Feasibility of Measuring Tourism Sustainability in the Kyrgyz Republic

A Technical Report

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Abbreviations and acronyms

COICOP	Classification of Individual Consumption by Purpose
CPC	Central Product Classification
Eurostat	Statistical Office of the European Communities
FDES	Framework for the Development of Environment Statistics 2013
GDP	Gross domestic product
GVA	Gross value added
GSCP-3	State Statistical Classification of Products, version 3 (NSC)
GKED-3	State Classification of Economic Activities, version 3 (NSC)
IKR	The Issyk-Kul region
ILO	International Labour Organization
IMF	International Monetary Fund
IRES	International Recommendations for Energy Statistics
IRTS 2008	International Recommendations for Tourism Statistics 2008
ISIC	International Standard Industrial Classification of All Economic Activities
KR	The Kyrgyz Republic
NSC	National Statistics Committee of the Kyrgyz Republic
MICT	Ministry of Information, Culture and Tourism of the Kyrgyz Republic
OECD	Organization for Economic Co-operation and Development
SEEA	System of Environmental-Economic Accounting 2012
SEEA-AE	System of Environmental-Economic Accounting 2012: Applications and Extensions
SF-MTS	Statistical Framework for Measuring the Sustainability of Tourism:
SNA 2008	2008 System of National Accounts 2008
TDGDP	Tourism direct gross domestic product
SDG	Sustainable Development Goals
SUT-KR-2916	NSC Supply and Use Tables for 2016
TDGVA	Tourism direct gross value added
TSA: RMF 2008	Tourism Satellite Account: Recommended Methodological Framework, 2008
UNSC	United Nations Statistical Commission
UNSD	United Nations Statistics Division
TDGVA	Tourism Direct Gross Value Added
TDGDP	Tourism Direct Gross Domestic Product
UNWTO	World Tourism Organization
WB	World Bank

Content

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This report was prepared by a World Bank Group team led by Drita Dade (Sr. Natural Resources Management Specialist) and Juan-Pablo Castaneda (Environmental Economist), and included Saida Ismailakhunova (Sr. Economist), Vladimir Markhonko (Consultant) and Renato Vargas (Consultant). The team benefitted from the insights of Pablo Cesar Benitez, Peter Kristensen, Sofia Ahlroth, and Elena Strukova Golub. The report was reviewed and edited by Ekaterina Sleta and Manon Pascale. The team would like to thank Irene Alvarado-Quesada, Central Bank of Costa Rica for her kind review and comments. The report was prepared under the guidance of Kseniya Lvovsky, Practice Manager, Raffaello Cervigni, Lead Environment Economist, Naveed Hassan Naqvi, Country Manager, and Salman Zaidi, Practice Manager.

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Foreword

This publication is one of the various technical reports developed under the WAVES Plus support to Natural Capital Accounting (NCA) for Forests and Tourism. The technical work on NCA in the Kyrgyz Republic examined the policy relevance for developing NCA in the country, applied the standard methodologies and obtained some interesting initial findings. The results of this work and the continuous engagement with Government contributed to determine feasibility of future implementation, helping to obtain recommendations for future work in the form of a preliminary roadmap for NCA implementation. The reports also provide clear recommendations for improvements of data collection by staff of the National Statistic Committee, State Agency of Environmental Protection and Forestry, and Department of Tourism to better account for the respective sector contribution and inform appropriate decision-making process.

This work is among the first systematic compilations of the System of Environmental-Economic Accounting (SEEA) for forests and tourism in the Kyrgyz Republic, in accordance with the United Nations international standards. The work on tourism accounts reviewed the methodology of calculation of the tourism share to economy and identified tourism satellite account tables that will enable reporting in compliance with the United Nations World Tourism Organization's (UNWTO) Tourism Satellite Accounting (TSA) Framework and standards. The work on forests is based on best practices and complementary guidance from the United Nations Food and Agriculture Organization (FAO), such as the SEEA handbook for Agriculture, Fisheries and Forests.

Executive summary

The Kyrgyz Republic is a landlocked, largely mountainous country with rich natural resources that include a variety of landscapes and ecosystems - mountains and glaciers, alpine pastures, lakes and rivers, arid canyons, and semi-deserts. The country also hosts a rich historical and cultural heritage of Asian nomadic traditions and many ancient civilizations. Despite these ample natural and cultural values, tourism contribution to economic growth is still relatively small. Tourism has the potential to become one of the key sectors that will generate growth and jobs and the Government of the Kyrgyz Republic has identified tourism as one of the four development priorities. The tourism industry could be based on the sustainable management of the country's rich natural capital, including forests and landscapes.

The country needs a high-quality and reliable tourism sector data system to be able to measure and trace its contribution to the overall economy. Thus, it is necessary to introduce appropriate methodologies and conceptual frameworks to be used for efficient and regular data collection on forests and tourism state and trends aligned with international standards, allowing integration and comparability. For this it is necessary that the Central Government institutions related to the tourism value chain integrate and embed the demand for better tourism data on par with international standards in their policies, prompting a concurrent financial and technical strengthening of the National Statistical System of the Kyrgyz Republic with support from Parliament as reflected in the state budget.

This report has assessed the feasibility of measuring tourism sustainability[1], by examining the potential to develop Tourism Satellite Accounts (TSA). Lessons learned during this assessment allowed to recommend a roadmap and methodology for the future development of tourism statistics in the Kyrgyz Republic. The report assessed the information collected during interviews with the members of the national statistical system (NSC) of the Kyrgyz Republic (part of the assessment of the country's capacity to compile the global SDG indicators in October – November 2019) and a review of the data sets relevant to measuring tourism sustainability, as well as methodological notes on national accounts, tourism, environment and energy statistics available on the NSC website[2] conducted in April-May 2020. Additionally, the UN Checklist on National Quality Assurance Framework (NQAF) was also completed to strengthen the analysis and inform the TSA experimental implementation. The instrument revealed that, at the moment, quality of the data is unsatisfactory for this specific purpose. Some of the more relevant findings reveal that:

- The importance of tourism sustainability is recognized as one of four top priorities in *the National Development Strategy of the Kyrgyz Republic for 2018-2040* (NDS 2018-2040). Furthermore, the recently adopted *Tourism Development Program of the Government of the Kyrgyz Republic for 2019-2023* (TDP-2019-2023) identified a number of actions

[1] Terms "measures of sustainability of tourism" and "measures of tourism sustainability" are used in this report (as well as by UNWTO) as synonyms.
[2] Available here, here, here, and here.

aiming to promote tourism sustainability. These two documents provide a political stepping stone to pursue tourism sustainability as an integral part of the country's development strategy.

- However, indicators meant to measure tourism sustainability included in the above-mentioned documents are limited for the effective monitoring and evaluation of progress made towards tourism sustainability as it is defined by the UNWTO.

- Currently available tourism and environmental statistics, while useful in many respects, do not comply with the recently developed international statistical standards and good practices. Notwithstanding, initial efforts have been made to evaluate the tourism sector's contribution to the county's GDP, to produce an energy balance and to compile energy accounts following SEEA-Energy recommendations (however, the results of this work are not available on the NSC website).

- Data gaps are mostly due to delayed implementation of newer methodological developments, shortage of personnel and funding to improve data collection and processing.

- NSC staff needs additional training with respect to methodology and data collection techniques relevant to the compilation of SEEA application in general and the environmental dimension of the experimental tables of the Tourism Satellite Account in particular. If the Government and development partners assist NSC in this respect, then progress can be made in the long run.

- The experience gained by NSC staff during the assessment of the capacity of national statistical system to compile the global and national SDG indicators is valuable to advancing the work on measures of tourism sustainability.

These findings prompt the NSC to take advantage of the modularity of the TSA-RMF 2008 and SEEA-2012 methodologies by adopting a long-term perspective for their implementation. An integrated sequential approach to improve tourism, environment and energy statistics focusing in those aspects of the manuals that are most relevant to the Kyrgyz Republic will reduce the duplication of efforts and create synergies across units and agencies. As the country progresses, new modules can be added and existing ones strengthened, making sure that (a) information collected by respective units of NSC is integrated into the national accounts framework according to a consistent set of concepts, definitions and classifications of the SNA, (b) surveys and estimation methods are harmonized regarding units of measurement and their equivalences for consistent statistics. In accordance with the above, it is critical that resources are mobilized and that additional training to NSC staff is provided, so that sufficiently-disaggregated data in compliance with IRTS 2008, FDES 2013, and IRES can be collected. This will provide the basis

for the compilation of the indicators of tourism sustainability and extended TSA tables covering the environmental dimension of tourism sustainability. A planned integrated approach will help to ensure that all needed data will be available at the same time.

Appropriate institutional arrangements should be put in place in connection to the Inter-Agency Working group on tourism statistics (which is being revitalized now in connection with the work on the TSA). This group should review its work program and include actions to promote the adoption of improved methods as well as better data collection mechanisms, processing capabilities and a quality assurance framework relevant to tourism sustainability.

A general conclusion is that TSA development is feasible, and the quality of its implementation will depend on the degree of institutional commitment and resources assigned to that effect, not only by the NSC, but also other government bodies linked to the tourism value chain including the Central Government. Feasibility of establishing a work program for measuring tourism sustainability along the lines of the UNWTO *Statistical Framework for Measuring the Sustainability of Tourism* (SF-MST)[3] will have improved success prospects if: (a) the concept and measures of tourism sustainability are incorporated in governmental policy documents, (b) interagency collaboration is strengthened throughout the entire statistical process, (c) basic economic, tourism, environment and energy statistics are regularly compiled in a way that can provide the necessary data, and (d) capacity building on measures of tourism sustainability in a broader context of the wealth accounting, in particular in the context of *the System of Environmental and Economic Accounts* (SEEA).

Some quick-wins can result from preparing (a) a position paper on SEEA implementation at NSC to provide a conceptual framework for further work, and (b) a set of indicators of tourism sustainability based on the UNWTO and EU indicator lists as this will provide reality check on what is possible and yield some concrete results in terms of data. As work on the TSA advances, environmental flows can be incorporated in the core tables following the SEEA guidelines and the UNWTO recommendations on linking TSA and environmental accounting. In order to gain user engagement and help mobilize resources, it is critical to publish the estimates of experimental TSA tables and the environmentally extended TSA tables as soon as the estimation methodology becomes consistent with the TSA-RMF 2008.

[3] See here.

1 Introduction

The Kyrgyz Republic is a landlocked, largely mountainous country with rich natural resources that include a variety of landscapes and ecosystems - mountains and glaciers, alpine pastures, lakes and rivers, arid canyons and semi-deserts. The country also hosts a rich historical and cultural heritage of Asian nomadic traditions and many ancient civilizations. Despite these ample natural and cultural values, tourism contribution to economic growth is still relatively small. Tourism has the potential to become one of the key sectors that will generate growth and jobs and the Government of the Kyrgyz Republic has identified tourism as one of the four development priorities. The tourism industry could be based on the sustainable management of the country's rich natural capital, including forests and landscapes. The country needs a high-quality and reliable tourism sector data system to be able to measure and trace its contribution to the overall economy. Thus, it is necessary to introduce appropriate methodologies and conceptual frameworks to be used for efficient and regular data collection on forests and tourism state and trends aligned with international standards, allowing integration and comparability.

The main objective of the report is to assess the feasibility of measuring tourism sustainability in the Kyrgyz Republic, which aims to determine:

- Whether the importance of tourism sustainability is understood by policy makers and whether the concept of tourism sustainability and measures to monitor and evaluate the progress towards a more sustainable tourism are incorporated the governmental policy documents;
- Assess adequacy of the currently available measures of tourism sustainability in the Kyrgyz Republic and the feasibility of their further development and improvement;
- Provide recommendations on what international statistical standards should be applied and how data sources should be improved to ensure that tourism sustainability is measured more accurately.

The expected report audience includes: (a) tourism policy makers, primarily the management and staff of Tourism Department of the Ministry of Information, Culture and Tourism (MICT) the Kyrgyz Republic, (b) managers of National Statistical Office who are responsible for the development of tourism and environment statistics and national accounts, (c) representatives of tourism industry in the Kyrgyz Republic and; (d) staff of The World Bank office in the Kyrgyz Republic who manage tourism related projects in the country. In this connection it is suggested that the present report is circulated to the members of the Inter-Agency Working group on tourism statistics, which will decide on any possible follow-up.

1.1 What are the problems of the tourism sector in the Kyrgyz Republic?

Tourists are attracted to the Kyrgyz Republic especially because of its mountains, lakes, semi-nomad Steppe life and history, as well as its rich Silk-Road history. It draws tourists from Russia,

Kazakhstan, Ukraine, Tajikistan, Uzbekistan, China, Turkey, USA, Germany and India to experience horse riding, ski touring, cross country, heli-skiing, and classical skiing. This influx of tourists provides a source of income for travel agencies, tour operators, car rentals, transport companies, airlines, hotels, private homestays, yurt camps, restaurants, equipment and clothes stores, ski bases, ski touring destinations, local guides, winter festivals, spas and thermal pools across the entire value chain. In 2016 the income from services to foreign tourists amounted to 415.6 million USD[4].

However, the tourism industry faces several challenges. One of the most important is related to climate, since the harsh winter conditions shorten the tourist season to the months of June and September. This results in a difficulty to attract higher-skilled workers who prefer year-long employment, leaving low-skilled workers in charge who have trouble meeting customer quality expectations. This in turn results in unused capacity of accommodation that makes it more difficult for investors to see returns and consequently leave infrastructure in disrepair that does not meet higher income tourism expectations and detracts from the natural appeal of tourism regions[5].

The short tourist season also creates an influx of mass beach tourism in mountainous regions such as the Issyk-Kul area, who concentrate unevenly on a few spots causing environmental degradation. A lack of public tourism infrastructure and private investments in less visited areas do not allow to reduce that pressure[6].

In order to boost local economies through eco-tourism, mountain tourism, and ski tourism, a careful orchestration of public and private investment in human capital, infrastructure, and environmental protection has to happen. Quality information and indicators are key to maximize sustainability and profitability. Small-scale, community-based tourism that is ecologically and culturally friendly has been identified as a potential for growth, focusing in the semi-nomadic life style and environment. This type of tourism would provide local people with diversified income and an incentive to protect the environment, as well as historic and cultural areas[7].

1.2 Why is the country dedicating efforts to measure tourism sustainability?

The *National Development Strategy of the Kyrgyz Republic for 2018-2040* (NDS 2018-2040) adopted by the Kyrgyz Republic parliament and signed by the President identifies sustainable development of tourism as **one of four developmental priorities for the period of 2018 – 2040** (see Section 3.3. of the NDS).

[4] ILO, 2017, "Responsible Winter Tourism in Kyrgyzstan. Feasibility and Market System Analysis" available here.
[5] YEŞILTAŞ, 2009, "Obstacles to the Tourism development in Kyrgyztan" available here.
[6] Turdumambetov, 2014, "Tourism Development in the Post-Soviet and Post-Revolutionary Country: A Case Study of Kyrgyzstan" available here.
[7] Shokirov et al., 2014, "Mountain Tourism and Sustainability in Kyrgyzstan and Tajikistan: A Research Review" available here.

In particular, NDS 2018-2040 provides a vision statement[8] on sustainable development of tourism stating that in future tourism industry "contributes significantly to sustainable development of the national economy, to providing employment and growing incomes of the population, promoting tourism-related industries and areas development, and inflow of domestic and foreign investments". Further, NDS 2018-2040 envisages that infrastructure will be created to leverage the different competitive advantages of the country and its various types of tourism, including "resort and recreational tourism, mountain adventure tourism, and cultural tourism". A long-term planning strategy will be implemented, which willtake "into account the recreational capacity and environmental potential of the territories". Sustainable tourism will contribute to reducing economic disparities between mountainous and lowland areas of the country, providing support for mountain communities to develop tourism infrastructure, logistics, and value chains..

This statement provides the highest political rationale for tourism government bodies to monitor and evaluate progress through adequate official statistics.

Tourism Development Program of the Government of the Kyrgyz Republic for 2019-2023[9] (TDP-2019-2023) represents the governmental tool aiming to put the NDS vision of sustainable development of tourism in practice. It should be noted that (TDP-2019-2023) incorporates the UNWTO concept of sustainable tourism and states that[10]:

- Taking into account the importance of the regional development, the Program primarily aims to raise standards of living of the population and implement its potential, **ensure environmental sustainability** and reproduction, as well as expand diversity of cultural life forms on the ground;
- The tourism industry must comply with the international standards of service and carefully use the existing natural potential of the country.

