of TSA:RMF tables 1-3. It shows for different forms of tourism (inbound, domestic, outbound; tourists, same-day visitors) the levels of expenditure on different tourism products. This additional detail on the products purchased by visitors provides insight into which tourism businesses are likely to be affected if there are changes in levels of visitor expenditure, including vis changes in visitor flows.

Table 2.2: Data on visitor expenditure (local currency)

	Form of tourism						TOTAL
	Inbound trips		Domestic trips		Outbound trips		
	Tourists	Same-day visitors	Tourists	Same-day visitors	Tourists	Same-day visitors	
Tourism characteristic products							
Accommodation services							
Food and beverage serving services							
Railway passenger transport services							
Road passenger transport services							
Water passenger transport services							
Air passenger transport services							
Transport equipment rental services							
Travel agencies and other reservation services							
Cultural services							
Sports and recreational services							
Country-specific goods and services							
Other consumption products							
Valuables							
TOTAL							

2.4. Measuring the economic structure and performance of tourism industries

- 2.30. Data about visitor flows and visitor expenditure gives insight into the demand side of tourism and from this data conclusions may be drawn as to which economic activities are most likely to be affected if there are changes in tourism demand. However, to more fully understand the economic implications and to understand the potential economic response, it is necessary to know the types of businesses that supply tourism products and their economic performance over time.

2.4.1. Economic structure

- 2.31. Data on the characteristics of tourism businesses is most readily organized utilizing and extending the information available in a business register. A business register is a central listing, often maintained by the national statistical office or taxation office, that lists all businesses within an economy, classifies them to standard industry classes and attributes data about other characteristics.

- 2.32. Within the structure of a business register, for those businesses classified as being involved in tourism industries (following the classes listed in Box 2.1), it is possible to assess the economic structure of tourism using variables such as:
- industry class (e.g. by ISIC class)
 - size of establishment (e.g. in terms of turnover or employment)¹,
 - employment (e.g. by gender, occupation, skills, experience)
 - ownership (resident or non-resident), and
 - legal entity (corporation, unincorporated/household business)
- 2.33. A basic framing for the organization of data on the characteristics of tourism establishments is presented in Table 2.3. For tourism industries this table presents data on the number of establishments, their size in terms of number of jobs, whether the ownership is by resident or non-resident units and the type of legal entity. The table adapts and significantly extends the TSA:RMF Table 10d: Number of establishments in tourism industries classified according to average number of jobs.
- 2.34. An assessment of sustainability using the types of data in Table 2.3 could be made by considering whether there are imbalances in composition of tourism businesses. For example, ongoing economic sustainability may be affected if a significant portion of accommodation was owned by non-resident economic units.
- 2.35. The assessment of sustainability could also involve analysis of changes in the structure of tourism businesses over time and analysis of the demographics of tourism businesses in terms of how many new businesses are created, how many close, their average business life, etc. All of these measures will give insight into the stability of the economic structure and give a sense of its sustainability.
- 2.36. Where available, business registers are most commonly developed at a national level to include all economic units within a country. Since many aspects of assessing tourism's sustainability should be considered at a sub-national level, it will be appropriate to place focus on determining the geographical location of the operations of tourism businesses. Given the ongoing advances in geospatial economic statistics² there is likely the potential to develop location-based information on tourism establishments to support assessment at finer geographic scales and there is increasingly geo-location information about businesses stored within the business register.

¹ 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>

² See for example is about: <http://qqim.un.org/UNGGIM-expert-group/>

Table 2.3 Characteristics of tourism establishments

	Tourism industries												
	Accommodation for visitors	Food & beverage serving activities	Railway passenger transport	Road passenger transport	Water passenger transport	Air passenger transport	Transport equipment rental	Travel agencies & reservation services activities	Cultural activities	Sports and recreational activities	Other activities	Total tourism industries	
Number of establishments													
Size of establishments (# jobs)													
1-9													
10-49													
50-99													
100-500													
>500													
Ownership (# establishments)													
Resident													
Non-resident													
Legal entity type (# establishments)													
Corporation													
Household (unincorporated)													
Government													

2.4.2. Economic performance

2.37. In addition to recording information on the characteristics of tourism businesses, measures of economic sustainability must incorporate also data on the economic performance of tourism businesses over time. Following the measurement framework of the TSA, economic performance can be assessed in terms of

- Production and turnover
- Intermediate consumption,
- Compensation of employees
- Gross operating surplus and gross mixed income
- Value added
- Gross fixed capital formation.

