OECD Tourism Papers 2025/01

Strengthening the evidence base for a sustainable tourism future in Malta

A TOOLKIT TO OPERATIONALISE A TAILORED SET OF SUSTAINABILITY INDICATORS

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A toolkit to operationalise a tailored set of sustainability indicators

This report presents a tailored set of 37 indicators to be used as a tool to inform and enhance evidence-based policy development and sustainable destination management in Malta. It builds on existing frameworks and good practices at international, national and regional level. Indicator selection was informed by key policy priorities identified in the Malta Tourism Strategy 2021-2030, *Recover. Rethink. Revitalise.*, and through stakeholder consultations. The report presents a toolkit with five levers to incorporate tourism sustainability indicators into decision making for positive change in Malta, building the bridge from indicator selection to action.

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Executive summary

Tourism is an essential contributor to the Maltese economy. In 2023, Malta welcomed a record 3 million international tourists who spent EUR 2.7 billion, while domestic tourism has also increased significantly since the pandemic, up 54% on pre-pandemic levels in 2022. Tourism is estimated to have directly contributed 10.2% to GDP in 2023, and the number of jobs directly supported by the sector rose by 18.2% between 2019 and 2022. However, as tourism has rebounded strongly, some destinations in Malta are again experiencing negative environmental and social impacts associated with rapid and unplanned tourism growth. While substantial progress has been made to better understand and measure the impacts of tourism, in Malta and elsewhere, further work is needed to develop a practical approach to monitor and benchmark progress, while taking into consideration the unique characteristics of countries and destinations. Tourism sustainability indicators can also help to increase awareness of the importance of sustainable practices among tourism stakeholders in Malta.

This report presents a set of indicators as a tool to inform and enhance evidence-based policy development and sustainable destination management in Malta. It builds on existing frameworks and good practices at international, national, and regional level. It takes a policy-led approach to facilitate long-term implementation in a resource-constrained environment and help turn data into action for sustainable development. This approach consists of four key steps: prioritisation, indicator selection, implementation, and action. This report focusses on the first two steps in this process.

The identification of policy priorities is informed by the Malta Tourism Strategy 2021-2030, *Recover. Rethink. Revitalise.*, which sets out a vision to transform the tourism sector towards long-term sustainable and responsible development. The specific context in Malta shapes the challenges faced for sustainable tourism development. The island's small size and high population density create challenges around waste management, water scarcity, and the degradation of natural habitats. Coastal areas, in particular, are vulnerable to overdevelopment, which can negatively affect marine ecosystems and biodiversity. Additionally, Malta seeks to balance economic growth from tourism with the preservation of its cultural and historical assets. High visitor numbers can lead to overcrowding at heritage sites, causing physical wear, diminishing the quality of the visitor experience, and impacting on the lives of local residents. Attracting and retaining a skilled tourism workforce is another key policy issue. Malta's reliance on air travel for tourism contributes to carbon emissions, posing a challenge to reducing its carbon footprint.

An assessment of data availability to select both relevant and measurable indicators to address these policy priorities resulted in the identification of a set of 37 core indicators structured around the following five policy priorities:

- **Optimise tourism's contribution to Malta's economy:** Tourism contribution to GDP, Imported goods and services, Occupancy rate, Tourism density
- **Target quality/valued visitors:** Length of Stay, Expenditure, Seasonality, Tourist satisfaction, Accessibility
- **Protect and enhance natural and cultural heritage:** Carbon footprint, Electricity consumption, Waste production, Water consumption, Green areas, Maintenance of cultural heritage sites, Local food
- **Foster community well-being:** Resident perception, Tourism intensity, Transport modes

- **Promote a thriving workforce:** Tourism employment contribution, Training and skills, Retention, Salaries, Gender wage gap

The process of identifying and implementing a set of indicators, if undertaken collaboratively, can foster co-operation between data specialists and policy makers to ensure that the 'top-down' identification of policy priorities is achievable with the 'bottom-up' availability of data. Ongoing and regular work to review and improve this set of indicators in Malta will help to ensure that they remain 'fit for purpose'. The report concludes by highlighting avenues for future development to refine indicator methodologies and close data gaps on central policy priorities. While data are available for 29 of 37 indicators, further work is required to measure waste production, water consumption, local food sourcing, accessibility, skills development and employee retention.