Section III of TDP 2019-2023 entitled "Strategic benchmarks and problems of tourism development" recognizes the importance of tourism sustainability as a key factor for sustainable development as it addresses socio-cultural, environmental and economic problems of the country. The Program further states that the Kyrgyz Republic **will promote tourism sustainability as it is essentia**l for:

- Preservation of cultural valuesand national identity.
- Ensuring optimal use of the natural resources that are the basis for tourism development.
- Engaging local population in sustainable employment, thereby contributing to the expansion of the economic opportunities for local residents and poverty reduction.

[8] See section on sustainable development of tourism available here.
[9] Program of tourism development for 2019-2023 is available here.
[10] See: The Tourism Development Program of the Government of the Kyrgyz Republic for 2019-2023.

TDP 2019-2023 states that the tourism sector "should be environmentally oriented and developed, taking into account relevant environmental requirements". However, it acknowledges that a **number of persistent problems are not resolved** including:

- Environmental pollution from household waste;
- The lack of land use regulation regarding recreational activities and tourism infrastructure development in protected natural areas;
- Non-compliance of rules for visitors of specially protected natural destinations.

A special section of the action plan outlined in TDP 2019-2023 is entitled *Ensure environmental safety for tourism development* and it envisages number of activities which will promote sustainable tourism, including:

- Protection of national parks and reserves, including their flora and fauna.
- Reconstruction and rehabilitation of the infrastructure for effluent treatment in the Issyk-Kul lake and Son-Kul lake areas, as well as in other areas that are heavy in accommodation services.
- Development of a methodology to assess the natural recreational capacity of the existing and potential tourism and recreation areas.
- Promotion of the image of the country as a place of conservation of snow leopard and other rare animal species.

The Program contains a special section focused on monitoring and evaluation of the program and acknowledges the importance of using indicators for this purpose. Its action plan includes an activity entitled "Improve tourism statistics methodology **taking into account the recommendations of the World Tourism Organization (UNWTO)**".

It is of special importance in the context of this report that TDP 2018-2023 identifies the development of tools for monitoring and evaluation of the program as one of its main objectives including[11]:

- Development of a methodology for the collection and estimation of additional tourism indicators in line with the methods used by international organizations, such as UNWTO and the World Travel and Tourism Council (WTTC).
- Introduction of international standards for the system of accommodation facilities classification (hotels, motels, guest houses) in order to assign them a status in accordance with modern requirements.

These policy statements create a demand for measures of tourism sustainability based on international statistical standards and the necessary resources for their institutionalization. In this context, it is important that development partners, such as The World Bank and USAID assist the

[11] See Section V of the program entitled "Program objectives"

National Statistics Committee and the Tourism Department of MICT in the application of the best practices in this area of statistical work.

Current measures to monitor and evaluate tourism sustainability used in Tourism Development Program of the Government of the Kyrgyz Republic for 2019-2023 are limited. The TDP 2019-2023 contains 17 indicators intended for monitoring and evaluation of the country's progress towards its established objectives, which are shown in Table 1.

Table 1. List of indicators used in TDP 2019-2023

1	Gross value added to GDP by tourism industry (million som)
2	Investment in fixed assets in tourism (million som)
3	Contribution of tourism to the state budget (taxes)
4	Number of roads leading to tourism objects
5	Number campsites
6	Number of countries with visa-free entry
7	Number of tourists from countries with visa-free entry
8	Export of tourism services (income from foreign citizens, million dollars)
9	Index of tourism safety according to World Economic Forum
10	Number of training and teaching seminars on tourism
11	Number of geoparks
12	The number of tourist parks with the necessary amenities for tourists
13	The number of business entities in the field of tourism, by territory
14	The number of investment projects implemented in the tourism sector
15	The number of citizens arriving from countries near and far abroad that fall under the classification of the World Tourism Organization (UNWTO)
16	The volume of state budget expenditures on advertising and promotion of Kyrgyzstan abroad, as a country for tourism
17	Positive feedback on the provision of travel services (cafes, restaurants, accommodation, etc.) - Booking.com platform, TripAdvisor.ru, Foursquare, Airbnb.ru

Source: Tourism Development Program of the Government of the Kyrgyz Republic for 2019-2023.

While these indicators are important for the overall goal of monitoring and evaluation of tourism in the Kyrgyz Republic, the possibility of measuring the sustainability of tourism with them is limited. For example, they do not provide proper measures to monitor goals such as those stated in TDP 2019-2023 regarding:

- The assessment of the economic contribution of tourism to the economy is not in compliance with the UNWTO recommendations (no TSA account) and there is no measure of employment in tourism related activities;
- The optimal use of those natural resources that are the basis for the development of tourism as there are no measures of its impact on their use;
- The lack of measures on the environmental impact of tourism such as pollution caused by tourism activities or the utilization of land (including forests) for tourism purposes (as well as the associated costs and benefits);

Furthermore, TDP 2019-2023 highlights the need for protection of national parks and reserves, including their flora and fauna, as well as the reconstruction and rehabilitation of the infrastructure for effluent treatment. However, available data are insufficient to distinguish impacts from tourism from impact of non-tourism activities, in order to assess it and recommend policy actions. Table 2 shows the available indicators and their limitations.

Table 2. Environment statistics for the compilation of measures of tourism sustainability

Indicators / measures	**Notes**
Total area of forest reserve areas	Total area of forest reserve areas only. No breakdown by territorial units that can be linked to tourism destinations
Number of forest reserve areas	Number of forest reserve areas only, no breakdown by territorial units
Volume of toxic production waste	Volume of toxic production waste; no break down by economic activities for use in extended TSA
Protection and rational use of forestry resources	Not available on the website
Protection and rational use of water resources	Protection and rational use of water resources; potentially useful totals but need disaggregation by economic activities and territorial units to link to TSA and tourism destinations
Air pollution protection	Air pollution protection; potentially useful totals but need disaggregation by economic activities and territorial units to link to TSA and tourism destinations
Fixed capital investments for environment and nature protection, rational use of nature resources	Fixed capital investments for environment and nature protection, rational use of nature resources; potentially useful totals but need disaggregation by economic activities and territorial units to link to TSA and tourism destinations
Share of investment in fixed assets for environmental protection	Share of investment in fixed assets for environmental protection: potentially useful totals but need disaggregation by economic activities and territorial units to link to TSA and tourism destinations
The number of furred animals	The number of furred animals; might be useful if can be disaggregated by localities to link to tourism destinations
The number of feathered animals	The number of feathered animals: might be useful if can be disaggregated by localities to link to tourism destinations
The number of ungulate animals	The number of ungulate animals: might be useful if can be disaggregated by localities to link to tourism destinations
Presence of residuals of forth class	Presence of residuals of forth class; potentially useful as data disaggregated by regions; need finer territorial units for possible association with tourism destinations; need to be disaggregated by economic activity to be linked to TSA
Presence of residuals of third class	Presence of residuals of third class; potentially useful as data disaggregated by regions; need finer territorial units for possible association with tourism destinations; need to be disaggregated by economic activity to be linked to TSA
Presence of residuals of first class	Presence of residuals of first class; potentially useful as data disaggregated by regions; need finer territorial units for possible association with tourism destinations; need to be disaggregated by economic activity to be linked to TSA

Indicators / measures	Notes
Presence of residuals of second class	Presence of residuals of second class; potentially useful as data disaggregated by regions; need finer territorial units for possible association with tourism destinations; need to be disaggregated by economic activity to be linked to TSA
Expenditures of enterprises and organizations for environmental protection	Expenditures of enterprises and organizations for environmental protection; potentially useful, need disaggregation by economic activities and territorial units
The state budget expenditures on environmental protection	The state budget expenditures on environmental protection; might be useful if can be recompiled by territorial units (as applicable); not clear if can be linked to tourism activities (even conceptually)
Reforestation	Reforestation, potentially useful if disaggregated by territorial units for possible linking with tourism destination

Source: National Statistical Committee of the Kyrgyz Republic available here.

1.3 How will measures of sustainable development be used?

The measurement of tourism sustainability is based on the definition of the joint UNWTO/UNEP publication "Making tourism more sustainable: A guide for policy makers"[12]. This document explains tourism sustainability from three dimensions; namely, environment, economy and culture. From the UNWTO/UNEP perspective, tourism can be treated as sustainable when it[13]:

- Makes optimal use of key environmental resources for the development of tourism, maintaining essential ecological processes, and preserving natural resources and biodiversity;
- Respects the socio-cultural identity of host communities, preserves their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance;
- Ensures viable, long-term economic operations, providing socio-economic benefit to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism is promoted by many international, supranational and regional organizations, with the UNWTO[14] and the Global Sustainable Tourism Council[15] playing a leading role in their

[12] Available here.
[13] See: UNWTO/UNEP *Making tourism more sustainable*, Box 1.1 "The World Tourism Organization's definition of sustainable tourism", page 11
[14] Available here.
[15] The Global Sustainable Tourism Council (GSTC) establishes and manages global sustainable standards, known as the GSTC Criteria. There are two sets: Destination Criteria for public policy-makers and destination managers, and Industry Criteria for hotels and tour operators. Details are here.

respective areas of competence. UNWTO identified the following requirements in ensuring sustainability for the tourism industry:

- Preserving natural and cultural resources;
- Limiting negative impacts at tourist destinations, including the use of natural resources and waste production;
- Promoting the wellbeing of the local community;
- Reducing the seasonality of demand;
- Limiting the environmental impact of tourism-related transport;
- Making tourism accessible to all;
- Improving the quality of tourism jobs.

Promotion of sustainable tourism is both an important and challenging task for policy makers, tourism industry and for the wider civil society in the Kyrgyz Republic. It gained even more prominence in connection with the identification of tourism as one of the drivers of socio-economic development in the country as stated in *National Development Strategy of the Kyrgyz Republic for 2018-2040*[16]. More details on the sustainable tourism policy are provided in the recently adopted *Tourism Development Program of the Government of the Kyrgyz Republic for 2019-2023*[17] (TDP-2019-2023).

In its earlier publication, the UNWTO defined indicators as[18] "measures of the existence or severity of current issues, signals of upcoming situations or problems, measures of risk and potential need for action, and means to identify and measure the results of our actions". Indicators are information sets which are formally selected to be used on a regular basis to measure changes that are of importance for tourism development and management. They can measure: a) changes in tourism's own structures and internal factors; b) changes in external factors which affect tourism and; c) the impacts caused by tourism. Both quantitative and qualitative information can be used for sustainability indicators. An indicator is normally chosen from a range of possible data sets or information sources because it is meaningful with regard to the key issues to which tourism managers must respond. The use of that indicator can lead to actions to anticipate and prevent undesirable (or unsustainable) situations at destinations.

Some of the benefits from good indicators include[19]:

- Better decision-making - lowering risks or costs;
- Identification of emerging issues - allowing prevention;
- Identification of impacts - allowing corrective action when needed;
- Performance measurement of the implementation of plans and management activities – evaluating progress in the sustainable development of tourism;

[16] See section on sustainable development of tourism available here.
[17] Program of tourism development for 2019-2023 is available here.
[18] See: UNWTO Guidebook on Indicators of Sustainable Development for Tourism Destinations (2005), page 8.
[19] See: UNWTO Guidebook on Indicators of Sustainable Development for Tourism Destinations (2005), page 9-10.

- Reduced risk of planning mistakes - identifying limits and opportunities;
- Greater accountability - credible information for the public and other stakeholders of tourism fosters accountability for its wise use in decision-making;
- Constant monitoring can lead to continuous improvement - building solutions into management.

But, recognizing the importance of identifying indicators for measuring the sustainability of tourism, the SF-MTS promotes the development of standards for a framework that integrates economic, environmental and social statistics at relevant spatial levels (including local, national and global) that are required for assessment of sustainable tourism. This approach provides a set of indicators of tourism sustainability. The feasibility of compilation of environmentally extended TSA is the focus of a separate section of this report.

2 Towards a system of tourism sustainability indicators in the Kyrgyz Republic

2.1 Initial findings

An initial exploration of the available information allowed for the compilation of several elements that are useful for the analysis of tourism sustainability in the Kyrgyz Republic. First, an initial exercise by the NSC allowed to estimate the impact of tourism on the economy. It is important to note that from 2010 to 2018, the contribution of tourism has risen from 3.7% to 5% using a definition of the tourism sector made by the NSC as shown in Table 3.

Table 3. Gross value added in tourism and the share of tourism in GDP as a percentage as estimated by NSC

Indicators	2010	2015	2016	2017	2018
Gross Domestic Product (million som)	222,743.24	432,582.98	471,169.57	526,462.00	555,552.00
Gross value added to GDP in tourism sector (million som)	8,241.5	20,331.4	21,673.8	26,323.1	27,777.6
GVA added to GDP in tourism sector, in % of GDP	3.70%	4.70%	4.60%	5.00%	5.00%

Source: National Statistics Committee of the Kyrgyz Republic.

The calculations made by NSC were the first step in the right direction. The experience gained can be used as a stepping-stone for further work on the basis of the new international recommendations (contained in IRTS 2008 and TSA 2008). There are caveats regarding the lack of inclusion of some sectors that are required by TSA 2008; lack of demand data from visitor surveys, some conceptual deficiencies with the inclusion of taxes and subsidies, and impact on employment. Due to these shortcomings, the currently applied methodology of estimating the tourism contribution to GDP significantly diverges from the internationally adopted standards. As a result, published indicators are not comparable with the similar indicators available from other countries[20].

During the preparation of this report, a set of experimental tables using the recently compiled Supply and Use Tables with reference year 2016 was made. As shown in Table 4, Tourism Direct Gross Domestic Product (TGDP) calculated on the basis of only internationally comparable tourism activities represents about 2% of total GDP, while if the contribution of all tourism related activities are included, the share of TDGDP in total GDP is increasing and falls between 3% - 4%[21]. The share of Tourism Direct Gross Value Added in total GVA generated in the Kyrgyzstan

[20] It should be noted however, that it is not only the case of Kyrgyzstan. Many countries compile TSA's with diverge to various degrees from the UNWTO recommendations. See: UNWTO publication *TSA Data around the world, 2010*, available at: https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-01/tsa_data.pdf

[21] If further work on TSA will confirm that tourism sector contribution to GDP is close to 4%, it will be comparable to number of countries which compile such an indicator. For example, in 2016, on average, this indicator was equal to 5% for 27 countries for which data was available in OECD database.

economy is of about 2% for only internationally comparable tourism related activities and more than 4% or even approaching 5% of total GVA, if contributions of all tourism related activities are included.

Table 4. Estimates of direct contribution of tourism sector to GVA and GDP (for 2016, millions of som)

Total economy of the Kyrgyz Republic	
Gross value added (GVA)	**413,799.0**
Taxes less subsidies on products	**62,532.0**
Gross Domestic Product (GDP)	**476,331.0**
Direct contribution of tourism sector to GVA and GDP	
Table 6 version A	
Tourism Direct Gross Value Added (**only internationally comparable tourism related activities**) in % of GVA	2.30%
Tourism Direct Gross Value Added (**all activities related to tourism in Kyrgyzstan**) in % of GVA	4.80%
Tourism Direct Gross Domestic Product (**only internationally comparable tourism related activities**) in % of GDP	2.00%
Tourism Direct Gross Domestic Product (**all tourism related activities**) in % of GDP	4.20%
Table 6 version B	
Tourism Direct Gross Value Added (**only internationally comparable tourism related activities**) in % of GVA	1.90%
Tourism Direct Gross Value Added (**all activities related to tourism in Kyrgyzstan**) in % of GVA	3.50%
Tourism Direct Gross Domestic Product (**only internationally comparable tourism related activities**) in % of GDP	1.90%
Tourism Direct Gross Domestic Product (**all tourism related activities**) in % of GDP	3.10%

Source: author's own elaboration on the basis of 2016 Supply and Use Tables.

It is possible to disaggregate the NSC calculations by sector and make it more comparable to the TSA 2008 recommendations by removing the additional sectors "production of goods for tourism" and "construction of tourism facilities". This results in a reduction of the contribution of tourism in the year 2016 from 4.6% (see Table 3) to 3.7% as shown in Table 5.

Table 5. Contribution of the tourism sector to the economy of KR corrected to comply with TSA 2008

Gross value added in tourism sector in 2016				
(current prices, million soms)				
	Gross output	**Intermediate consumption**	**GVA**	**% of GDP**
Restaurants	9,167.0	5,947.0	3,219.0	0.68%
Hotels	3,568.0	1,512.0	2,056.0	0.43%
Tourism and excursions tours services	1,459.0	772.0	687.0	0.14%
Sanatorium-resorts services	654.0	359.0	294.0	0.06%
Sales in tourism sector	8,271.0	3,079.0	5,193.0	1.09%
Income from transportation of tourists	8,200.0	4,934.0	3,266.0	0.69%
Other tourism services (GKED-3 Sections J,K,L,M,O.)	6,241.0	3,385.0	2,855.0	0.60%
Total	**37,559.0**	**19,988.0**	**17,570.0**	**3.69%**
Non – tourism activities			**458,761.0**	**96.31%**
GDP in 2016			**476,331.0**	**100.00%**

Source: author's own elaboration on the basis of 2016 Supply and Use Tables.