2.38. The collation of data on these economic variables is summarized in accounting format in the TSA Table 5 relating to tourism supply. Table 2.4 presents these data detailing the tourism products produced by each tourism industry and the summary measures of economic performance for each industry. A key indicator of economic performance is the measure **Tourism Direct GDP** (derived from TSA Table 6) estimated by aggregating the value added for all tourism industries together with any other value added associated with visitor expenditure. In terms of assessing sustainability, it will be relevant to assess the share of value added accruing to compensation of employees and gross operating surplus, trends in output and intermediate consumption, and the extent of dependence on individual tourism industries in contributing to total tourism gross value added.

Table 2.4: Data on tourism supply (local currency)

	Tourism industries											Total tourism industries
	Accommodation for visitors	Food & beverage serving activities	Railway passenger transport	Road passenger transport	Water passenger transport	Air passenger transport	Transport equipment rental	Travel agencies & reservation services activities	Cultural activities	Sports and recreational activities	Other activities	
Output of Tourism characteristic products												
Accommodation services												
Food and beverage serving services												
Road passenger transport services												
Water passenger transport services												
Air passenger transport services												
Transport equipment rental services												
Travel agencies and other reservation services												
Cultural services												
Sports and recreational services												
Country-specific goods and services												
Output of Other consumption products												
Output of Valuables (and other non-consumption products)												
Total Output												
Total intermediate consumption												
Gross value added												
Compensation of employees												
Other taxes less subsidies on production												
Gross mixed income												
Gross operating surplus												

- 2.39. More generally, structural information about tourism demand and supply that is present in TSA accounts (especially Table 6) can be used to identify potential imbalances in tourism activity concerning, for example, different forms of visitors (inbound, outbound or domestic), or based on purpose of travel), the use of imports to support tourist demand, and the composition of value added across different tourism activities.
- 2.40. Beyond the main categories of tourism demand and supply presented in the TSA:RMF, extensions incorporating additional detail within tables 2.3 and 2.4 might be considered to focus on specific market segments such as activities related to **cruise ships and eco-tourism**. For this purpose the specific market segment would be included as an “of which “ column in either of the tables.
- 2.41. The measurement of eco-tourism activities is commonly associated with the measurement of tourism sustainability but in no way is the SF-MST limited to considering the data that allows for assessing sustainability elements of specific “tourism products” (IRTS paras. 3.22-3.23) like eco-tourism. While eco-tourism may be of common interest, and all relevant economic, environmental and social data sets will incorporate these activities, at this stage there is no single definition of either the supply or demand for eco-tourism from a statistical perspective that can support the organization of these data.
- 2.42. The measurement of the **sharing economy** (or new platform tourism services) is of particular interest as its significance in relation to overall tourism activity grows, although the precise scope of this activity is yet to be defined. In concept, the economic activity associated with the sharing economy is captured within the scope of the IRTS2008 and the TSA:RMF and hence conceptually included in the types of tables described above in relation to the measurement of sustainability. The development of measurement practice to collect and record relevant data continues to develop.
- 2.43. For activities in the sharing economy, it is clear that in particular locations there may be particular tourism management challenges associated with the activity (e.g. in relation to accommodation services) and capturing these effects and changes in the data is important

as part of assessing the sustainability of tourism in certain locations. Consequently, compilers should make special note of the coverage of the data and indicators such that appropriate interpretation is made. For example, exclusion of accommodation services used by visitors and accessed via the sharing economy may understate the level of service provision and affect understanding of any related environmental flows (e.g. water use).