The toolkit developed as part of the project builds the bridge from prioritisation and indicator selection to implementation and action by supporting Malta to operationalise the indicators. Five levers are designed to incorporate tourism sustainability indicators into decision making and action for positive change: I.) Market selection and growth strategies, II.) Budget allocation, III.) Recruitment strategy and staff training, IV.) Stakeholder engagement and capacity building, and V.) Strategic partnerships across government agencies.

A policy-led approach to measuring the sustainability of tourism

Introduction

Tourism is an essential contributor to Malta's economy. In 2023, total international tourist expenditure reached the record figure of EUR 2.7 billion. Tourism is estimated to have contributed 10.2% to GDP in 2023. In 2022, the tourism sector directly supported 48 000 jobs, or 16.9% of total employment. This represents an 18.2% increase on 2019, when the sector directly accounted for 40 500 jobs. The disruption caused by the COVID-19 pandemic during the years 2020-22 was followed by a strong recovery in 2023, culminating in a record 3.0 million international tourist arrivals. Domestic tourism also increased significantly over the same period, rising from 240 000 domestic tourists in 2019 to 370 000 in 2022 – an increase of 54%.

Despite global discussions during the pandemic about the opportunity for tourism to 'build back better', visitor numbers and expenditure remain key measures of tourism success for many destinations. As strong demand continues to drive the recovery of the sector, destinations in Malta and elsewhere are again experiencing negative environmental and social impacts often associated with rapid or unplanned tourism growth. While substantial progress has been made to better understand the positive and negative impacts of tourism in recent years, measuring and monitoring the impacts on the environment and local communities are still lagging. More work is needed to develop a practical approach to monitoring the impacts of tourism that captures destination-specific issues, allows for some cross-destination comparison, and enhances evidence-based policymaking.

The Malta Tourism Strategy 2021-2030, called Recover. Rethink. Revitalise., sets out a vision to transform the tourism sector towards long-term sustainable and responsible development, contributing to achieving the UN Sustainable Development Goals (SDGs) (Government of Malta, 2021[1]). It focusses on developing new services and products and continued marketing efforts to position Malta as a destination of choice across diverse geographic and motivational travel segments. The Strategy sets out eleven strategic goals, including to ensure that all tourism enterprises and communities embrace the Climate Friendly Travel framework, upskill the tourism workforce and help ensure that the pressures generated by increased visitor numbers do not negatively impact local communities. To monitor progress against these strategic targets, the Strategy includes an initial list of potential indicators. The six broad priorities outlined in the Strategy are:

- An upskilled tourism workforce
- Modernised infrastructure
- Updated tourism legislation
- Stronger potential for digitalisation
- Continued development of Malta's airline connectivity
- An innovative approach towards responding to new travel trends

The OECD has worked closely with Malta to build on this work and develop a core set of indicators to measure and monitor the sustainability of the tourism sector. While many statistics are already available to monitor tourism in Malta, building on data from the National Statistics Office (NSO) and the Malta Tourism Authority (MTA), more reliable and regular data on the sustainable transformation is needed to effectively monitor the implementation of the tourism strategy and enhance policy and decision making. This requires a system of relevant and comparable indicators to measure the sustainability of Malta's tourism sector over time. The Malta Tourism Observatory, hosted by MTA, is responsible for monitoring the Strategy and advancing efforts to shift to a more sustainable model of tourism. The Observatory will also be in charge of monitoring the set of tourism sustainability indicators presented in this report.

This report builds on the indicators identified in the Malta Tourism Strategy 2021-2030 and complements them with additional indicators, where relevant, to monitor the key policy priorities for sustainable tourism development in Malta. The outcome is an advanced and refined set of indicators under the responsibility of the MTA to be regularly updated and disseminated in a user-friendly manner. The project considers indicators that can be compiled with existing data as well as potential or aspirational indicators for future compilation. The OECD work builds on an analysis of existing indicator frameworks and approaches in Malta and beyond. A two-day technical workshop clarified key challenges and gaps related to the compilation of a core indicator set to measure and monitor the sustainability of the tourism sector in Malta. The workshop promoted peer learning and built capacity, involving international experts from academia, government and the private sector. It fostered a whole-of-government approach, involving government agencies beyond tourism.