As explained before, one of the limitations of the initial estimations conducted by the NSC was the lack of data on employment generated by tourism. In the estimations conducted here, this limitation was overcome and it is notable that the estimate of total number of employed in tourism related activities slightly surpasses 4%, while the estimate of the ratio of TDGVA to total GVA is about 3- 4% as shown in . This implies that tourism sector might be relatively more important from the point of view of its contribution to employment in KR, rather than macroeconomic value added alone.

Table 6. Tourism related employment

Groups of activities	Number of employed					
	All employed	Male	Female	Employees, total	Self-employed, total	**TOTAL**
All economic activities	**2,363,700.0**	**1,428,400.0**	**935,300.0**	**1,358,400.0**	**1,005,300.0**	**2,363,700.0**
	Average number of employed attributed to production of tourism direct GVA					
All tourism related activities	**103,059.0**	**55,612.0**	**47,446.0**	**80,049.0**	**23,009.0**	**103,059.0**
Tourism characteristic activities, internationally comparable	72,269.0	42,226.0	30,043.0	59,050.0	13,218.0	**72,269.0**
Indicator of employment						
Average number of employed in tourism related activities as % of average number of employed in total economy	4.4%	3.9%	5.1%	5.9%	2.3%	**4.4%**

Source: author's own elaboration on the basis of 2016 Supply and Use Tables.

In addition to calculating indicators for the total economy, it was also possible to conduct a more aggregated estimation of the contribution of the tourism sector to the economy in the Issyk Kul Region as shown in Table 7. What is noticeable with respect to IKR, is that the share of TDGVA in total Gross Value Added in the IKR is much lower than for the whole country, which is surprising, as it is currently assumed that most of tourism is happening in that region. However, taking into account that the share of only one enterprise – KUMTOR – in total GVA of IKR is about 80% and deducting this outlier from the IKR GVA, the tourism related GVA in IKR increases to estimated 17%. Contribution of tourism to the employment in IKR (5.8%) is noticeably more than that of the total economy (4.4%).

Table 7. Key indicators on the significance of tourism sector in the Issyk Kul Region

Indicators	IKR
GVA	59,831.0
TDGVA (all tourism related activities)	1,963.0

TDGVA as % of total GVA	3.3%
TDGVA (all tourism related activities) % of total GVA without KUMTOR	**17.1%**
Share of tourism related total number of employed in IKR total number of employed	5.8%
Share of tourism related total number of employed in IKR total number of employed (without KUMTOR)	**5.9%**

Source: author's own elaboration.

As shown in Table 8, the tourism activities in the Issyk-Kul Region that are internationally comparable account for 71.2% of the total TDGVA of the region, with the highest share (48.1%) being claimed by the Hotels sector, followed by the food and beverages (9.6%), the passenger transport services sectors (7.6%), and all the rest of sectors(15.4%). The non-internationally comparable sectors account for 22.6% of the region's TDGVA, with retail trade equivalent to 13% and health and residential nursing to 9.6%.

Table 8. Tourism sector contributions to the economy of the Issyk-Kul region

Activities	TDGVA IKR	TDGVA IKR as % of GVA
A. Tourism related activities	**1,963**	**100.0%**
A.1: Tourism characteristic activities, internationally comparable	**1,397**	**71.2%**
Hotels	*945*	*48.1%*
Food and beverage serving activities	*149*	*7.6%*
Passenger transport services	*188*	*9.6%*
Travel agencies and other reservation services	*74*	*3.8%*
Cultural services and Sports and recreational services	41	*2.1%*
A.2 Tourism related activities, other than internationally comparable	**444**	**22.6%**
Health and Residential nursing care activities	188	*9.6%*
Retail trade	256	*13.0%*

Source: author's own elaboration.

2.2 Assessment of quality assurance of official statistics in the context of the needs for measures of tourism sustainability

This section provides an initial assessment relevant to the development of measures of tourism sustainability in the Kyrgyz Republic. The assessment was conducted based on the recommendations provided in the recently (2019) adopted United Nations National Quality Assurance Frameworks Manual *for Official Statistics: UN-NQAF*[22]. The UN Statistics Division (UNSD) checklist[23] was used for this purpose, which addresses quality assurance with regard to

[22] Available here. This manual is based on the best practices of many countries including the EU member states. *Code of practice of the European Statistical System* uses the same nine dimensions, see here. The manual defines quality assurance "a planned and systematic pattern of all the actions necessary to provide adequate confidence that a product will conform to established requirements". An important part of quality assurance is quality assessment which is an activity that "focuses on an assessment of how well quality requirements (the stated needs or expectations) are fulfilled".

[23] Available here.

the development, production and dissemination of official statistics according to levels that cover A) Managing the statistical system; B) Managing the institutional environment; C) Managing statistical processes; and D) Managing statistical outputs. These levels are each assessed against quality dimensions that evaluate relevance, accuracy, reliability, timeliness, punctuality, accessibility, clarity, coherence, and comparability using a numerical scale that translates into "Full compliance", "Partial compliance", and "No compliance". The main results of the assessment are presented in the following table.

Table 9. Results of the assessment of the quality assurance regarding data needed measuring tourism sustainability

Level		Principle		Score	Level average
A	**Managing the statistical system**	1	Coordinating the national statistical system	50	**39**
		2	Managing relationships with stakeholders	50	
		3	Managing statistical standards	17	
B	**Managing the institutional environment**	4	Assuring professional independence	50	**35**
		5	Assuring impartiality and objectivity	36	
		6	Assuring transparency	0	
		7	Assuring statistical confidentiality and data security	83	
		8	Assuring the quality commitment	25	
		9	Assuring adequacy of resources	17	
C	**Managing statistical processes**	10	Assuring methodological soundness	30	**21**
		11	Assuring cost-effectiveness	33	
		12	Assuring appropriate statistical procedures	10	
		13	Managing the respondent burden	13	
D	**Managing statistical outputs**	14	Assuring relevance	13	**16**
		15	Assuring accuracy and reliability	17	
		16	Assuring timeliness and punctuality	17	
		17	Assuring accessibility and clarity	14	
		18	Assuring coherence and comparability	17	
		19	Managing metadata	17	
		Overall score			**27**

Source: author's own elaboration based on United Nations National Quality Assurance Frameworks Manual for Official Statistics UN-NQAF.

The quality assurance with respect to the data relevant to the compilation of measures of tourism sustainability shows an overall score of 27, which is in the lower third of the score interval. This means that quality of data to measure tourism sustainability **is unsatisfactory**.

Managing the statistical system of the Kyrgyz Republic gets the highest score of all four assessed levels, but still in the lower portion of the range. Managing the implementation of statistical standards applicable to the datasets relevant to measuring tourism sustainability was scored at 17,

thus indicating that those standards are only very partially implemented, and far more work lies ahead.

Managing the institutional environment score is 35 with *Assuring transparency* scoring 0. There is cooperation between agencies, but this is not reflected on the NSC website with respect to tourism sustainability. *Assuring the quality commitment* (score 25) and *adequacy of resources* (17) are also on the lower part of the score interval, which is an important take-away of this exercise

Managing statistical processes gets a score of 21 because methodological soundness is not sufficiently assured and appropriate statistical procedures are not in place to assure compilation of measures of tourism sustainability. For example, micro-data recompilation into indicators of tourism sustainability is a serious challenge.

Quality assurance with respect to managing statistical outputs gets the lowest score of 16 as all problems associated with the three preceding levels of quality assurance compound and result in partial data on tourism sustainability or for the development of tourism accounts in the spirit of SEEA. The main challenge is data disaggregation by economic activity (to be linked to TSA) and by territorial units that can be linked to tourism destinations.

2.3 Measuring tourism sustainability as part of monitoring and evaluation of progress towards SDGs

The Kyrgyz Republic has agreed to submit a Voluntary National Review (VNR) on the progress towards achieving goal of the 2030 Agenda for Sustainable Development to the UN High-Level Political Forum in July 2020. The draft report contains a statistical appendix featuring data on a number of the SDG global and national indicators and some of them are relevant in the context of measuring the sustainability of tourism. The assessment of the statistical capacity of the country to compile such indicators was conducted in recent years and it included an assessment of feasibility of compiling the indicators intended to monitor the sustainability of tourism[24].

Regarding the three global indicators intended to **directly measure progress towards tourism sustainability** the conclusion is as follows:

- Indicators 8.9.1 *Tourism direct GDP as a proportion of total GDP and its growth rate*. This indicator is currently not available as the NSC does not compile the TSA. However, its compilation is feasible in the medium-term (two-three years) if a strong effort is made to develop the TSA-KR. In this context, the current work on the experimental TSA tables is highly relevant. At the moment, the NSC will use its evaluation of the contribution of the tourism sector to GDP as a national SDG indicator.

[24] Assessment as part of the UNSD-DFID project.

- Indicator 8.9.2 *Proportion of jobs in sustainable tourism industry out of total tourism jobs.* It is currently not available but feasible in the future if a strong effort is undertaken. The NSC and the Tourism Department are considering including this indictor in the action plan annexed to country's Roadmap for strengthening its capacity to compile SDG indicators. This indicator is not included in the official list of global SDG indicators; it should be re-defined as a national indicator.
- Indicator 12.b.1 initially formulated as *Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools* is amended by the UNSC (in March 2020) and reads now as *Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability.* Based on the previous discussions with the NSC staff and the review of the currently applied methodology, it can be concluded that the implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability is, at the moment, in its initial stage.

In addition to the above-mentioned, there are several other SDG global indicators which **do not directly measure** tourism sustainability but are closely related to it. The assessment of their status was conducted as well, and it sheds some additional light on the feasibility of measuring tourism sustainability. As an example, the situation with two global indictors on water and two on protected areas is described below:

<u>Goal 6. Ensure availability and sustainable management of water and sanitation for all</u>

- Indicator 6.3.1 *Proportion of domestic and industrial wastewater flows safely treated*. This indicator is available and is included in VNR. However, when the issue on disaggregating detailed activity categories was discussed, it appeared as a very challenging task and data were not readily available. Therefore, the NSC cannot provide data on "wastewater flows safely treated" by economic activities related to tourism.
- b. Indicator 6.4.2 *Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.* If disaggregated by economic activities related to tourism, the indicator would provide valuable information for assessing tourism sustainability. Yet, the NSC was not able to compile it for the VNR purposes as the input data were fragmented.

<u>Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</u>

- Indicator 15.1.2 *Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type.* This indicator is compiled by the NSC and included in the VNR. This provides a basis for future assessment of the impacts of tourism activities which might affect biodiversity but, as of now, the NSC does not have enough capacity to collect data. At the same time, efforts can and should be undertaken to collect relevant information in several locations (including in the Issyk-Kul region);
- Indicator 15.4.1 *Coverage by protected areas of important sites for mountain biodiversity*. This indicator is also compiled by the NSC and included in the VNR. Similar to indicator

15.1.2, the challenge is to build the statistical capacity to assess the impact of tourism activities on mountain biodiversity, especially in view of growing popularity of mountain sports.

In view of the above, any assistance that The World Bank could provide to the NSC to enhance the methodological skills of its staff and to improve data sources for measuring tourism sustainability is highly relevant.

2.4 The UNWTO draft list of indicators for monitoring the sustainability of tourism and feasibility of its implementation

From a measurement perspective, the main contribution in the area of sustainable tourism from the UNWTO has been the ongoing work to develop relevant sets of indicators that respond to policy needs. The most significant results of this work are; (a) the Guidebook for Indicators of Sustainable Development for Tourism Destinations (2004) and; (b) the preparation of a draft List of indicators for monitoring the Sustainability of Tourism (2018).

The 2004 Guidebook identified a very large number of indicators (over 700) across 13 issues, such as: (i)well-being of host communities; (ii) sustaining cultural assets; (iii) community participation in tourism; (iv) tourist satisfaction; (v) health and safety; (vi) capturing economic benefits from tourism; (vii) protection of valuable natural assets; (viii) Managing scarce natural resources, among others. This large set of indicators can still be used as an inventory of options for further work at national level. In view of the urgent need to develop a system of global indicators for monitoring progress towards the 2030 Agenda of Sustainable Development, a more focused approach was required at global and national levels. Also, the issue of feasibility of the proposed indicators was brought into focus.

To speed up the process of developing a set of global indicators for tourism sustainability which most countries could compile as well as expanding the set for monitoring tourism sustainability at national level, the UNWTO created a dedicated Working Group in 2016 which produced a draft of *Tourism indicators for Monitoring the Sustainability of Tourism*. The group identified 47 indicators and 12 supplementary indicators that can be used to monitor the SDG goals.[25] The draft list provides a good starting point for creating a system of national indicators to monitor the sustainability of tourism in the Kyrgyz Republic. The list of indicators is not final and will be further developed. The ambition of the UNWTO was to finalize the work on SF-MST, as well as the list of indicators, and to submit it to the UN Statistical Commission in March 2020. However, it did not happen and the SF-MST is included in the multi-year program of work of the Statistical Commission for 2021[26]. The UNWTO draft list is provided in Annex 3 to the report.

The report recommends that the UNWTO draft indicators be reviewed by the NSC in the context of the realities of tourism in the Kyrgyz Republic and are assessed, in terms of; (a) relevance and

[25] Available here.
[26] See here.

(b) feasibility. This exercise is facilitated by the experience gained by the NSC and other members of the national statistical system during the assessment of the relevance and feasibility of global SDG indicators for monitoring the sustainable development.

To facilitate the NSC work, an initial screening of the UNWTO draft list of indicators was performed. Indicators which were clearly not applicable in the Kyrgyz Republic were reformulated or deleted. For example, the indicator "Change in coastal ecosystem condition, including reef and beach condition" is rendered as "Change in coastal ecosystem condition of the Issyk-Kul lake" while the indicator "Growth in TDGDP for SIDS (small island development states) and LDCs (least developed countries)" is deleted. The screened, and slightly amended list consists of 53 indicators.

The NSC, in cooperation with the Tourism Department, would need to continue the assessment of relevance and provisionally evaluate the feasibility of producing these indicators[27]. Combining the assessments of relevance and feasibility will result in a draft list for further discussion with data users and data providers. The feasibility of any particular indicator is initially assessed by placing them in one of the two categories:

- Easily feasible (coded EF): indicators for which data sources are available and the indicator can be compiled by combining data from the existing data sets with minimal additional resources, so that it is reasonable to expect that the indicator may become available in a relatively short term (a year – as a rough approximation).
- Feasible with strong effort (coded FSE): indicators for which additional data should be collected or/and which compilation form the existing data sources will be time consuming and may require more complex methodological issues.

A total of 14 indicators (or 26%) might be considered as relatively easy for compilation; however, some efforts are needed within the existing resources (marked EF in the table below or 74%) are feasible with a strong effort; Significant additional work on methodology and additional resources are needed and the compilation might take long time (marked FSE). The draft list of the UNTWO Indicators for Monitoring the Sustainability of Tourism as adjusted for the Kyrgyz Republic is presented in table 2.

Table 10. Draft UNTWO Indicators for Monitoring the Sustainability of Tourism as adjusted for the Kyrgyz Republic

SDG	Code	SDG linked indicators	Tentative feasibility assessment
2	2.i	Share of tourism intermediate consumption by hotels, restaurants etc. from domestic agriculture	FSE
2	2.ii	Share of agricultural income from agro-tourism activity	FSE

[27] The feasibility would be assessed according to the following criteria; currently available, easily feasible, feasible with strong effort, not feasible in the span of TDP 2019-2023 – following the methodology used to assess the feasibility of the global SDG indicators.