2.4.3. Distribution of economic benefits

- 2.44. A key question for economic sustainability is the extent to which the benefits associated with tourism activity – for example in terms of wages and salaries to employees, profits to businesses and taxes to government – can be considered to be well distributed and expected to continue. For assessing these distributions, it is largely a question of examining the relative shares of benefits accruing to different economic units. Where shares are low, this may raise a concern that there is an imbalance in the distribution that, in turn, might affect whether the associated economic units have sufficient incentive to continue to supply inputs to tourism activity.
- 2.45. For some countries and destinations there may be interest in compiling measures of **tourism leakage** where the value added generated from tourism activities does not accrue to local economic units but rather is earned by non-resident units. Ideally, tourism leakage would be assessed by distinguishing in Table 2.4 the gross value added, compensation of employees and gross operating surplus that accrues to resident and non-resident economic units. If this data is not available, more basic indicators may be derived, for example, using information on the ownership of tourism businesses from Table 2.3.
- 2.46. Another form of tourism leakage will arise where the inputs (e.g. food, fuel) to tourism activity are imported in which case this will reflect a cost to the economy supplying the tourism product. Similarly, where jobs in tourism are undertaken by non-residents, this will indicate that the distribution of benefits from tourism activity are not accruing to residents.
- 2.47. Another form of distribution is temporal. In many locations, a key aspect in understanding the sustainability of tourism activity is the pattern of activity through the year. Where tourism activity is very uneven across the year this will tend to place some stress on those supplying tourism products if they do not have sufficient resources to maintain their incomes through the non-tourism periods of the year. Key indicators of seasonality will be demand-side variables such as visitor flows, visitor expenditure, average expenditure per tourist, and hotel occupancy.
- 2.48. Understanding the seasonal pattern of tourism activity will also be of relevance in considering the environmental and social dimensions of sustainable tourism. For example in relation to the use and availability of resources (such as water) in peak visitor periods, and to questions of access and mobility (e.g. traffic congestion). In addition, consideration of seasonal patterns in specific destinations will be of high relevance.

2.5. Measuring tourism investment in produced assets and related infrastructure

- 2.49. Within the multiple capitals framing of sustainability, the role of assets is central. Assets, reflecting the stocks that supply capital services, underpin the capacity of systems to generate benefits in the future. In this respect, an understanding of tourism related assets is critical to understanding the economic sustainability of tourism.
- 2.50. The investment in and depreciation of capacity through improvement or decline in the quantity and quality of assets is thus of particular interest in considering sustainability. To assess capacity, focus is placed on organizing data about the stock of assets – their quantity, size, quality and location. Further, understanding changes in assets over time allows informed decisions about investments in new assets or the re-investment in existing assets, particularly when considered in conjunction with information on expected patterns of demand for tourism products.
- 2.51. For the economic dimension a key focus is thus on tourism fixed assets and tourism related infrastructure. According to the TSA:RMF (para. 2.46), tourism driven investment can be classified in three main categories, as follows:
- *Tourism specific fixed assets* which are used exclusively or almost exclusively in the production of tourism characteristic products (e.g. cruise ships, hotel facilities, convention centres, marinas, ski lifts, vacation homes, etc.) (TSA:RMF 2.44). TSA:RMF Annex 5 provides a classification of tourism specific fixed assets in line with SNA 2008.
 - *Investments by tourism industries in non-tourism specific fixed assets* (e.g. computers, cars, furniture, hotel laundry services) which will reflect the balance of investment in fixed assets by tourism industries. Though no specific classification exists for tourism purposes, countries are encouraged to identify as specific classes of non-tourism specific fixed assets:
 - transportation equipment,
 - IT equipment and software,
 - buildings and other construction, and
 - other equipment.