Review of existing approaches and frameworks

Developing indicators to measure the sustainability of tourism has been a focus of work for the OECD and other international institutions, for over three decades (OECD, 2003[2]; UNWTO, 1997[3]; UNEP and MSCD, 1999[4]; Eurostat, 2006[5]). However, establishing and maintaining a reliable evidence base that supports decision making has proven challenging (OECD, 2021[6]). While the quality and availability of tourism statistics have improved considerably in recent years, measurement of tourism impacts has traditionally focussed on economic aspects, guided by the International Recommendations for Tourism Statistics (United Nations, 2008[7]) and the Tourism Satellite Account methodological framework (UN Statistics Division, Eurostat, OECD, 2008[8]). Tourism-specific statistical definitions and regularly produced statistics capturing environmental and social impacts of tourism have lagged behind. Examples of some the most prominent frameworks, indicator sets and approaches at international, national and sub-national level are outlined below.

The endorsement of the Statistical Framework – Measuring the Sustainability of Tourism (SF-MST) by the United Nations Statistics Commission is an important step forward in forging international consensus on the production of reliable and comparable data on the economic, environmental, and social impacts of tourism (UN Tourism, 2024[9]). This UN Tourism-led statistical framework, developed under the leadership of Austria and Spain, provides fundamental concepts, definitions, and data organisation structures for tourism statistics across economic, social, and environmental impacts. Further work is needed to provide methodological guidance to support the concrete implementation of the framework and derive a meaningful set of internationally comparable indicators for sustainable tourism development.

Improving statistics and indicators for tourism is a key pillar of the EU Tourism Transition Pathway (European Commission, 2022[10]) and the multi-annual EU Work Plan of the European Agenda for Tourism 2030 (Council of the European Union, 2022[11]). A range of initiatives are underway to advance this agenda, including work by Eurostat to develop and implement a set of indicators to measure the sustainability of tourism based on available data and the EU Tourism Dashboard, developed and maintained by the European Commission's Joint Research Centre (JRC) and Directorate-General for Internal Market,

Industry, Entrepreneurship and SMEs (DG GROW). The EU Tourism Dashboard is a tool that brings together existing data to understand the performance of tourism at country and sub-national levels. The Dashboard's three policy pillars (green, digital, socio-economic) use a range of methodological principles and data sources, including from national statistical agencies, Eurostat, and UN Tourism. The Together for EU Tourism (T4T) expert group has a dedicated sub-group on measuring sustainability, with results to be shared with all stakeholders via a Stakeholder Support Platform (forthcoming).

Other European-level initiatives include the European Tourism Indicators System [ETIS] (European Union, 2016[12]) and MITOMED+ (based on ETIS with a focus on coastal and maritime tourism). Previous work by Eurostat (2006[5]), led by Statistics Sweden, proposed a core set of 20 indicators to measure the sustainable development of tourism at the national, regional and local level. Following the final edition in 2019, the biennial World Economic Forum Travel and Tourism Competitiveness Index has evolved into a Development Index, with revised indicators focussing on the sustainable and resilient development of the sector (see Box 1). Building on the work to develop and implement these existing frameworks provides an opportunity to accelerate the process of sustainable tourism indicator development.

Box 1. Selected international tourism sustainability indicator frameworks

Selected examples of existing international work on indicator frameworks are outlined below.

- **European Tourism Indicators System** (ETIS) – The framework consists of 43 core indicators supplemented by 33 additional indicators. It is a voluntary tool designed to measure the sustainability of European tourism destinations (European Union, 2016[12]).

- **EU Tourism Dashboard** – The Dashboard presents 19 indicators and 14 descriptors designed to promote and monitor the green and digital transitions and the socio-economic resilience of the tourism sector. The starting point for preparing the indicators has been the identification of data which is available across all EU member states (European Commission, 2022[13]).

- **UN Tourism proposal for a set of indicators to measure and monitor the sustainability of tourism** – Linked with the work to prepare the SF-MST, UN Tourism proposed a set of 30 initial indicators at the 4th Expert Group on MST in September 2023 (UN Tourism, 2023[14]).