SDG	Code	SDG linked indicators	Tentative feasibility assessment
3	3.i	Share of health tourism related to total tourism	FSE
4	4.i	Change in average skills (years of training) of employees/or persons employed in tourism industries	FSE
4	4.ii	Proportion of employed persons/employees in tourism industries with school education compared to the share of overall population	FSE
5	5.i	Share of women in tourism jobs (compared to the overall economy)	FSE
5	5.ii	Share of women in tourism management roles	EF
6	6.i	Final water use in tourism industries / TDGDP	FSE
6	6.ii	Share of treated waste water from tourism industries	FSE
6	6.iii	Waste water per guest in the accommodation industry	EF
6	6.iv	Waste water per day and capita for tourists	EF
7	7.i	Share of final energy use related to Tourism Direct GDP (TDGDP)	FSE
7	7.ii	Share of renewable energy in total tourism energy use	FSE
8	8.i	Tourism direct GDP (TDGDP)	FSE
8	8.ii	Number of jobs in tourism industries: share of tourism employment related to total employment	FSE
8	8.iii	Persons employed (expressed by "Full-time equivalents"; FTE) in the tourism industries, including the respective share related to overall employment	FSE
8	8.iv	Energy use in tourism: net domestic energy use by tourism industries	FSE
8	8.v	Total international receipts and taxation from international visitors	FSE
9	9/i	Occupancy rates for accommodation industry (based on beds)	EF
9	9.ii	Share of investment in transport infrastructure related to total infrastructure investment	EF
10	10.i	Number of trips made by mode of transport to and from the tourist destination	FSE
10	10.ii	Net tourism exports (net inflow from tourism)	FSE
10	10.iii	Average earnings in tourism compared to national average	EF
10	10.iv	Share of travel exports related to total service exports	FSE
10	10.v	Average income of persons working in tourism industries compared to residents (by region)	EF
11	11.i	The accessibility of tourism facilities	FSE
11	11.ii	Tourism intensity: the number of tourism visits per 100 residents	FSE
11	11.iii	The number of beds in tourist accommodation facilities per 100 residents	EF
12	12.i	Stage of implementation of the Statistical Framework for Measuring Sustainable Tourism	EF
12	12.ii	Share of solid waste generated by tourism industries related to total solid waste	FSE
12	12.iii	Share of solid waste recycled in the tourism industries	FSE
12	12.iv	Sewage produced per tourist compared to sewage produced per resident	FSE
13	13.i	"Green-House-Gas" (GHG) emissions from tourism industries compared to total economy	FSE
14	14.ii	Change in coastal ecosystem condition of the Issyk-Kul lake	FSE
15	15.i	Change in protected areas in tourism destinations	EF
15	15.iii	Share of protected areas related to total area of a country	EF
16	16.i	Number of visitors registering complaints with police	FSE

SDG	Code	SDG linked indicators	Tentative feasibility assessment
16	16.ii	Change in rates of crime in tourism destinations	FSE
16	16.iii	Number of offenses according to high/low seasons	FSE
16	16.iv	Rates of crime in tourism destination compared to those in non-tourism regions	FSE
17	17.i	Status of implementation of TSA and SEEA	EF
17	17.ii	Share of budget available for statistical tools for MST related to total statistical budget/total tourism budget	EF
		Additional indicators	
	S.1	Productivity in tourism industries: Gross Value Added per persons employed	FSE
	S.2	Gross operating surplus (GOS): GOS is gross output less the cost of intermediate goods and services, and less compensation of employees and taxes and subsidies on production and imports.	FSE
	S.3	Occupancy rate of rooms: share (in %) of actual pernoctations related to total possible pernoctations (days*rooms)	EF
	S.4	Seasonal distribution according to months Index values based on monthly nights spent related to total nights spent by year/season	FSE
	S.5	Energy use per night spent In Joule	FSE
	S.6	Use of renewable energy in hotels In Joule	FSE
	S.7	Intensity of greenhouse gas (GHG) emissions: share of GHG emissions on Gross Value Added	FSE
	S.8	Duration of stay - nights spent per guest (arrival)	FSE
	S.9	Low wage share by gender: the low wage rate refers to the share of persons employed whose earnings are less than two-thirds of the average earnings (Median) of total persons employed.	FSE
	S.10	Proportion of women employed in tourism industries: proportion of women employed shows how women are compared to their share of the population of one paid activity(15 years and older).	FSE
	S.11	Migration of local population from tourism destinations: the indicator might indicate overuse in case the local population is migrating from tourism intensive destinations to less intensive regions.	FSE

Source: Author's own elaboration based on UNTWO.

2.5 European Tourism Indicator System for sustainable destination management (as it might be applied in the Kyrgyz Republic)

Another example of a tourism indicator system which should be reviewed by the tourism policy makers, data users and tourism statisticians in the Kyrgyz Republic is the European Tourism Indicator System for sustainable destination management (ETIS)[28]. This system was developed by the European Commission as a management, information and monitoring tool specifically intended for tourism destinations[29]. It is designed as a locally owned and led process for collecting

[28] See: https://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_en

[29] Available here.

and analyzing data with the overall objective to assess the impact of tourism on a destination. The specific objective of the ETIS is to contribute to improving the sustainable management of destinations. It aims at helping destinations and stakeholders to measure their sustainability management processes, enabling them to monitor their performance and progress over time. This system complements the draft indicator list prepared by UNWTO and might be of special interest for the Tourism Department of the MICT.

The European Tourism Indicator System (ETIS) consists of 43 indicators arranged in four sections: Destination management, Economic value, Social and cultural impact, and Environmental impact. ETIS is of interest to the Kyrgyz Republic as it provides a suite of supporting documentation; "the ETIS toolkit" which provides guidelines and clear explanations about core and supplementary indicators and how to use them. It also informs about ETIS complementarity with other existing tools and methodologies at the international and European level. The supporting electronic documents consist of the destination profile, data sheets, glossary, surveys and an invitation letter template[30]. The list of indicators contained in ETIS is provided in Annex 4.

Taking into account the NSC experience in assessing global SDG indicators and the identification of national indicators of sustainable development, the NSC, in cooperation with the Tourism Department and other partners, can review and assess both UNWTO and EU lists of indicators and prepare a draft list of indicators of tourism sustainability in relative short-term. Such a list would have a double advantage because it would be internationally comparable and at the same time, it would reflect the specificity of measuring tourism sustainability in the Kyrgyz Republic. It is further advised that this draft would be prepared by the end of 2020 or early 2021. In March 2021, the UN Statistical Commission adopts SF-MST and the draft could then be finalized and incorporated in the statistical work in the Kyrgyz Republic in the light of the UNSC decision..

2.6 Wealth accounts and measuring tourism sustainability

Any system of indicators of tourism sustainability is developed based on broader conceptual frameworks which guide their development and use. In this context, this section highlights the importance of the wealth accounting approach in general and focuses more on linkages between SEEA and TSA aiming to provide initial recommendations to NSC on how it might proceed further in enriching measurement of tourism sustainability.

Even if not all elements of wealth accounts are part of official statistics, it is important to note that wealth accounts[31] cover:

[30] See here.

[31] A convenient gateway to wealth accounting is the website provided by WAVES - a World Bank-led global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts available here.

- Produced capital and urban land—machinery, buildings, equipment, and residential and nonresidential urban land, measured at market prices. For the sake of brevity, the abbreviated term produced capital is used to include both produced capital and urban land.
- Natural capital—energy (oil, gas, hard and soft coal) and minerals (10 categories), agricultural land (cropland and pastureland), forests (timber and some nontimber forest products), and protected areas. Natural capital is measured as the discounted sum of the value of rents generated over the lifetime of the asset. Natural capital provides ecosystem services which are entering into tourism consumption;
- Human capital—the value of skills, experience, and effort by the working population over their lifetimes disaggregated by gender and employment status.
- Net foreign assets—the difference between a country's external assets and its liabilities; for example, foreign direct investment and reserve assets.

Using available data and creating estimates, comprehensive wealth accounts (stock measures in total and per capita) and adjusted net (genuine) savings (a flow measure) can be compiled. Adjusted Net Savings (ANS) is measured as gross national saving minus depreciation of produced capital, depletion of subsoil assets and timber resources, the cost of air pollution damage to human health, plus a credit for education expenditures. If ANS as a percentage of gross national income (GNI) is negative, the country is consuming more than it is saving, which will undermine long-term sustainability; if ANS is positive, it is adding to wealth and future well-being[32]. The latest wealth accounting data show that more efficient, long-term management of natural resources is key to sustainable development while countries build their infrastructure and human capital. In this context, development of better measures of, for example, nature-based tourism and tourism in protected areas, links work on wealth accounts and on creating an improved information base on sustainable tourism.

An important advancement in statistical conceptualization of measuring of stocks and flows of natural capital was achieved in 2012 by the adoption by the US Statistical Commission of the System of Environmental-Economic Accounting (SEEA) as an international standard. Even though, data collection for SEEA remains a serious challenge for most countries, including the Kyrgyz Republic, and the methodology for estimating missing values is not yet adopted by the UNSC Statistical Commission, the experimentation in this direction should be part of a longer term plan of improving official statistics of the Kyrgyz Republic in general and measures of tourism sustainability in particular, including by extending the Tourism Satellite Account.

There were noticeable efforts undertaken to establish conceptual relationships between TSA and SEEA. Especially important is a Technical Note which describes approaches to linking information from SEEA and TSA[33]. The note was endorsed by the UN Committee of Experts on Environmental-Economic Accounting (2016 and 2018 meetings) and by the UNWTO Committee on Tourism Statistics and TSA (January 2017 meeting). According to the note, the challenge this

[32] The Changing Wealth of Nations, WB, 2018, page 33, available here.
[33] Linking the Accounting Frameworks of the SEEA and the TSA available here.

approach is facing is that accounting as applied in the SEEA framework is primarily from a supply or **production** perspective – i.e. the common focus is on the use of natural inputs (e.g. water, minerals, energy) by economic units and residual flows (e.g. air emissions, wastewater, pollutants) generated by economic units, including households, while the TSA framework reflect a demand or **consumption** perspective (the measurement scope depends primarily on the characteristics of the consumer, i.e. whether or not the consumer is a visitor).

2.7 Establishing conceptual linkages between SEEA and TSA: RMF 2008

From the SEEA perspective, it is possible to incorporate accounting for environmental flows in any SNA satellite accounts, including in TSA. The most detailed exposition of how it can be done with respect to TSA is provided in the *System of Environmental-Economic Accounting 2012: Applications and Extensions* (SEEA-AE) section "4.4.2 Presentation of environmental-economic accounts data for tourism," which presents an example of an extension of the SEEA Central Framework in relation to tourism activity[34]. In general, it is necessary to start with a standard monetary Supply and Use Table (SUT), then determine the key products and industries of relevance to measurement of the tourism related activity, and extend the modified TSA tables with relevant physical flow information (e.g. on flows of emissions or solid waste). The SEEA-AE proposes "Stylized tourism-environment accounts – specifying tourism industries and tourism characteristic consumption products" and description of "Flows from tourism-environment accounts."[35]

The SEEA-AE approach to tourism aligns with the International Recommendations for Tourism Statistics 2008 (IRTS2008) whereby tourism is incorporated as a specific set of industries and of consumers within the combined physical and monetary flow accounts of the SEEA Central Framework. The advantage of such an approach is that it allows for "linking data on tourism and on the environment, to the economic aggregates of the core system of national accounts (e.g. GDP), by making use of common concepts, definitions and classifications"[36].

Accounting for the environmental dimension in TSA should envisage measurement in the following areas:

- Accounting for **environmental flows** for tourism industries including: water, energy, GHG emissions and solid waste.
- Accounting for tourism related **environmental assets** and their use, including:
- *Tourism land accounts, including protected areas and national parks;*
- *Accounting for tourism related ecosystems and biodiversity;*
- *Accounting for tourism related natural resources including stocks of water resources.*

[34] Available here.
[35] See: SEEA-AE, tables 4.3 and 4.4.
[36] SEEA-AE, para. 4.49

In principle, as stated in *Linking the Accounting Frameworks of the SEEA and the TSA*, it is possible to establish a relationship between the environmental flows of specific production processes and the outputs that become part of domestic tourism consumption. For example, it might be feasible to estimate the quantity of energy "embodied" in the transportation, accommodation or food and beverage services which become part of domestic tourism consumption[37]. The same logic can be applied for other environmental flows such as water and GHG emissions. The paper states that "techniques of attributing environmental flows to categories of final demand are well established and widely applied". Annex 1 gives a methodological approach to achieve these purposes.

2.8 Tourism related environmental assets

Tourism related environmental assets can be identified following the SEEA Central Framework definition of environmental assets as "the naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity"[38] and the TSA definition of tourism specific fixed assets as assets "used exclusively or almost exclusively in the production of tourism characteristic goods and services. If tourism did not exist, such assets would be of little value as they could not easily be converted to non-tourism applications"[39].

The SEEA describes two approaches to the measurement of environmental assets. The first approach concerns the measurement of individual assets such as minerals, energy resources, timber, fish, soil and water. This approach is described in the SEEA Central Framework. Some of these individual resources will be relevant for tourism, for example, water resources. The second approach is accounting for the extent and condition of land and ecosystem assets as described in the SEEA Experimental Ecosystem Accounting (SEEA EEA)[40]. In the SEEA, land is a unique and fundamental environmental asset. It can be accounted as an individual resource by recording changes in the composition of land use and land cover within a territory over time. This way, indicators of deforestation and urbanization may be derived.

Tourism related environmental assets are provisionally defined in the UNWTO[41] as:

- Directly underpinning the provision of goods and services to visitors (e.g. land) in the sense that they are owned and/or managed by tourism industries;
- Locations and their associated features (e.g. significant species – gorillas, pandas, etc.), where visitors undertake tourist activity (e.g. national parks, beaches, ski resorts;
- Ecosystems that are impacted by tourist activity, for example through excess visitation or the release of pollutants or waste water;

[37] Linking the Accounting Frameworks of the SEEA and the TSA, UNWTO (2017), page 10
[38] SEEA: Central Framework, para. 2.17
[39] TSA 2008: para 2.47
[40] UN et al., 2014, "SEEA Experimental Ecosystem Accounting."
[41] Statistical Framework for Measuring the Sustainability of Tourism, UNWTO draft of 2018, pages 51-52

- Water resources in tourism areas.

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

It should be noted that the NSC currently compiles data on several tourism related environmental assets and publishes them in "Tourism in Kyrgyzstan" and on its website. Examples are:

- Protected areas including national nature parks and national preserves detailed by area size and region of location;
- Protection and rational use of forest resources;
- Reforestation;
- Protection and rational use of water resources;
- Investments in fixed assets for environmental protection and rational use of natural resources;
- Presence of residuals, by residuals classes.

As in the case of environmental flows, publicly available data on environmental assets is at highly aggregated level, which makes it difficult to assess tourism impact on the change in the stock of these assets.

2.9 Tourism sustainability and ecosystem-accounting

One more area of potential expansion of measures of tourism sustainability is ecosystem-accounting.[42] Technical Recommendations in support of the System of Environmental-Economic Accounting 2012—Experimental Ecosystem Accounting (SEEA-EEA) were prepared by the United Nations Statistics Division, the United Nations Environment, the Secretariat of the Convention on Biological Diversity, the Norwegian Agency Cooperation through the Advancing Natural Capital Accounting (ANCA) project, and the World Bank WAVES partnership. The project aimed to support countries in efforts to embark on the SEEA Experimental Ecosystem Accounting with a view to improving the management of ecosystem services.

Indicators in the ecosystem condition account reflect the general ecological state of an ecosystem, its capacity to supply ecosystem services and the relevant trends. The indicators selected should be relevant for policy- and decision-making by reflecting, inter alia, the capacity of ecosystems to generate one or more services (e.g., ecosystem attractiveness conducive to tourism). In Cultural

[42] See: *Technical Recommendations in support of the System of Environmental-Economic Accounting 2012—Experimental Ecosystem Accounting*, available at: https://seea.un.org/ecosystem-accounting

services, a subcategory of *Enabling tourism and recreation services* is included and this provides a starting point to explore this option. For example, the SEEA-EEA proposes that countries experiment with possible presentation of ecosystem asset values by type of ecosystem service in one table (SEEA-EEA Table 7.2). It might be a good idea to see to what extent this option can be implemented in the IKR.

2.10 Measuring tourism sustainability in the Issyk-Kul region: mostly challenges, but progress is possible

A Tourism Destination is a physical space with or without administrative and/or analytical boundaries in which a visitor can overnight. It is the cluster of products and services, and of activities and experiences along the tourism value chain, as well as a basic unit of analysis of tourism. A destination incorporates various stakeholders and can network to form larger destinations. It is also intangible with its image and identity which may influence its market competitiveness[43].

This focus on specific areas within a country links the objective of measuring tourism sustainability through natural capital accounting and the spatial approach used in ecosystem accounting. Therefore, progress can be made depending on the availability of information that supports analysis at a fine spatial level, which requires data on tourism destinations and related ecosystems, (i.e. beaches, national parks, marine areas, etc). A natural candidate for developing such an integrated approach in the Kyrgyz Republic is the Issyk-Kul region. The approach would focus on the assessment of the Issyk-Kul ecosystem condition using indicators of the quality of water and that of its beaches, which could be tracked over time to provide insights into the environmental impact attributable to tourist activity.

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

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

[43] UNWTO, 2016.

The above is, rather, an outline of a long-term perspective. Available tourism and environmental statistics are limited. The publication on *Social and Economic Development of Issyk-Kul Oblast 2014 – 2018* includes data on a number of *ad-hoc* indicators that unfortunately do not conform to international statistical standards. These can be found in Annex 8.