Further, it is recommended that data about non-tourism specific fixed assets are classified by tourism industry

- *Tourism-related infrastructure* which is put in place principally by public authorities to facilitate tourism (TSA:RMF 2.45). These may have been developed for the specific purpose of supporting tourism activity, or they may facilitate or support tourism activity even though this was not the primary/sole objective of the investment. Primary types of tourism-related infrastructure are: airports, ports, railways stations and lines, roads, car parks, and utilities (water supply and treatment, electricity and energy supply, waste collection and treatment). Oftentimes, these assets are not expressed as a factor (cost) of production from the point of view of the industries catering to visitors, even though the existence and use of these assets may be very important for carrying out tourism activity. A clear example is the case of land transportation services, which requires roads but which does not factor in the cost of roads (if no fee is attached to their use) into the producer's production costs.

- 2.52. Although the measurement of investment in fixed assets is commonly challenging, the general ambitions of sustainability assessment require that attention be given to this task. Measures of investment (gross fixed capital formation) by asset type for the tourism industries can be compiled with associated compilation of measures of the capital stock of these assets. Relevant measurement guidance at the economy wide level is provided in the OECD manual on capital stock measurement³. For individual asset types and industries, the key requirements are to collect data on the levels of investment and the age and expected life of the assets. This combination of information can be used to underpin models of investment and capital stocks. Note that in some countries, there will be national accounts estimates of capital stock by broad industry groups, e.g. accommodation and restaurants, transports that may provide some general trends to support analysis and provide a starting point for compilation of estimates at the appropriate level of detail for tourism industries.
- 2.53. In many instances, tourism-related infrastructure is provided and maintained by governments as a public good for both visitors and non-visitors. As a result the investment in infrastructure may not be recorded as expenditure of tourism industries. Thus, in a first stage of measurement it is appropriate to identify the relevant infrastructure that is tourism related, irrespective of which economic unit has undertaken the investment. In a second stage, focus may be placed on estimating the extent to which tourism activities use or are dependent on specific types of infrastructure. This may be undertaken by measuring the share of use of infrastructure that can be attributed to visitors or tourism businesses.
- 2.54. Where data are not currently available to fully capture investment related to tourism (i.e. investments/assets by the tourism industries and investments/assets benefitting the tourism industries and visitors directly), a realistic and useful first step is the collection of data on the number, quality and capacity of tourism fixed assets and related infrastructure. Examples of such data include number of hotel beds/rooms, road extent and quality indicators, number of scheduled flights, cruise ship berths, number of taxis and tourism related buildings quality indicators (e.g. building age, capacity to withstand natural disasters).
- 2.55. For decision making purposes, and in support of the location-based assessment of tourism sustainability, information on the location of tourism specific assets and related infrastructure is likely to be important. Where possible and relevant, the data such as those just described could be organized for sub-national tourism areas and destinations. Location based information may be particularly applicable in risk assessments concerning the impacts of natural disasters and the longer-term impacts of climate change, especially since a large proportion of tourism activity takes place in coastal areas. As well, such information on tourism -related assets could support analysis of accessibility, safety and security, connectivity and other factors which can support and sustain tourism activities.

2.6. Measuring the employment aspects of tourism

2.6.1. Introduction

- 2.56. Tourism characteristic activities can be a major source of employment since the activities are generally service oriented and labour-intensive. Further, they can be a significant source of employment for disadvantaged and vulnerable groups such as women, young people,

³ <https://www.oecd.org/publications/measuring-capital-oecd-manual-2009-9789264068476-en.htm>

indigenous peoples and migrant workers that are often engaged in part-time, seasonal and casual employment. Consequently, governments are often interested in measuring the contribution of tourism in terms of generating jobs and providing people with access to income.