- **World Economic Forum Travel and Tourism Development Index** (WEF, 2024[15]) – The Index focusses on monitoring the resilience and sustainable development of tourism. The pillar 'Travel and Tourism Sustainability' tracks 24 indicators across three themes (environmental sustainability, socio-economic impact and sustainability of travel and tourism demand).

- **World Travel and Tourism Council (WTTC) 'Travel and Tourism's Global Footprint' dashboard** – estimates the economic, social and environmental footprint of the tourism sector across 11 core measures and seven of the SDGs related to tourism. The tool allows for benchmarking across countries and international regions, and comparison over time while also providing historical data where available, to allow countries to monitor their own progress (WTTC, 2024[16]).

Work undertaken to date at international, national and sub-national level provides a solid platform to accelerate efforts for new data and indicators. As the discussion around sustainable tourism has evolved, so have the measurement frameworks. While most frameworks and indicators are structured around the pillars of economic, environmental and social sustainability, there is considerable diversity in the scope and range of indicators covered, which creates challenges for international comparability as well as for decision makers in destinations (with often limited capacity and resources) to understand which priority issues and indicators to focus on.

In general, the following measures and associated indicators are included in most frameworks:

- Economic measures: for example, seasonality, visitor market share, share of GDP, share of employment, average expenditure, and average length of stay.
- Environmental measures: for example, water and energy consumption, air and greenhouse gas emissions, waste (water and solid), environmental certification and mode of transport.
- Social measures: for example, gender equality, accessibility of tourism sites, satisfaction of the local community, tourist satisfaction, valorisation of culture and heritage.

At country level, sustainability is a key pillar of many new and updated tourism strategies and action plans, including in Denmark, Finland, and Portugal. In collaboration with VisitDenmark, the Centre for Regional and Tourism Research has developed a system of indicators to measure the sustainability of tourism at destination and municipal level (see Box 2). Three requirements guided the choice of indicators – they should i) be easy to understand and interpret, ii) rely on bottom-up data and iii) be internationally comparable. However, data availability differs between social, environmental and economic dimensions. The environmental dimension is least advanced, requiring further work going forward.

Box 2. Measuring and monitoring the sustainability of tourism in Denmark

In collaboration with VisitDenmark, the Centre for Regional and Tourism Research (CRT) developed a system of indicators for measuring the sustainability of tourism in Denmark at destination and municipal level. The indicators were developed building on a literature review and a participatory process involving destinations, businesses and tourism associations. The resulting system includes 22 indicators across three dimensions of sustainability, with most indicators linked to Denmark's national tourism strategy:

Economic	Social	Environmental
Bed nights	Tourists' satisfaction	Accommodation with certification
Arrivals	Local satisfaction	Electricity consumption in tourism industry
Seasonality in bed nights	Number of beds per 100 residents	Heating consumption in tourism industry
Average spend of tourists per day	Tourism intensity	Water consumption in tourism industry
Average length of stay	Tourism density	Carbon footprint
Tourism-related employment	Inclusion of marginalised labour	
Local ownership of tourism-related firms	Seasonality in employment	
Labour productivity	Educational level of employment	
Tourism-related tax revenue		

Data collection is financed by VisitDenmark. Data is processed by CRT to calculate the indicators, building on strong co-operation with the national statistical institute which provides data input. The indicator results allow comparing destinations' performance, with data accessible via a Dashboard.

As part of Visit Finland's Sustainable Travel Finland initiative, indicators providing data at business, regional and national level are built from the national sustainable tourism programme and certification scheme to promote visibility of the sustainability of tourism. It is intended that these indicators will help to evaluate and inform the development and implementation of the next tourism strategy (see Box 3).

Sustainability indicators are increasingly being embedded in national tourism strategies or subsequently developed as part of the monitoring frameworks. Turismo de Portugal developed a Sustainable Tourism Indicators System (Turismo de Portugal, 2023[17]) in line with Portugal's national Tourism Strategy 2027, with economic, social and environmental indicators directly linked to targets in the national tourism strategy to monitor progress in achieving the strategic goals (see Box 4).