It also should be acknowledged that the NSC collects and publishes data on expenses for the protection of biodiversity and landscape of nature reserves and natural parks, hunting and forestry in Issyk-Kul region (IKR), detailed by districts[44]. This indicates that there is a potential for gradual improvements in data on the environmental flows in IKR, and then combining such data with estimates of tourism related supply and consumption. Any progress in measuring (and subsequently monitoring) the impact of tourism related activities on such valuable component of natural capital of the Kyrgyz republic such as the Issyk-Kul lake is highly desirable and would be welcome by policy makers and civil society.

[44] See "Environmental Protection in The Kyrgyz Republic, Including Environmental Situation in the Lake Isk-Kul Area", 2018, available here.

3 Lessons learned and way forward

This document has evaluated the state of official statistics of the Kyrgyz Republic as an input in the measurement of the sustainability of tourism. As a result of this evaluation, many issues have been documented that prevent tourism, environmental and energy statistics from the Kyrgyz Republic from meeting the standards of international recommendations. Tourism statistics are based on outdated Recommendations on Tourism Statistics of UNWTO And, while they provide useful data series, they fail to comply with many of the provisions of IRTS 2008 on data collection. This is especially critical with regards to the definition of the scope of tourism and measures of tourism flows (both non-monetary and monetary); the definition and structure of tourism expenditure; the definition and structure of tourism related activities and measures of performance of tourism related industries[45].

Recommendations on the compilation of the Tourism Satellite Accounts contained in TSA: RMF 2008 are not implemented yet, so macroeconomic measures like "Tourism Direct GDP" and "tourism related employment" are not compiled. Nevertheless, as part of The World Bank project that supports the development of tourism accounting, the work on the experimental TSA tables has been initiated but more efforts are required to yield the necessary results. Coordination between the National Statistical Committee and the Ministry of Information, Culture and Tourism of the Kyrgyz Republic is a prerequisite for the success of this implementation.

Currently published environmental statistics[46] cover several environmental flows such as water intake and use, production and waste from consumption, as well GHG emissions at an aggregate level. However, the lack of geographic and economic activity disaggregation of the data pose a challenge for their inclusion in an adequate accounting structure at the level of tourism destination. Methodological notes on the environment statistics, available on the NSC website[47], do not reflect recommendations of both FDES 2013 and SEEA 2012. However, some of these recommendations are anecdotally incorporated in the data collection instruments and in the NSC research work program, according to NSC staff. For example, a few tables are available on the environmental situation of the Issyk-Kul region, but they are limited. There is information available on the number and area size of nature reserves, reforestation, forest thinning and selective logging, but there is no published detailed data on waste generation or disposal and energy use.

Regarding energy statistics, the NSC publishes aggregated data on selected energy flows such as consumption of electricity, fuel oil and natural gas. The most detailed published data are on electricity consumption, but the level of disaggregation is restricted to certain groups of activity such as manufacturing, agriculture, transport, construction, and social services. Furthermore, according to the information available on the NSC website, the methodology on energy statistics

[45] Detailed assessment of the state of tourism statistics is provided in the earlier submitted (on 02.02.2020) report - T*he revised methodology of the Kyrgyz Republic tourism statistics: conceptual framework and classification system*
[46] Published in "ENVIRONMENTAL PROTECTION IN THE KYRGYZ REPUBLIC, INCLUDING ECOLOGICAL SITUATION IN THE ISK-KUL LAKE AREA (2018), available here.
[47] See here.

and energy balances has not been revised in a long time (reference is made to the UN publications of the late 1980s). International recommendations on energy statistics adopted by the UN Statistical Commission, such as *Energy Statistics Compilers Manual* and *International Recommendations for Energy Statistics*[48] or *Energy Statistics Manual* published by the International Energy Agency[49] seem not to have been incorporated in the Kyrgyz Republic as reflected in the available methodological notes.

On the positive side, (a) current NSC reporting forms require that the respondents provide information on the production and use of all kinds of environmental and energy products and; (b) there are surveys that are being conducted at the moment. Therefore, even though it is not possible to compile the desirable indicators to fill out tourism accounts (see Section D and E), it might be feasible to recompile basic environment and energy data using the appropriate correspondence tables.

It is recommended that the NSC conducts a more detailed assessment of its work program and incorporates activities which would ensure that measures of tourism sustainability are significantly improved in future. Furthermore, it is important that the NSC (i) Develops a system of indicators of tourism sustainability; and (b) Extends the TSA to cover environment flows where tourism impact is significant.

In line with IRTS 2008, the SF-MST promotes; (a) the selection of indicators to form an indicator set focused on reflecting the sustainability of tourism and; (b) extending the TSA in the direction of the System of Environmental and Economic Accounts[50].

This report's general conclusion is that the compilation of the measures of tourism sustainability in compliance with the existing international recommendations in the Kyrgyz Republic is both a challenge and an opportunity which can be realized with a two-pronged approach.

First, take a long-term perspective. Realize that the implementation of the TSA-RMF 2008 and SEEA-2012 methodology is modular and can be accomplished in stages, providing quick wins that can improve, expand and become more robust over time.

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[48] Energy Statistics Compilers Manual, available here and International Recommendations for Energy Statistics (IRES), 2018, available here.

[49] Energy Statistics Manual, available here.

[50] It is possible to compile composite/weighted indexes. The essence of this approach is to combine a selection of indicators into a composite or weighted index of some type, generally through the initial identification of specific themes relevant to the tourism sustainability and then the combination of relevant indicators using pre-determined models. While this approach does provide an overall sense of direction through a single number, there is no definitive list of themes (and related indicators), the relative importance (or weighting) of each indicator is open to question, and commonly these indexes tend to smooth out the effects of internal variations present in the component indicators (see SF-MST, page 11). This approach is not advised, at least not at this stage, for application in the Kyrgyz Republic and is not further discussed in this report.

Second, consider improving tourism, environment, and energy statistics as part of one integrated plan for development of official statistics based on the latest international recommendations[51]. This will prevent duplication of efforts and reduce the cost of implementation, by creating synergies and moving away from information silos. This requires the pursuit of an integrated approach to the collection of information, using a consistent set of concepts, definitions and classifications from SNA across units and government institutions. The integration work harmonizes surveys and estimation methods to achieve consistency and coherence of the statistics compiled.

Additionally, important efforts have been undertaken to develop Forest Accounting in the Kyrgyz Republic,[52] which also need to be considered in this integration. Additionally, ecosystem service flow accounts for the year 2018 have been developed in a pilot implementation meant to serve as guidance for the NSC to implement Natural Capital Accounting (NCA) in a regular manner. These accounts feature data for natural conditions for recreation and lodging for travelers, alongside many other provisioning services, effectively linking the state of natural resources to the number of visitors of the country. These efforts have also determined that it is important to increase the organizational capacity of key agencies to develop these types of indicators. This capacity is based on improved regulatory support, elimination of organizational gaps, improved interagency communication, professional support, increased IT capacity, and training. It is important that the roadmap to strengthen institutional capacity of tourism accounts is compatible with the roadmap for the development of environmental and economic accounting shown in **Table 11**. This will ensure that key scarce resources are optimized.

Table 11. Measures to improve capacity and awareness of key institutions to produce tourism accounts for the Kyrgyz Republic in the long term

No.	Type of measure	Measures for key agencies
1	Regulatory support (sufficiency of legislative norms and strategic planning documents)	National Statistical Committee of the Kyrgyz Republic - Supplement the Regulation on the National Statistical Committee of the Kyrgyz Republic (Section 6 of Chapter III) with the functions: - coordination of activities in the field of official statistics in the preparation of national accounts in accordance with the requirements of international statistical standards SNA-2008 and TSA-RMF 2008, as well as SEEA CF, SEEA Forests, SEEA Ecosystem Accounts, health and other accounts. - development of a methodology for compiling national TSA accounts of the Kyrgyz Republic and its approval
		Supplement the Regulation on the Agency (Section 6 of Chapter 4) with the powers to develop forms and summarize the data of the primary accounting of tourism managed by the Ministry of Information, Culture and Tourism of the Kyrgyz Republic, with the aim of subsequent transfer of the completed forms to the National Statistical Committee of the Kyrgyz Republic for the formation of TSA.

[51] See UNSD publication *Guidelines on Integrated Economic Statistics*, available here.
[52] See Fomenko, 2020, "Forest Accounts of the Kyrgyz Republic", World Bank, KR WAVES Plus.

No.	Type of measure	Measures for key agencies
2	Organizational and administrative support (the elimination of existing and potential gaps in the system of departmental organizational and administrative documentation, as well as in the implementation of the necessary interagency communications)	National Statistical Committee of the Kyrgyz Republic - the creation of an interdepartmental working group on the implementation of TSA and SEEA, in order to coordinate interaction in the production of data for the current tasks of developing accounts
		Ministry of Information, Culture and Tourism of the Kyrgyz Republic - adoption of a regulatory document on the implementation of the agency's powers in the field of TSA.
		Conclusion of the Agreement on cooperation and data sharing between the NSC and Ministry of Information, Culture and Tourism of the Kyrgyz Republic, defining a specific set, formats, and timing for the provision of data for the compilation of tourism accounts.
3	Professional and informational support (correspondence of professional experience and available knowledge in the field of SNA / TSA-RMF 2008 of key employees and ordinary specialists to current needs)	Supplementing training programs for specialists of the Ministry of Information, Culture and Tourism of the Kyrgyz Republic with issues of terminology of sustainable development, accounting and assessment of natural resources and ecosystem services, TSA, etc.
		Supplementing training programs for specialists of National Statistical Committee of the Kyrgyz Republic with methodologies and practices for the compilation of TSA, the integration of data in the tables of the SNA, etc.
		Increasing the number of experts working at key agencies (the National Statistical Committee of the Kyrgyz Republic and the Ministry of Information, Culture and Tourism of the Kyrgyz Republic) considering the large volume and long-term nature of the work on TSA development, including the initial compilation of accounts and their further maintenance (with necessary adjustments)
		Regular participation of leading NSC KR and Ministry of Information, Culture and Tourism of the Kyrgyz Republic experts on the TSA-RMF development and implementation
4	Technical support (sufficiency of technical equipment and software, financial and other resources)	1. Providing computer equipment and necessary software to automate calculations. 2. Organization of network communications, especially in the transition to regionalization of accounts, and their subsequent aggregation at the country level. 3. Providing visualization tools using GIS technologies.

In addition to these institutional capacity building, the integrated methodological action plan should be developed to collect detailed data in compliance with IRTS 2008, FDES 2013, IRES so that data suitable for the compilation of the indicators of tourism sustainability and extended tables TSA tables, covering environmental dimension of tourism sustainability become available at the same time. It is critical to:

- Focus on developing a set of indicators of tourism sustainability based on the UNWTO and EU indicator lists.
- As work on the TSA-KR advances, incorporate environmental flows in the core tables following the SEEA guidelines and the UNWTO recommendations on linking TSA and environmental accounting.

- Compile supplementary tables on the environmental assets (as data become available) and services of eco-systems entering tourism consumption and impacts of tourism on the changes in the eco-systems.
- Consider piloting accounting for environmental assets and eco-systems services in the Issyk-Kul region. Publishing estimates of experimental TSA tables and the environmentally extended TSA tables as soon as the estimation methodology becomes consistent with the TSA; RMF 2008 and SEEA guidelines and practices of other countries; this will engage the user community and help with resource mobilization for future work; experiment with the publication of combined presentation of limited (but relevant) data, rather than wait for a comprehensive but long delayed detailed data sets and accounts.

Finally, it is necessary to establish a national quality assurance framework committed to the continuous assessment, reporting and improvement of official statistics that measure the sustainability of tourism and environmental and economic accounting. This in view that the Kyrgyz Republic does not have a national quality assurance framework for official statistics.

Annexes

Annex 1. United Nations National Quality Assurance Frameworks Methodology for Official Statistics

The UN-NQAF addresses quality assurance of the development, production and dissemination of official statistics. The UN-NQAF quality principles and associated requirements consist of four levels, ranging from overarching institutional and cross-institutional management and statistical production processes to the outputs. The levels are:

Level A: Managing the statistical system

Level B: Managing the institutional environment

Level C: Managing statistical processes

Level D: Managing statistical outputs

Each level contains a concise set of **principles** and **requirements** to guarantee quality in that aspect of quality assurance and **elements to be assured** which are associated with the requirements[53]. The UN-NQAF identifies **nine** quality dimensions:

- **Relevance**: the extent to which the statistics satisfy the needs of the users;
- **Accuracy**: the closeness of estimates to the exact or true values that the statistics were intended to measure;
- **Reliability:** the closeness of the initially estimated value(s) to the subsequent estimated value(s) if preliminary figures are disseminated;
- **Timeliness**: the length of time between the end of a reference period (or date) and the dissemination of the statistics;
- **Punctuality**: the time lag between the release date and the target date by which the data or statistics should have been delivered;
- **Accessibility:** the ease and conditions with which statistical information can be obtained;
- **Clarity:** the availability of appropriate documentation relating to the statistics and the additional assistance that producers make available to users;
- **Coherence:** the ability to reliably combine statistics and data sets in different ways and for various uses. Consistency is often used as a synonym for coherence;

[53] The definitions of these concepts are as follows: a principle is a general proposition, or procedure, to which statistical agencies and organizations are committed and that will guide them in meeting their quality-related objectives; a requirement is something needed in order to ensure the implementation of the UN-NQAF: an element to be assured is a specific aspect of the UN-QAF that identifies possible activities, methods and tools to meet the requirement. In this sense, an element to be assured reflects a good practice.

- **Comparability:** the extent to which differences in statistics from different geographical areas, non-geographical domains, or over time, can be attributed to differences between the true values of the statistics.

The principles associated with each level and which should be assessed are presented in the table below.

Table 1: Levels and principles of quality assurance

Level	**#**	**Principle** *(which guide national statistical systems in meeting their quality-related objectives)*
A. Managing the statistical system	1	Coordinating the national statistical system
	2	Managing relationships with data users, data providers and other stakeholders
	3	Managing statistical standards
B. Managing the institutional environment	4	Assuring professional independence
	5	Assuring impartiality and objectivity
	6	Assuring transparency
	7	Assuring statistical confidentiality and data security
	8	Assuring the quality commitment
	9	Assuring adequacy of resources
C. Managing statistical processes	10	Assuring methodological soundness
	11	Assuring cost-effectiveness
	12	Assuring appropriate statistical procedures
	13	Managing the respondent burden
D. Managing statistical outputs	14	Assuring relevance
	15	Assuring accuracy and reliability
	16	Assuring timeliness and punctuality
	17	Assuring accessibility and clarity
	18	Assuring coherence and comparability
	19	Managing metadata

In general, such self-assessments may cover the entire national statistical system or specific statistical domain, a specific data source or specific statistics. UNSD recommends that the self-assessment **should be done by a group of staff** from the different levels of management and should involve subject matter experts from across the statistical agency with adequate experience and training in order to mitigate the risk of being overly subjective and positive, and dis-attached from the actual situation and to help in creating a common understanding; documentation/metadata and independent verification of the evidence are other measures that can help to address the risk of subjectivity. This self-assessment checklist is meant for conducting regular and rigorous quality assessments with the objective to identify improvement actions. However, **it can also be used to provide an initial assessment (as part of a scoping exercise)**, for example, for learning purposes to introduce staff of the NSO and NSS to quality assurance.

Ideally, the self-assessment checklist should evaluate the requirements based on a detailed analysis of the compliance with the elements to be assured provided in the Manual. However, analyzing all elements is demanding sufficient time may not be available, therefore, UNSD advice is to conduct initial or basic self-assessment on an evaluation of the requirements and to check the elements **judged to be most important from the users point of view**. It is further suggested to base the scoring of the requirement on the number and importance of the elements that are met using three assessment categories (scores):

- "Full compliance" with a requirement would mean that most applicable elements and all major applicable elements are fully (or in some cases partially) met and that there is only little room for improvement;
- "Partial compliance" with a requirement would mean that some but not all major applicable elements are fully or partially met, and that some major improvements are needed;
- "No compliance" with a requirement would mean that no major applicable elements are fully or partially met, and that urgent action is necessary.

Deciding if an element is major or not might be a subjective judgment and depend on the particular context. "**Overall, the subjectivity in using the assessment schema is acknowledged"[54].**

These assessments are entered for 87 requirements and the checklist generates a summary tables and charts, which present counts of each compliance assessment category for each principle. Further, the summary presents the compliance score per principle. It is calculated as the average score across all requirements multiplied by 100, with the following numerical scores for each of the requirement: full compliance (1), partial compliance (0.5) and non-compliance (0). The overall score is calculated as an average score of all the principles. For each level and principle, the resulting average score will be between 0 (No compliance) and 100 (Full compliance).