- 2.57. At the same time, important challenges exist since tourism jobs can be characterized by low wages, long working hours, a high turnover rate and limited social protection. Shift and night work, seasonality, temporary and part-time employment, as well as other non-standard forms of employment, including an increasing rate of outsourcing and subcontracting are also common in tourism. More recently, the ongoing digitalization of the economy and society is influencing tourism activities and the related employment.
- 2.58. The importance of measuring tourism employment was showcased at the 5th UNWTO International Conference on Tourism Statistics held in Bali, Indonesia in April 2009. Under the theme of “Tourism: an engine for employment creation”, the Conference highlighted in the Bali Statement the importance of tourism in generating employment, “especially for those segments of the population with less access to labour markets, such as women, young people, immigrants and rural populations”. Thus employment is not only an important theme from an economic dimension but is also of great relevance in securing inclusive economic growth and social development. Thus issues around wages, education, skills and decent work are all of relevance.
- 2.59. More recently, there has been growing interest in the extent of employment focused on environmental activities, such as environmental protection. This has led to the development of concepts around green jobs which are discussed further in Chapter 3 on the measurement of the environmental dimension.
- 2.60. Overall, governments, businesses and the community are looking for more reliable statistical measures of tourism employment, including on special features such as occupations, skills, level of education, income, compensation, hours of work of person employed and their conditions of work in the tourism sector. And, it is important that these measures are comparable to performance in the rest of the economy to provide appropriate benchmarking and reference points of measurement.
- 2.61. It is noted that within the multiple capitals framing of SF-MST, employment is underpinned by human capital. Using the concept of human capital is useful in interpreting information about the characteristics of employment that are commonly measured, and in making connections between the size and quality of the labour force and the potential to sustain tourism industries and local communities. Given the close connection between human and social capital and the various social aspects of employment, further discussion on human capital is included in Chapter 4 on the social dimension.
- 2.62. The focus in this section is on employment from an economic perspective as labour is a critical factor of production in tourism activity. This includes measurement of the key characteristics (skills, experience, demographics) of the tourism labour force that is available to support tourism industries. Discussion of employment in the environmental sector and green jobs is provided in Chapter 3 while a discussion of decent work and the link between employment and local livelihoods is provided in Chapter 4.

2.6.2. Characteristics of employment in tourism industries

- 2.63. For a more complete understanding of the sustainability of tourism with respect to employment, it is important to collate information on the characteristics of the tourism labour force. The IRTS2008 provides a list of recommended characteristics to summarise employment in tourism industries. These are:
- Employment by age group, sex and nationality/country of residence
 - Employment by type of establishment (size, formal/informal, etc)
 - Employment classified by occupation and status in employment
 - Permanent/temporary employment expressed in terms of number of jobs, hours of work, full-time equivalence, etc
 - Employment by educational attainment, skills
 - Hours of work (normal/usual, actually worked, paid for)
 - Working time arrangements
 - Compensation of employees (including wages and salaries)
 - Additional labour costs (e.g. worker transport, clothing, labour hire taxes)
 - Mixed income of self-employed persons
- 2.64. Statistical definitions and treatments for all of these characteristics are found in the relevant ILO and SNA publications. (References to be developed and included in annex or glossary)
- 2.65. The ultimate selection of characteristics that are relevant for an assessment of sustainability will need to be made by compilers based on context and on data availability. As an indication of how this information could be presented, Table 2.5 provides a set of core variables for the purposes of international comparison that will also support a wide range of discussions on the employment dimension of the economic sustainability of tourism. Some of these characteristics will also be relevant in the measurement of decent work, education and skills, discussed further in Chapter 4.
- 2.66. For SF-MST, particular note is made of the characteristics concerning education and occupation. There is generally a close link between education and skills held by an individual and their occupation. Together, these concepts help to provide a bridge between the demand and supply of labour and hence may be of considerable interest in the longer-term development of tourism and its potential for supporting economic and sustainable development more broadly. The International Standard Classification of Education (ISCED-97) is considered to be directly applicable in a tourism context. Approaches for the measurement of occupation in tourism industries is discussed further below.