As tourism sustainability has economic, environmental and social dimensions, a comprehensive assessment of data quality for measuring tourism sustainability should include large parts of (at least): economic statistics, environment statistics, energy statistics and social statistics which may shed light on the tourism sustainability as it is defined by UNWTO. Obviously, this is a task for a teamwork and would require a substantial amount of time to conduct. It might be done in the future with the consent of the NSC. As an initial input to this potential effort, the following assessment is made based on the information obtained during the assessment of the capacity of the national statistical system of the Kyrgyz Republic to compile the SDG indicators and additional desk study of the data and metadata available on the NSC website.

[54] See "Instructions" page of the UN self-assessment check list, available here.

Annex 2. Extending Tourism Satellite Account to measure tourism sustainability

Standardized tables linking environmental flows with TSA

Starting with SEEA concept of linking environmental flows with economic flows, the UNWTO Working Group of Experts on measuring the sustainability of tourism prepared several standardized tables which can be used to implement such linking. All those standardized tables should not present a conceptual difficulty for the NSC staff working with national accounts as the NSC has experience with compiling supply and use tables as well as environment and energy statistics. It is advised, in this connection, that the NSC includes in its work plans on the TSA development an extension of the experimental tables to cover environmental flows as recommended in SEEA and by the UNWTO Expert Group.

To facilitate this work, below is a reproduction of the format of the physical supply and use table covering energy flows with respect to tourism related activities[55]. The energy flows are selected because NSC has experience in compiling energy balance[56] and cooperated with the UN Statistics Division on development of energy account. An Excel file containing this table is submitted separately. The format presented below includes some customization based on experience gained while working on the experimental TSA tables (inclusion of not only tourism characteristic but also tourism connected activities). A more detailed format can be developed depending how detailed energy statistics might be derived from NSC microdata.

Table 1: A draft format of the physical supply and use table covering energy flows with respect to tourism related activities

Physical supply table for energy										
	Flows of energy products and generation of residuals						Accumulation	Flows from the rest of the world	Flows from the environment	Total
	Tourism related activities			Electricity and gas supply	Other industries	Households		Imports		
	Tourism characteristic activities (e.g., accommodation for visitors,	Tourism connected activities (e.g., retail trade, short	Total of tourism related activities							

[55] Linking the TSA and the SEEA: A Technical Note (UNWTO), available here.

[56] A note informing users that energy balance for 2018 was compiled is available on the NSC website.

	food & beverage, transportation etc.)		term health and education, etc.											
	Total	Tourism	Total	Tourism	Total	Tourism	Total	Total	Tourism					
1. Energy from natural inputs														
Natural resource inputs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Inputs of energy from renewable sources	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Other natural inputs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
2. Energy products														
Total production of energy products										n/a	n/a		n/a	
3. Energy residuals														
Total energy residuals											n/a	n/a	n/a	
4. Other residual flows														
Residuals from end-use for non-energy purposes											n/a	n/a	n/a	
Energy from solid waste	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	
Total supply														

Physical use table for energy									
	Intermediate consumption; use of energy resources; receipt of energy losses					Final consu	Accumulat	Flows to the	Flows	Total
	Tourism related activities									
	Tourism characteristic activities (e.g., accommodation for visitors, food & beverage, transportation etc.)	Tourism connected activities (e.g., retail trade, short term health and education, etc.	Total of tourism related activities	Electricity and gas supply	Other industries			Exports		

	To tal	To uri sm	To tal	To uri	To '	To uri	To tal	To '	To '					
1. Energy resources														
Natural resource inputs										n/a	n/a	n/a	n/a	
Inputs of energy from renewable sources										n/a	n/a	n/a	n/a	
Other natural inputs										n/a	n/a	n/a	n/a	
2. Energy products														
Transformation of energy products - Total	n/a	n/a	n/a	n/a	n/a	n/a	n/a			n/a	n/a	n/a	n/a	
End-use energy products by SIEC class														
Coal														
Peat and peat products														
Oil shale/oil sands														
Natural gas														
Oil														
Biofuels													n/a	
Waste													n/a	
Electricity													n/a	
Heat													n/a	
Nuclear fuels and other fuels													n/a	
Total end-use for energy purposes													n/a	
Total end-use for non-energy purposes														
3. Energy residuals														
Total energy residuals	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
4. Other residual flows														
Residuals from end-use	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	

for non-energy purposes														
Energy from solid waste										n/a	n/a	n/a	n/a	
Total Use														

It should be acknowledged that while compiling such tables is feasible in the long run, it would require strong efforts and commitment as energy statistics in the Kyrgyz Republic has **significant shortcomings** as explained in Section C.

Here it has to be added that the NSC publishes data on (a) expenses of enterprises and organizations for environmental protection and; (b) on state budget expenditures on environmental protection. The latter is similar to the TSA concept of tourism collective consumption. It would be right from the point of view of managing statistical process, to make arrangements for combining data collection on state expenditure on tourism promotion and environment protection to ensure more efficient data flow and interoperability of the obtained data sets. This alone will be a good step forward towards the compilation of an environmentally extended TSA.

Estimating the tourism share of environmental flows

Estimating the tourism share of environmental flows for use in the tables described above is cumbersome for any country, as the available data on environmental flows normally does not make reference to tourism, though environmental flows related to tourism activity are embedded in it. While some detailed information may be available in some cases (and should be used if at all possible), the UNWTO note concludes "that it is unlikely to envisage these data being available on a regular basis for official statistics"[57]. In general, this is the case in the Kyrgyz Republic as well. Therefore, making sound estimates should be considered, at least at this time, as more realistic way forward. Making such estimates is difficult as well, but it is feasible if available microdata are recompiled following the recommendations provided in SEEA-EA and in the UNWTO technical note on linking SEEA and TSA.

UNWTO describes three different tourism ratios which can be used for this purpose[58]:

- Output ratios - calculated by dividing an industry's output sold to visitors by its total output
- Value added ratios - calculated by dividing an industry's value added attributable to sales of output to visitors by its total value added
- Intermediate consumption ratios – calculated by dividing an industry's intermediate consumption for the production of output sold to visitors by its total intermediate consumption

[57] Linking the TSA and the SEEA: A Technical Note (UNWTO, Page 17
[58] Linking the TSA and the SEEA: A Technical Note (UNWTO, page 17

Each of these could be used to estimate, for each group of tourism related activities, the proportion of an environmental flow (water, energy, GHG emissions, solid waste, etc.) attributable to visitor activity and hence to tourism. All of these ratios can be derived from a TSA table 6 if this table is compiled in full detail. This not done yet in TSA-KG, but the applicability of theses rations should be noted for future reference (text below follows the explanations provided in the UNWTO technical note):

Output ratios should be used where the magnitude of the environmental flow of interest is directly related to the level of production. UNWTO provides the following example: the tourism share of water use in the restaurant industry may be estimated by multiplying the total water use of that industry by the output ratios of the restaurant industry as defined above.

Note on feasibility in KR: *The first version of the experimental table 6 being currently developed uses output ratios as tentative estimated by NSC or based on other countries experiences.*

Intermediate consumption ratios are best applied for those environmental flows that are inputs to production (e.g. energy)

Note on feasibility in KR: *NSC compiles energy balance, it is likely that intermediate consumption ratios can be derived form the micro data used in its compilation. But this has to be further examined!*

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

Note on feasibility in KR: *Not recommended.*

Combined presentations for sustainable tourism

The UNWTO recommends that countries prepare and publish combined presentations which highlight key measures on tourism related economic activities and environmental assets and flows. Such presentations will provide a basis for the derivation of various analytically important indicators. In practice, the level of details shown in such presentations will vary depending on data availability.

Following SEEA and UNWTO recommendations, a format of the combined presentation of monetary and non-monetary flows compiled in the environmentally extended TSA is advised. This format highlights the key TSA aggregates and provides a basis for the derivation of very important indicators of tourism share in environmental flows.

Table 2: A draft format of the combined presentation of monetary and non-monetary flows compiled in the environmentally extended TSA

Combined presentation		**Tourism related activities**						Other activities		All activities, totals	
		Tourism characteristic activities (e.g., accommodation for visitors, food & beverage, transportation etc.)		Tourism connected activities (e.g., retail trade, short term health and education, etc.		Total of tourism related activities					
		Total	Tourism share	Total	Tourism share	Total	Tourism share	Total	Tourism share	Total	Tourism share
1. Monetary flows											
Output											
Intermediate consumption											
	Water										
	Energy										
	Waste treatment										
Tourism Direct Gross Value Added											
2. Employment											
	Tourism related employment										
3. Environmental flows											
	Net water use										
	Own-account water abstraction										
	Wastewater generated										
	Net energy use										
	Use of energy from renewable sources										
	GHG emissions										
	Solid waste generation										
4. Potential indicators											

	Water use in tourism/TDGVA										
	Share of renewable energy use in final energy use										
	GHG emissions/tourism share in output										

Annex 3. Overview of international recommendations to measure sustainability of tourism

This section contains a brief introduction of major sets of international recommendations providing the conceptual framework for developing measures of tourism sustainability. The feasibility of measuring tourism sustainability in the Kyrgyz Republic is assessed by evaluating how well those recommendations are incorporated in the tourism policy documents and in statistical process being carried out in the country. Annex 1 provides additional details on these recommendations.

International Recommendations for Tourism Statistics 2008

The International Recommendations for Tourism Statistics 2008 (IRTS 2008) provides the basic concepts, definitions and classifications for use in description and analysis of various aspects of tourism including definition of a visitor (overnight visitors are referred to as tourists; same-day visitor are called excursionist), different forms of tourism, main purposes of a tourism trip, the concept of tourism expenditure and its components, classification of tourism characteristic products and activities that can be used in the analysis of tourism.

Chapter 8 of ITRS 2008 provides guidelines on understanding tourism in its relationship with other macroeconomic frameworks. It includes a special section D entitled *Tourism and sustainability.* This section recognizes that the issue of tourism and sustainability is an increasingly important one and any measurement of tourism and its effect on an economy must take into account its social, economic and environmental impacts. IRTS 2008 acknowledges that both approaches (macro-accounting and indicators) have their potential and challenges for measuring at different territorial levels the links between tourism and the environment and thus **are recommended as the first priority regarding tourism sustainability issues**. However, IRTS 2008 does not provide a recommendation on a specific set of indicators on tourism sustainability. This task was taken up by the UNWTO in the context of its project *Measuring the Sustainability of Tourism* launched in 2015.

Tourism Satellite Account: Recommended Methodological Framework 2008

The System of National Accounts 2008 (SNA 2008)[59] includes a specific framework showing the interface between demand for goods and services and the supply of these goods and services within an economy, namely the supply and use tables. The specific characteristics of tourism cannot be made explicit within the core of the System of National Accounts, where transactors are classified according to (relatively) permanent characteristics (while being a tourist is a temporary characteristic of a person). In order to deal with such situations, the System of National Accounts 2008 suggests the use of satellite accounts, annexed to its core, and which, to an extent to be defined in each case, share its basic concepts, definitions, classifications and accounting rules. One of them is Tourism Satellite Account.

Tourism Satellite Account is an accounting tool for presenting and analyzing the interaction between visitors demand for goods and services and the supply of such goods and services, which are consumed by visitors. The first recommendations on the development of the Tourism Satellite Account conceptual framework was proposed in 2000. The current version of the recommendations was approved in 2008 and published as *Tourism Satellite Account: Recommended Methodological Framework 2008* (TSA:RMF 2008). This document describes in detail the accounting framework for describing tourism's role in economic activity using a set of 10 interlinked tables. The TSA:RMF is underpinned by the IRTS 2008 which provides the international standard for the definition of basic tourism concepts and classifications.

System of Environmental and Economic Accounts

In 2012, the UN Statistical Commission (UNSC) "agreed to adopt the 2012 SEEA central framework as the initial version of the international standard for environmental-economic accounts, subject to further revision, acknowledging that further improvements on measurement are necessary on specific issues" and "recognized that the SEEA implementation should be considered as a long-term program, to be implemented flexibly and incrementally, giving full consideration to national circumstances and requirements"[60]. The SEEA provides methodology for compiling accounts for material natural resources like minerals, water, energy and timber, as well as the emission of pollutants like greenhouse gases. After adoption of *SEEA: Central framework*, the UN published *SEEA 2012: Applications and Extensions (SEEA-AE)*. SEEA-AE promotes a decomposition of existing SEEA accounts using additional information, for instance through linking to certain themes where there is an interaction between human activity and the environment, such as tourism[61] or health. This publication contains a special section 4.4.2 *Presentation of environmental-economic accounts data for tourism* which provides an overview of the conceptual links between the Tourism Satellite Account (TSA:RMF 2008), and the SEEA.

Framework for the Development of Environment Statistics 2013

[59] Available at: https://unstats.un.org/unsd/nationalaccount/docs/sna2008.pdf

[60] Report on the forty-third session of UNSC (28 February-2 March 2012), page 11; available at: https://unstats.un.org/unsd/statcom/43rd-session/documents/statcom-2012-43rd-report-E.pdf

[61] SEEA-2010: Applications and Extensions, para 4.2; available at: https://seea.un.org/applications-extensions

Framework for the Development of Environment Statistics (FDES 2013) was adopted by the UN Statistical Commission in 2013. It covers issues and aspects of the environment that are relevant for analysis, policy- and decision-making. It is designed to assist all countries in the formulation of environment statistics program as well as to guide the development of multipurpose data collection processes and databases, including compilation of data intended to assess the environmental impact of tourism with respect to water use, waste and other residuals generation, air emissions generated by tourists, etc.[62]

Statistical Framework for Measuring the Sustainability of Tourism

While the work on the indicators for tourism sustainability was going on since 1990, the new urgency was added by the request from the UN Statistical Commission to advise on how to incorporate measures of tourism sustainability in the 2030 Sustainable Development Agenda. In response to this request, the UNWTO launched in 2015 a project entitled *Measuring Sustainable Tourism.* Part of this project is development of *Statistical Framework for Measuring the Sustainability of Tourism* (SF-MST)[63]. Overall, SF-MST is intended to provide an integrated information base to better inform on sustainability of tourism, to facilitate dialogue between different sectors and to encourage integrated, locally relevant decision making. At the moment, SF-MST is still a work-in-progress, but it is expected to be submitted to the UN Statistical Commission in 2021.

[62] See: Framework for the Development of Environment Statistics, UN, 2013, section 3.1 *Environmental Conditions and Quality*, especially paras 3.151, 3.161, 3.169 and 3.174; available at: https://unstats.un.org/unsd/envstats/fdes.cshtml

[63] Was submitted in 2018 to the UN Statistical Commission as a background document.

Annex 4. Overview of key publications approved by the UN Statistical Commission and containing recommendations on measurement of tourism sustainability

IRTS 2008

IRTS 2008 provides, on the basis of which, countries are encouraged to develop their tourism statistics according to the following guidelines:

- Estimates should be based on reliable statistical sources, where visitors and producers of goods and services are both observed
- Observations should be statistical in character and produced on an ongoing basis, combining the compilation of benchmark estimations with the use of indicators to enhance the usefulness of the results
- Data should be comparable over time within the same country, comparable among countries and comparable with other fields of economic activities
- Data should be internally consistent and presented within macroeconomic frameworks recognized at the international level.

IRTS 2008 recognizes that tourism contributes to irreversible damage to the environment, through pressure on fragile ecosystems, through construction of resorts or roads that destroy the natural sites and heritage, through the pressure that is exerted on land, water and air and through diverse processes of all kinds generating pollution, discharge of residuals, erosion, deforestation, etc. This damage may also affect the feasibility of new tourism development in given locations or the profitability of present tourism investments and, consequently, affect job creation and employment.

System of Environmental and Economic Accounts and extension of TSA

In 2012, the UN Statistical Commission (UNSC) "agreed to adopt the 2012 SEEA central framework as the initial version of the international standard for environmental-economic accounts, subject to further revision, acknowledging that further improvements on measurement are necessary on specific issues" and "recognized that the SEEA implementation should be considered as a long-term programme, to be implemented flexibly and incrementally, giving full consideration to national circumstances and requirements"[64]. The SEEA provides methodology for compiling accounts for material natural resources like minerals, water, energy and timber, as well as the emission of pollutants like greenhouse gases.

[64] Report on the forty-third session of UNSC (28 February-2 March 2012), page 11; available at: https://unstats.un.org/unsd/statcom/43rd-session/documents/statcom-2012-43rd-report-E.pdf

While discussing possibilities of linking TSA to SEEA, it has to be kept in mind that SEEA can be separated into four broad types of accounting[65]:

- *Accounting for environmental flows* in physical terms; into, within and from the economy. This includes accounting for flows of water, energy, air emissions, solid waste and emissions to water; and can be extended to account for individual elements and substances such as carbon and nitrogen.
- *Accounting for natural resources* in terms of stocks and changes in stocks (e.g. discoveries of resources, depletion). This includes accounting for stocks of mineral and energy resources, timber, fish, water and soil.
- *Accounting for environmental transactions* that are included in the SNA but not specifically identified as "environmental". This includes accounting for environmental protection and resource management expenditure, environmental taxes and subsidies and the supply and use of products used for environmental purposes known as environmental goods and services.
- *Accounting for land and ecosystems*. In this type of accounting the focus is on understanding the changing composition of the area of a country in terms of land use and land cover and the quality of the land in terms of the condition of its ecosystems. Accounting for ecosystems also involves considering the benefits derived from them and, correspondingly, the measurement of the flows of ecosystem services they generate. This allows for evaluation of the capacity of ecosystems to continue to generate market and non-market ecosystem services.

After adoption of *SEEA: Central framework*, the UN published *SEEA 2012: Applications and Extensions (SEEA-AE)*, prepared under the auspices of the Committee of Experts on Environmental-Economic Accounting. SEEA-AE promotes a decomposition of existing SEEA accounts using additional information, for instance through linking to specific spatial areas, through further breakdown of the household sector, or through a focus on certain themes where there is an interaction between human activity and the environment, such as tourism[66] or health. This publication contains a special section 4.4.2 *Presentation of environmental-economic accounts data for tourism* which provides an overview of the conceptual links between the Tourism Satellite Account (TSA:RMF 2008), and the SEEA. According to SEEA-AE "combining of TSA and SEEA would enable consideration, within an integrated dataset of both the contribution of tourism to the economy and the environmental uses and pressures of tourism activities"[67].

Using the classification of tourism related economic activities and products, the connection can be made between TSA and environmental flows under condition that additional data disaggregation will be required. Thus, the core of the approach consists of establishing a more complex type of input/output matrix in which not only the 'usual' inputs are considered, but also environment

[65] LINKING THE TSA AND THE SEEA: A TECHNICAL NOTE (2018) Page 5
[66] SEEA-2010: Applications and Extensions, para 4.2; available at: https://seea.un.org/applications-extensions
[67] SEEA-2010: Applications and Extensions, para 4.44

inputs established in quantity, and output also includes waste, greenhouse gas emissions and other environmentally significant by-products.

Extending TSA by incorporating environmental flows moves TSA in the direction of wealth accounting in general and in the direction of the System of Environmental-Economic Accounting (with a focus on natural capital). Wealth accounting provides a theoretical approach to the integration of data across multiple dimensions to provide insights into sustainability, including in sustainability of tourism. In the Kyrgyz Republic, like in many other countries, the challenge in the development of measures of tourism sustainability is in (a) establishing a proper methodological framework to ensure alignment between tourism statistics, environment and economic statistics through the use of common concepts and harmonized classifications and (b) mobilizing additional resources for developing adequate data sources.

In recent years, beyond the measurement of the economic contribution of tourism in terms of Tourism Satellite Account aggregates and other complementary and/or alternative modelling exercises, an increasing number of initiatives have appeared at subnational levels in order to generate indicators for analysing, monitoring or evaluating the environmental implications of tourism development in specific areas. The existence of both the Tourism Satellite Account and the system of environmental and economic accounts (SEEA) allows a country where both international recommendations are being developed to estimate the links between tourism and the environment at the level of the national economy. This could be done in two ways:

- Incorporating tourism as a specific set of industries and of consumers within the hybrid flow accounts of the environmental accounts;
- "Greening" the tourism GDP that is derived from the Tourism Satellite Account, taking into consideration the cost of the degradation of the environment and the use of the natural capital by tourism; expenditures that prevent degradation could also be taken into consideration as a further adjustment.

The core of this macro-approach at national level consists in establishing a more complex type of input/output matrix in which not only the "usual" inputs are considered, but also environment inputs are established in quantity, and output also includes waste, greenhouse gas emissions and other environmentally significant by products. Consumption of fixed capital would also include estimation of the degradation of the environmental assets. As the core of the Tourism Satellite Account is a representation of tourism industries and tourism consumption within a supply and use framework, it could be adapted into this type of analysis, provided both the Tourism Satellite Account and environmental accounts are compiled at a sufficient level of detail to allow some type of mutual integration. Nevertheless, leaving aside conceptual issues, there is increasing evidence that developing each type of account is not a straightforward exercise.

The second approach is more empirical and might be more appealing to countries in which existing tourism regions and destinations would be interested in the design of concrete and geographically-oriented goals and policies in terms of developing a more environmentally-friendly tourism with which all stakeholders might be associated, including visitors. In this case, the focus would be to

develop a set of indicators to highlight an interface between tourism and environmental issues that might identify phenomena or changes that require further analysis and possible action. Like other indicators, these indicators are only tools for evaluation and have to be interpreted in context to acquire their full meaning. They might need to be supplemented by other qualitative and scientific information, notably to explain driving forces behind indicator changes, which form the basis for an assessment. These indicators might be used as a central instrument for improved planning and management, bringing managers the information they need when it is required and in a form that will empower better decisions. It is recommended that linking tourism and sustainability be considered a priority.

Statistical Framework for Measuring the Sustainability of Tourism

While work on the indicators of tourism sustainability was going on for since 1990th promoted by the adoption in 1993 of *Recommendations on Tourism Statistics* and publication (in 2005) of the UNWTO *Guidebook on Indicators of Sustainable Development for Tourism Destinations.* The new urgency was added by the request from the UN Statistical Commission to advise on how to incorporate measures of tourism sustainability in the 2030 Sustainable Development Agenda. In response to this request the UNWTO launched in 2015 a project entitled *Measuring Sustainable Tourism.* Part of this project is development of *Statistical Framework for Measuring Sustainable Tourism* (SF-MST). It was planned to be completed over a rather short period of time (by 2017) and cover economic, environmental and social dimensions of tourism[68]. Overall, SF-MST was intended to provide an integrated information base to better inform on sustainable tourism, to facilitate dialogue between different sectors and to encourage integrated, locally relevant decision making. At the moment, SF-MST is still a work-in-progress, but it is expected to be submitted to the UN Statistical Commission for consideration in 2021.

Draft Statistical Framework for Measuring the Sustainability of Tourism confirms that most relevant for sustainable tourism are international recommendations contained in the described above IRTS 2008, FDES 2013, SNA 2008, TSA:RMF and SEEA-2012. SF-MST was envisaged that "a central feature of the statistical framework will be the connection between the established accounting framework for tourism, tourism satellite accounts (TSA) and accounts from the System of Environmental-Economic Accounting (SEEA) framework". In using an accounting basis for the statistical framework, the project seeks to harness the general benefits that arise from the use of accounting approaches in ensuring internal coherence, the ability to understand data gaps and place different information in context, and the potential to derive indicators based on consistently defined economic and environmental information.

[68] See UNWTO: https://www.unwto.org/Measuring-Sustainability-Tourism

Annex 5. Stylized tourism-environment accounts recommended by SEEA

SEEA-AE presents the **stylized tourism-environment accounts** – specifying tourism industries and tourism characteristic consumption products. These stylized accounts can be recommended as a starting point for extending experimental TSA-KR tables to cover the environmental flows.

A generic SEEA-AE stylized tourism-environment account is presented below with two modifications:

It is an aggregated version of the detailed table which included an accompanying Excel file and;

It covers not only tourism characteristic activities and products, but tourism connected activities and products as well. This is because the experience of many countries (including EU) shows that tourism connected activities contribute a sizable portion of Tourism Direct GDP (tentative calculations show that this is also true in the case of the Kyrgyz Republic).

Table 1: An aggregated draft format of the SEEA-AE stylized tourism-environment account

		Tourism Satellite Account – Monetary units					**Environmental accounts Physical units**						
		Economic aggregates				**Other**	**Environmental pressures**						
							Residual flows			**Natural inputs**			
		Output	Intermediate consumption	Valued Added	Tourism share (of output)	Tourism related employment	Air emissions	Water emission	Solid waste	Energy resources	Minerals	Biological resources	Water
Supply (tourism related activities industries)	**Tourism related activities, total**												
	A. Tourism characteristic activities, internationally comparable												
	B. Tourism characteristic activities, specific to the Kyrgyz Republic												

	C. Tourism connected activities, as applicable in the Kyrgyz Republic												
Use (tourism related products)	**Tourism related products, total**												
	A. Tourism characteristic products, internationally comparable												
	B. Tourism characteristic products, specific to the Kyrgyz Republic												
	C. Tourism connected products, as applicable in the Kyrgyz Republic												

Once the required time series are made available, this table can be used as a key tool for assessing the sustainability of actions taken or policies proposed for adoption in the tourism sector.

Annex 6. Tourism sustainability in the context of the SDG global indicator framework

Tourism sustainability was of concern for the policy makers including in the process of drafting sustainable development goals and targets. The UNGA resolution 70/1 *Transforming our world: the 2030 Agenda for Sustainable Development* stated, on behalf of the member states, that "We are also determined to promote sustainable tourism" (para 33) and formulated three targets which explicitly refer to the concept of sustainable tourism, namely[69]:

- Target 8.9 *By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products;*
- Target 12.b *Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products, and*
- Target 14.7 *By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.*

The Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) was created by the UN Statistical Commission (UNSC) to establish a global SDG indicator framework. IAEG-SDG members, comprised of countries on rotational bases, and observers (key international organizations) developed such a framework. It was adopted by the UNSC and

[69] See Resolution 70/1 adopted by the General Assembly on 25 September 2015 *Transforming our world: the 2030 Agenda for Sustainable Development*, available at: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

subsequently by the UN General Assembly[70] (in 2017). An Annex to this resolution contained the global SDG indicator framework, which included the following indicators on tourism sustainability:

- 8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate
- 8.9.2 Proportion of jobs in sustainable tourism industries out of total tourism jobs
- 12.b.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools

In March 2020 the UN Statistical Commission at its 51st session conducted a comprehensive review of the global SDG indicator framework. Based on the results of the review the Commission deleted some indicators, reformulated some others and added several new ones. With respect to the three above mention indicators on tourism sustainability, the Commission agreed with the recommendations of the IAEG-SDG and:

Adopted deletion of indictor 8.9.2 as the methodological work on it was not completed and taking into account the concerns expressed by the UNWTO Committee on Statistics and the Tourism Satellite Account.[71]

Reformulated indicator 12.b.1 as "12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability"

As of now, there is only one global indicator to monitor target 8.9 "By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products"[72] which is 8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate.

It should be recalled in this connection that TDP 2019-2020 included an indicator intended to measure the gross value added by tourism industry to the GDP. This indicator is important, but it is not exactly the same what is meant in the global indicator 8.9.1, which explicitly call for compilation of tourism direct GDP which can be compiled only if country compiles the Tourism Satellite Account. The work, which started in this direction with the technical assistance from the World Bank, is even more important in the light of this decision of UNSC.

Reformulated SDG indicator 12.b.1 implies that countries should implement standard accounting tools to monitor the economic and environmental aspects of tourism sustainability. This points in the direction on extending of the emerging experimental tables of the TSA-KR to include recommendations contained in another international statistical standard - the System of Environmental and Economic Accounts (SEEA) which provides link to even broader

[70] See: UNGA resolution 71/313 *Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development*

[71] See: The updated tier classification available at: https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/

[72] See IAEG-SDG report to the UNSC, Annex II, section D. Proposed deletions, available at: https://unstats.un.org/unsd/statcom/51st-session/documents/2020-4-SDG-HLG-E.pdf

understanding (and measuring) of tourism sustainability in the context of wealth accounting, especially accounting for natural capital.

Based on the decisions of the Commission and taking into account the need in availability of a better measures of tourism sustainability, the next section of this report will be focused on the recommendations and experiences relevant for developing a system of indicators on sustainable tourism in KR. It will be followed by a brief review and recommendations on the extension of the current work on the TSA-KR to include measures of tourism sustainability.

Annex 7. Draft UNWTO Tourism Indicators for Monitoring the Sustainability of Tourism

Note: This draft was endorsed at the second meeting of the UNWTO Working group of experts on measuring the sustainability of tourism (24-25 October 2018, in UNWTO Headquarters, Madrid, Spain).

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
1	"Tourism Direct Gross Domestic Product" (TDGDP), including the respective share related to overall economy	Tourism Satellite Accounts (TSA)	-	TSA is not available in all countries; "Flash Tourism direct GDP method" might be an alternative and feasible.
1	Persons employed (expressed by "Full-time equivalents"; FTE) in the tourism industries, including the respective share related to overall employment	TSA; Labour Force Survey (LFS); Structural Business Statistics /SBS)	-	Apart from TSA it is assumed that at least Labor Force Survey and Structural Business Statistics do exist in countries.
2	Share of tourism intermediate consumption by hotels, restaurants etc. from domestic agriculture	National Accounts (NA), Supply-Use-Table (SUT), Input-Output Statistics (IO); Economic Accounts for Agriculture	-	Agricultural products as intermediate consumption for hotels and restaurant.
2	Share of agricultural income from agro-tourism activity	Integrated Farm Survey (IFS), Economic Accounts for Agriculture, accommodation statistics	55 (Accommodation) 5610, 5629 and 56307)	Definition of "agro-tourism activity" might be necessary.
3	Share of health tourism related to total tourism	accommodation statistics; border surveys; household surveys	-	Estimates based on health related accommodation; survey on purpose of trip, if available; health tourism has to be defined

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
4	Change in average skills (years of training) of employees/or persons employed in tourism industries	Ad hoc surveys; statistics on formal and non-formal education	-	Kind of education: Formal education: Active learning processes during school education, vocational training and continuing education, mostly within an institutional framework and success is formally confirmed by certificates. Learning activities outside formal education are classified as non-formal education or informal learning. Availability and comparability among countries might be questionable.
4	Proportion of employed persons/employees in tourism industries with school education compared to the share of overall population	Labour Force Survey (LFR); statistics on education; TSA (Table 7 "Employment in tourism industries")	-	Definition of "school education": i.e. kind of vocational schools, universities of applied sciences, etc.
5	Share of women in tourism jobs (compared to the overall economy)	TSA (Table 7 "Employment in tourism industries")	-	TSA-Table 7 is not available in all countries; "Tourism jobs" refers to "tourism industries"; UNWTO compile data on FTE by status in employment and by gender
5	Share of women in tourism management roles	Particular surveys in companies/ businesses	55 (Accommodation) 5610, 5629 and 5630	"Tourism management role" has to be defined (in 55 and 56).
6	Final water use in tourism industries / TDGDP	SEEA-Water8) Technical note linking TSA and SEEA	-	Analysis of tourism related final water use might be additionally useful; data hardly available.
6	Share of treated waste water from tourism industries	SEEA-Water Technical note linking TSA and SEEA	55 (Accommodation) 5610, 5629 and 5630	Data availability might be questionable; "tourism businesses" might refer to 55 and 56.

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
6	Waste water per guest in the accommodation industry	SEEA-Water; SBS; accommodation statistics; border survey Technical note linking TSA and SEEA	55 (Accommodation)	Data availability might be questionable; in addition separation of general and tourism related waste water might be difficult. Best estimates based on average waste water per day/person in general and duration of stay could be helpful.
6	Waste water per day and capita for tourists	SEEA-Water; SBS; accommodation statistics; border survey Technical note linking TSA and SEEA	-	Data availability might be questionable; in addition separation of general and tourism related sewage water might be difficult. Best estimates based on average sewage water per day/person in general and duration of stay could be helpful. Comparing waste per capita of visitors and residents (high and low season) might be another possibility.
7	Share of final energy use related to Tourism Direct GDP (TDGDP)	Energy Balances, Energy Accounts, TSA Technical note linking TSA and SEEA	Final Energy Use: Private households Industries (ISIC Rev.4)	Availability of detailed energy accounts and TSA might be questionable.
7	Share of renewable energy in total tourism energy use	Energy Balances, Energy Accounts Technical note linking TSA and SEEA	55 (Accommodation) 5610, 5629 and 5630	Separation of renewable energy use in tourism might be critical; restriction to ISIC 55 and 56, only, might be feasible.
8	SDG 8.9: Tourism direct GDP (TDGDP)	Tourism Satellite Accounts (TSA)	-	TSA is not available in all countries; "Flash Tourism direct GDP Method" might be an alternative and feasible.
8	SDG 8.9: Number of jobs in tourism industries Share tourism employment related to total employment	TSA (Table 7 "Employment in tourism industries")	-	TSA-Table 7 is not available in all countries. Best estimates based on SBS data might be another opportunity.
8	SDG 8.9: Energy use in tourism: Net domestic energy use by tourism industries	Energy Accounts Technical note linking TSA and SEEA	55 (Accommodation) 5610, 5629 and 5630	Intermediate energy consumption in industries 55 and 56 might be available.