Table 2.4 Characteristics of employment in tourism industries

		Tourism industries											
		Accommodation for visitors	Food & beverage serving activities	Railway passenger transport	Road passenger transport	Water passenger transport	Air passenger transport	Transport equipment rental	Travel agencies & reservation services activities	Cultural activities	Sports and recreational activities	Other activities	Total tourism industries
		Number of jobs											
Sex	Female												
	Male												
Age (years)	<20												
	20-29												
	30-39												
	40-59												
	>60												
Education level (ISCED-11 classes)	Basic												
	Intermediate												
	Advanced												
Occupation (by ISCO major groups)	Managers												
	Professionals												
	etc												
Job tenure (months)	<6												
	6-12												
	13-24												
	>24												
Salary (relative to average earnings)	<30% average earnings												
	30-50% average earnings												
	50-70% average earnings												
	>70% average earnings												
Residency status	Resident												
	Non-resident												
Hours of work	Part time												
	Full time												

2.6.3. Measures of employment for tourism

2.67. The importance of employment is reflected in the IRTS2008 and the TSA:RMF with chapters and sections dedicated to discussion of the measurement of employment and jobs (see IRTS2008 Chapter 7 and TSA:RMF Section 3.C.2). Tourism-related employment measures from the TSA:RMF and IRTS 2008 stem from the same statistical sources and use the same international employment concepts and classifications from the ILO. However, the methodology and the output of both approaches are somewhat different.

2.68. In the first instance, a key distinction must be made between the measurement of employment in tourism industries and tourism employment. Employment in tourism industries covers all jobs⁴ in tourism industries while tourism employment provides a measure of the number of jobs directly attributable to tourism demand in both tourism and non-tourism industries. Each measure serves a different purpose and countries may adopt one or more measure depending on the intended use and the data available.

⁴ A job is defined as a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self-employment.

- 2.69. Following the IRTS2008, employment in tourism industries can be measured in three ways with each measure relevant in different contexts. The key distinction between the measures is that one person employed may hold more than one job and, where this occurs, not all jobs will necessarily be in tourism industries. The three measures are the number of:
- *persons employed*⁵ in the tourism industries in any of their jobs
 - *persons employed* in the tourism industries in their main job
 - *jobs* in the tourism industries⁶.
- 2.70. Where the intent is to determine the number of people who depend to some extent for their livelihoods by working in the tourism industries, then a count of persons with a job (main or other) in these industries would be appropriate. A measure based on a person's main job would serve to gauge those with significant attachment to the tourism industries.
- 2.71. If the intent is to make a comparison between tourism and non-tourism industries or between the tourism industries and the economy overall, then a count of jobs in the tourism industries would be more appropriate since a focus on the number of persons employed would require an allocation of individuals across tourism and non-tourism industries.
- 2.72. Beyond counts of jobs and persons employed, the intensity of work will vary. Thus, it is likely to be relevant to collect data on the total number of hours worked in jobs by type of industry and over time. By then dividing by the full-time average hours worked per job an estimate of the full-time equivalent (FTE) employment can be derived which will equal the number of full-time equivalent jobs. Since employment in tourism is often characterized by part time work and also is often heavily affected by seasonality implying less than a full year of work will be undertaken, it will be important to make FTE adjustments for comparability purposes over time and across countries. IRTS2008, Figure 7.3 sets out the linkages between these different employment measures.
- 2.73. TSA:RMF Table 7 (Employment in the tourism industries) records (i) the number of jobs in tourism industries; (ii) the number of hours worked; and (iii) the number of full-time equivalent jobs. It also includes cross classification by sex and status of employment (either employees or self-employed).
- 2.74. In addition to measures of employment in tourism industries, it is important to consider the extent to which employment in the economy is attributable to tourism demand, a concept referred to as tourism employment. Measurement of tourism employment involves adjusting aggregate measures of employment in each industry using tourism shares to account for the reality that not all output of each industry is consumed by visitors, i.e. the total input of labour in each industry should not be solely attributed to visitor demand. To estimate the tourism share of employment it is recommended to apply the tourism output ratio for each industry on the assumption that, for each industry, there will be a stronger relationship between levels of output and employment relative to levels of value-added and intermediate consumption.
- 2.75. For the tourism industries alone, the measurement of tourism employment will generate a lower level of employment (since tourism shares will be <1). However, an economy wide measure of tourism employment should also include labour input within non-tourism industries (who supply goods and services to visitors).