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
8	Total international receipts and taxation from international visitors	Travel Balance of Payment (TBoP; Central Bank/IMF); Tax statistics	-	Tourism credit figures; tourism related taxation has to be defined9)
9	Occupancy rates for accommodation industry (based on beds)	Accommodation statistics, SBS	55 (Accommodation)	Commercial and non-commercial accommodation (both paid) should be considered.
9	Share of investment in transport infrastructure related to total infrastructure investment	NA (Gross fixed capital formation), SBS, data from respective ministry	0	Availability of detailed data on budget issues might be questionable; "transport infrastructure" have to be defined (passenger transport).
9	Number of trips made by mode of transport to and from the tourist destination	Border surveys; household surveys	-	Household surveys/border surveys might be sample surveys; sample error has to be taken into account.
10	Net tourism exports (net inflow from tourism)	Travel Balance of Payment (TBoP; Central Bank/IMF)	-	Calculation of credit/debit and its difference.
10	Average earnings in tourism compared to national average	Structure of Earnings Survey (SES; social statistics)	55 (Accommodation) 5610, 5629 and 5630	Focus on accommodation and food&beverage sector is recommended
10	Share of travel exports related to total service exports	TBoP, BoP (current account; Central Bank/IMF)	-	TBoP concept is broader than that of tourism statistics. Indicator is showing how much the tourism sector is compensating a deficit of the current account.
10	Average income of persons working in tourism industries compared to residents (by region)	Structure of Earnings Survey (SES), personal income statistics	-	Data availability on tourism industry level might be questionable.
11	The accessibility of tourism facilities	Transport statistics	-	The terms "tourism facilities" and "accessibility" is unclear: "tourism facility" has to be defined (sightseeing attractions, beaches, cultural sites, etc.) the "accessibility" might be defined by number of transport connections available, timetable, etc.

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
11	Tourism intensity: The number of visitors per 100 residents	Tourism Statistics, population statistics	-	Visitors: overnight tourists (same-day visitors´data is hardly available); UNWTO compiles data at national level in the Compendium of Tourism Statistics: visitors arrivals/ country population
11	The number of beds in tourist accommodation facilities per 100 residents	Tourism Statistics, population statistics	-	Commercial and non-commercial accommodation (both paid) should be considered.
12	SDG 12b: Stage of implementation of the Statistical Framework for Measuring Sustainable Tourism	Separate survey necessary	-	I.e. number of filled in tables (major part) available, part of statistical program of NSIs, etc.
12	Share of solid waste10) generated by tourism industries related to total solid waste	Waste statistics Technical note linking TSA and SEEA	55 (Accommodation) 5610, 5629 and 5630	Separation of solid waste due to tourists might be critical; tourism shares (TSA) by product might serve as an estimation basis.
12	Share of solid waste recycled in the tourism industries	Waste statistics	-	Separation of "waste recycled" might be critical.
12	Sewage produced per tourist compared to sewage produced per resident	Water account; TSA	55 (Accommodation) 5610, 5629 and 5630	Separation of sewage due to tourists might be critical; restriction to ISIC 55 and 56, only, might be feasible. Tourism shares (TSA) by product might serve as an estimation basis (i.e. in particular relevant for 56).
13	"Green-House-Gas" (GHG) emissions from tourism industries compared to total economy	Air emissions accounts; Technical note linking TSA and SEEA	55 (Accommodation) 5610, 5629 and 5630	Separation of GHG by tourism industries might be critical; restriction to ISIC 55 and 56, only, might be feasible. Tourism shares (TSA) by product might serve as an estimation basis (i.e. in particular for 56).
14	SDG 14.7: The economic impact of sustainable fisheries, aquaculture, tourism and other coastal marine resources uses	Agricultural statistics (fishery, aquaculture, etc.), TSA	0	Definition of "sustainable fisheries, aquaculture, tourism and other coastal marine resources uses" is still missing, as for "other coastal marine ressources".

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
14	Growth in TDGDP for SIDS (small island development states) and LDCs (least developed countries)	Tourism Satellite Accounts (TSA)	-	TSA might not be available in SIDS and LDCs; "Flash Tourism Direct GDP" might be an alternative and feasible.
15	Change in coastal ecosystem condition, including reef and beach condition	Separate surveys and studies necessary, data from NGOs (WWF, Greenpeace), national environment agencies SEEA experimental ecosystem accounting	-	Quality of water might be measured (see EEA)
15	Change in protected areas in tourism destinations	Data from local governments, e.g. national environment agencies, NGOs (WWF, Greenpeace), governmental National Park administration, etc.	-	Measurement according to changing protected areas sizes.
15	Contribution of national parks to "TDGDP"	Data from local governments, e.g. national environment agencies, NGOs (WWF, Greenpeace), governmental National Park administration, etc.	-	"Contribution of national parks" has to be defined (GVA, expenditure of tourists visiting national parks, etc.)
15	Share of protected areas related to total area of a country	Data from local governments (e.g. national environment agencies), NGOs	-	Measurement according to size of protected areas in relation to total area size of a country.
16	Number of visitors registering complaints with police	Criminality statistics, ministry of interior	-	Data availability is qestionable, in particular related to separation of tourism related complaints from overall complaints.

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
16	Change in rates of crime in tourism destinations	Criminality statistics, ministry of interior (e.g. local police statistics)	-	Data availability on tourism destination level might be difficult.
16	Number of offenses according to high/low seasons	Criminality statistics, ministry of interior (e.g. local police statistics)	-	Data availability on seasonal level might be questionable.
16	Rates of crime in tourism destination compared to the ones in non-tourism regions	Criminality statistics, ministry of interior (local police)	-	Data availability on tourism destination level might be questionable; non- tourism regions have to be defined. "Rates of crime" might be defined as reported offenses according to resident population.
17	Number of countries advancing implementation of the "Statistical Framework on Measuring Sustainable Tourism" (SF-MST)	Separate survey necessary	-	Part of statistical programme (NSIs) Part of political programme (Ministries)
17	Number of countries implementing TSA and SEEA based frameworks	Separate survey by UNWTO and UNSD	-	Based on availability of TSA/SEEA results.
17	Share of budget available for statistical tools for MST related to total statistical budget/total tourism budget	Separate survey necessary	-	Data availability might be questionable; separation of "budget for statistical tools for MST" might be challenging.
Additional indicators				
	Economic sustainability			
	Productivity in tourism industries	Labour Force Survey (LFS), Structural Business Statistics (SBS)	55 (Accommodation) 5610, 5629 and 5630	Persons employed, expressed by "Full- time equivalents" (FTE)
	Equity ratio of hotels	Particular surveys on hotel level might be necessary	55 (Accommodation)	Data availability might be critical.

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
	Gross operating surplus (GOS)	Structural Business Statistics (SBS)	55 (Accommodation) 5610, 5629 and 5630	-
	0	0	0	0
	Occupancy rate of rooms	Night spent statistics and accommodation capacity statistics	55 (Accommodation)	-
	Seasonal distribution according to months	Tourism statistics (accommodation statistics, border surveys)	55 (Accommodation)	The indicator is showing the fluctuations of tourism demand by months; tourism concentration in particular months might become visible.
	Environmental sustainability			
	Energy use per night spent	Energy accounts by energy commodities	55 (Accommodation)	Data availability on accommodation level might be questionable.
	Use of renewable energy in hotels	Energy accounts by energy commodities	55 (Accommodation)	Data availability on accommodation level might be questionable.
	Intensity of greenhouse gas (GHG) emissions	Enviromental statistics, air emission account	55 (Accommodation)	Data availability on accommodation level might be questionable.
	Duration of stay	Accommodation statistics, border surveys	55 (Accommodation)	Short-term stays of guest (i.e. 1-3 days) contributing more to environmental pollution due to arrival and departure by car/airplane, in particular if periodicity of trips is high.
	Social sustainability			
	Low wage share by gender	"Structure of Earning Survey" (SES)	55 (Accommodation)	Data availability on accommodation level might be questionable.
	Proportion of women employed in tourism industries	Labour Force Survey (LFS); TSA (Table 7)	55 (Accommodation) 5610, 5629 and 5630	Data availability might be questionable, if TSA is not available.

Goal	Indicator	Data sources	Classification (ISIC Rev.4)	Comments/evaluation of practicability
	Migration of local population from tourism destinations	Population statistics, migration statistics	-	Data availability on regional disaggregated level might be questionable; tourism intensive destinations have to be defined (i.e. by tourism intensity). Changes of population according to population census might be the basis.

Annex 8. Social and Economic Development Tourism Indicators of Issyk-Kul Oblast

Table 1. Tourism indicators of Issyk-Kul Region

Tourism indicators (Issyk-Kul Region)	2014	2015	2016	2017	2018
Number of hotels (table 22.1)	16	20	23	20	28
Number of sanatoriums, spa, boarding houses (with and without medical treatment) and other similar facilities etc. (table 22.2)	105	105	115	119	115
Number of tourism and sport camps, tour operators, etc. (table 22.4)	23	24	25	30	29
Number of guests in hotels (table 22.1)	6596	12534	10371	11876	15707
Number of domestic tourists (table 22.5)	244192	230555	155182	235326	216020
Number of persons in sanatoriums, spa, boarding houses with and without medical treatments similar facilities etc. (table 22.6)	205898	225216	127013	218812	194039
Number of tourists who used tour operators and tourist and sport camps (table 22.7)	38294	41830	34553	44903	38359

Environment statistics on the environmental flows and assets in the Issyk-Kul region are presented in the table below. However, like in the case above, these do not conform to international statistical standards and are of very limited use for sustainable tourism measurement frameworks.

Table 2: Environment statistics on the environmental flows and assets in the Issyk-Kul region

Environment indicators (IKR)	2014	2015	2016	2017	2018
Discharges of pollutants into surface water bodies (million m3) - Table 21.1	5369.4	5369.4	5369.4	5369.4	5369.4
Emission of air pollutants (thousand tons) - Table 21.2	2.754	2.845	2.517	2.300	2.281
Natural national parks, area (thousand Ha) - Table 21.3	38.2	38.2	38.2	38.2	38.1
Nature preserves, area (thousand Ha) - Table 21.3	168.1	168.1	168.1	443.9	443.9
Forestry, area covered by forests (thousand Ha) - Table 21.4	142.4	142.4	142.4	142.3	142.3
Forestry, reforestation (thousand, Ha) - Table 21.4	0.86	1.57	1.41	1.15	0.92

Annex 9. The European Tourism Indicator System for sustainable destination management (as it might be applied in the Kyrgyz Republic)

Code	Description
A	**Section A: Destination management**
A.1	**A.1 Sustainable tourism public policy**
A.1.1	A.1.1 Percentage of tourism enterprises/establishments in the Kyrgyz Republic using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility
A.2	**A.2 Customer satisfaction**
A.2.1	A.2.1 Percentage of tourists and same-day visitors that are satisfied with their overall experience in the Kyrgyz Republic
A.2.2	A.2.2 Percentage of repeat/return visitors (within 5 years)
B	**Section B: Economic value**
B.1	**B.1 Tourism flow (volume and value) at Kyrgyz Republic**
B.1.1	B.1.1 Number of tourist nights per month
B.1.2	B.1.2 Number of same-day visitors per month
B.1.3	B.1.3 Relative contribution of tourism to the Kyrgyz Republic's economy (% GDP)
B.1.4	B.1.4 Daily spending per overnight tourist
B.1.5	B.1.5 Daily spending per same-day visitors
B.2	**B.2 Tourism enterprise(s) performance**
B.2.1	B.2.1 Average length of stay of tourists (nights)
B.2.2	B.2.2 Occupancy rate in commercial accommodation per month and average for the year
B.3	**B.3 Quantity and quality of employment**
B.3.1	B.3.1 Direct tourism employment as percentage of total employment in the Kyrgyz Republic
B.3.2	B.3.2 Percentage of jobs in tourism that are seasonal
B.4	**B.4 Tourism supply chain**
B.4.1	B.4.1 Percentage of locally produced food, drinks, goods and services sourced by the Kyrgyz Republic's tourism enterprises
C	**Section C: Social and cultural impact**
C.1	**C.1 Community/social impact**
C.1.1	C.1.1 Number of tourists/visitors per 100 residents
C.1.2	C.1.2 Percentage of residents who are satisfied with tourism in the Kyrgyz Republic (per month/season)
C.1.3	C.1.3 Number of beds available in commercial accommodation establishments per 100 residents
C.1.4	C.1.4 Number of second homes per 100 homes
C.2	**C.2 Health and safety**
C.2.1	C.2.1 Percentage of tourists who register a complaint with the police
C.3	**C.3 Gender equality**
C.3.1	C.3.1 Percentage of men and women employed in the tourism sector
C.3.2	C.3.2 Percentage of tourism enterprises where the general manager position is held by a woman
C.4	**C.4 Inclusion/accessibility**
C.4.1	C.4.1 Percentage of rooms in commercial accommodation establishments accessible for people with disabilities
C.4.2	C.4.2 Percentage of commercial accommodation establishments participating in recognised accessibility information schemes
C.4.3	C.4.3 Percentage of public transport that is accessible to people with disabilities and specific access requirements
C.4.4	C.4.4 Percentage of tourist attractions that are accessible to people with disabilities and/or participating in recognised accessibility information schemes
C.5	**C.5 Protecting and enhancing cultural heritage, local identity and assets**
C.5.1	C.5.1 Percentage of residents that are satisfied with the impacts of tourism on the Kyrgyz Republic's identity
C.5.2	C.5.2 Percentage of the Kyrgyz Republic's events that are focused on traditional/local culture and heritage

Code	Description
D	**Section D: Environmental impact**
D.1.1	D.1.1 Percentage of tourists and same-day visitors using different modes of transport to arrive at the Kyrgyz Republic
D.1.2	D.1.2 Percentage of tourists and same-day visitors using local/soft mobility/public transport services to get around the Kyrgyz Republic
D.1.3	D.1.3 Average travel (km) by tourists and same-day visitors from home to the Kyrgyz Republic
D.1.4	D.1.4 Average carbon footprint of tourists and same-day visitors travelling from home to the Kyrgyz Republic
D.2	**D.2 Climate change**
D.2.1	D.2.1 Percentage of tourism enterprises involved in climate change mitigation schemes — such as: CO2 offset, low energy systems, etc.— and 'adaptation' responses and actions
D.2.2	D.2.2 Percentage of tourism accommodation and attraction infrastructure located in 'vulnerable zones'
D.3	**D.3 Solid waste management**
D.3.1	D.3.1 Waste production per tourist night compared to general population waste production per person (kg)
D.3.2	D.3.2 Percentage of tourism enterprises separating different types of waste
D.3.3	D.3.3 Percentage of total waste recycled per tourist compared to total waste recycled per resident per year
D.4	**D.4 Sewage treatment**
D.4.1	D.4.1 Percentage of sewage from the Kyrgyz Republic treated to at least secondary level prior to discharge
D.5	**D.5 Water management**
D.5.1	D.5.1 Water consumption per tourist night compared to general population water consumption per resident night
D.5.2	D.5.2 Percentage of tourism enterprises taking actions to reduce water consumption
D.5.3	D.5.3 Percentage of tourism enterprises using recycled water
D.6	**D.6 Energy usage**
D.6.1	D.6.1 Energy consumption per tourist night compared to general population energy consumption per resident night
D.6.2	D.6.2 Percentage of tourism enterprises that take actions to reduce energy consumption
D.6.3	D.6.3 Percentage of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at Kyrgyz Republic level per year
D.7	**D.7 Landscape and biodiversity protection**
D.7.1	D.7.1 Percentage of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscape
SUPL	**Supplementary indicators**
	Water tourism
	Water quality
S.W.1	Level of pollution in seawater per 100 ml (faecal coliforms, campylobacter)
S.W.2	Percentage of beaches awarded the Blue Flag
	Area and volume of sand nourishment
S.W.3	Total km of free beaches relative to total km of beaches
S.W.4	Percentage of beaches accessible to all
S.W.5	Number of days per year the beach/shore is closed due to contamination
	Accessible tourism
	Sustainable tourism policy
S.A.1	Percentage of the Kyrgyz Republic with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement
	Equality/accessibility
S.A.2	Percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognised accessibility information schemes

Code	Description
S.A.3	Does the Kyrgyz Republic have an identified accessibility management office or person available to the public?
S.A.4	Percentage of businesses that have a budget for accessibility improvements
	Reducing transport impact
S.A.5	Percentage of each category of transport in the Kyrgyz Republic that is accessible, i.e. public transport and private hire coaches, minibuses, taxis or minicabs