⁵ Persons employed includes both employees and self-employed people.

⁶ IRTS 2008, Figure 7.1 provides a schematic showing the linkages between these measurement scopes.

- 2.76. For sustainability measurement purposes, a number of indicators may emerge from these data. Basic indicators include the total employment in tourism industries in terms of number of jobs and number of persons and the percentage of employed persons in tourism industries relative to the total economy. More analytically, it may be relevant to compare the total number of jobs to the total persons employed in tourism industries to provide insights into the nature of the labour market, how it is changing over time and what the future of work in the tourism industries might look like.
- 2.77. Further, it may be relevant to derive measures of labour productivity, i.e. output per unit of labour input (e.g. hours worked, jobs). Measures of labour productivity can provide insights in the potential to generate additional output in the future which in turn informs on the potential sustainability of tourism businesses and also the potential to secure future increases in wages and salaries for employees.
- 2.78. Labour productivity measures can be compiled based on data from TSA tables providing data on tourism output and value added, and data shown in the table above concerning tourism employment. Methods for measuring productivity have been fully articulated in OECD guidelines⁷. These can be readily compared over time and to other industries.

2.6.4. Measuring occupations within the tourism industries

- 2.79. Jobs are classified by occupation with respect to the type of work performed, or to be performed (ILO, 2007). Data on occupational groups within the tourism industries provides a policy and analytical connection between existing data on jobs in the tourism industries (discussed above) and related information on relevant skills-specific labour demand and supply in the tourism industries. In this context, it is valuable to collect and compile data about occupations and skills related to jobs in the tourism industries to:
- Understand the nature and type of jobs to be found in industries that cater to the needs of visitors and to monitor change over time; and
 - Examine labour demand and supply in terms of occupations, skills and training requirements.
- 2.80. To compile data about occupations and skills related to jobs in the tourism industries, the starting point is the use of national occupational classifications that are based on the International Standard Classification of Occupations (ISCO). These classifications group jobs into categories of occupations based on work tasks, duties performed and skill levels required.
- 2.81. At this stage, there is no specific recognition of tourism occupational categories, in part because of the special character of tourism as a cross-cutting economic activity. It is proposed therefore, as part of the SF-MST research agenda, to establish a list of tourism characteristic occupations for international comparability based on ISCO-08 using the approach underpinning the set of tourism characteristic activities (based on ISIC Rev. 4) and tourism characteristic products (based on CPC, Ver. 2). This should reflect also the ISCO-08 intention to develop thematic views for various activities, including tourism. Development of an internationally agreed tourism typology of characteristics for a tourism occupation should also be pursued.

⁷ <https://www.oecd.org/sdd/productivity-stats/2352458.pdf>

- 2.82. The development of a list of tourism characteristic occupations has been pioneered by Statistics Canada building on work conducted by the ILO and the UNWTO designed to improve the measurement of employment in tourism industries and to identify the characteristics of employment. The approach recommended by Statistics Canada to identify tourism characteristic occupations mirror the criteria recommended by UNWTO to identify tourism characteristic products.
- 2.83. Following this approach, a tourism occupation can be defined as one that would cease to exist or continue to exist only at a significantly reduced level of employment, as a direct result of an absence of tourism. Assuming the availability of employment data in tourism industries, the ratio of tourism's significance for each occupation may be estimated by (i) using tourism industry value-added ratios to determine tourism's share of each occupation in each tourism industry; and (ii) estimating the proportion of employment dependent on tourism in each occupation within the tourism industries. Through the application of this method, Statistics Canada identified 46 tourism characteristic occupations and 16 other tourism occupations.