Box 3. Creating evidence through the sustainable tourism programme in Finland

Visit Finland has developed the Sustainable Travel Finland programme including sustainable tourism indicators compiled at company, regional and national level, structured across four dimensions:

- Destination management: for example, the number of tourism companies participating in the programme, share of residents satisfied with tourism's impact on their place of residence.
- Economic value: for example, the number of education and training courses related to sustainable tourism, share of seasonal workers.
- Social and cultural impact: for example, the number of companies with multilingual communication, share of enterprises providing services for people with reduced mobility.
- Environmental impact: for example, the share of companies measuring carbon footprint, share of companies actively participating in climate change mitigation measures.

In the future, these indicators will help to evaluate and set targets for the national tourism strategy and its actions. Data is collected from businesses, regions, visitor and resident surveys and Statistics Finland. To monitor and communicate progress against the actions and indicators of the programme, Visit Finland publishes annual reports. Based on the results, Visit Finland evaluates which indicator targets need to be more ambitious to encourage the sector to make more sustainable choices.

Box 4. Measuring and monitoring the sustainability of tourism in Portugal

The Tourism Strategy 2027 framed sustainability at the core of tourism policies in Portugal to reflect tourism's role as a driver for economic, social and environmental development throughout the territory. The Strategy sets eight strategic goals or targets across the three pillars of sustainability. To monitor progress, Turismo de Portugal developed a set of tourism sustainability indicators building upon existing frameworks, including the Indicators of Sustainable Development for Tourism Destinations (UNWTO, 2004[18]), and ETIS, the European Tourism Indicators System for sustainable destination management (European Union, 2016[12]), in an effort to maximise international comparability. The central goal was to develop a practical approach to measurement geared to inform decision making. The resulting set covers 43 indicators, articulated around three dimensions of sustainability and 11 thematic areas (see table below). Data is currently available for 37 of the 43 indicators.

Economic	Social	Environmental
Seasonality	Accessibility	Environmental management
Economic benefits	Pressure	Energy management
Employment	Tourist satisfaction	Water management
	Local satisfaction	Solid waste management

Indicators to measure the sustainability of tourism are also being developed at sub-national level, including to support a growing focus on destination management. Visit Flanders has developed a set of indicators to help monitor progress towards their vision of value creation for all stakeholders. The indicators cover four core pillars of Residents, Visitors, Entrepreneurs and Place. For their implementation, Visit Flanders has adopted a dual approach, combining a toolkit to enable local stakeholders to collect data and the Destination Barometer, a dashboard to visualise results (see Box 5).

> ### Box 5. Toolkit and Destination Barometer to implement indicators in Flanders, Belgium
>
> The Travel to Tomorrow framework guides Visit Flander's efforts to develop Flanders as a destination with flourishing places and value creation for all stakeholders. Guided by the four pillars Residents, Visitors, Entrepreneurs and Place, Visit Flanders has developed a set of 90 potential indicators across 20 dimensions. This allows destinations to choose the indicators relevant to them from the toolkit, with selected indicators presented in the Destination Barometer.
>
> Visit Flanders has developed a toolkit to facilitate bottom-up data collection, building capacity and empowering local stakeholders to compile and analyse indicators in collaboration with Visit Flanders. The toolkit provides tools to collect data, such as surveys and interview protocols.
>
> The Destination Barometer is a dashboard to collect and visualise available information for 14 themes across the four dimensions, using maps and graphs. Exemplary indicators are resident perception of tourism impacts, resident satisfaction with cultural and recreational amenities, visitor satisfaction, employment, job vacancies, and CO_2 emissions. Data are generally available at regional level.
>
> However, some indicators are also measured at a more granular level. Radar charts are used to compare performance between different types of accommodation and attractions. Visit Flanders continuously works to improve data availability, methodologies and visualisation. Challenges remain to identify relevant threshold values and improve timeliness of data.

Despite the shared aim of improving the evidence base for sustainable tourism policy making, many indicator frameworks include long lists of indicators and metrics that are rarely compiled or used due to limited resources and data availability. Conversely, an excessive focus on data availability may lead to measurement as an end in itself rather than a means to inform policy. Moreover, existing frameworks and initiatives often define and conceptualise indicators differently and take different methodological approaches. This heterogeneity hinders comparability across countries, regions and destinations. Decision makers face a wide, and often conflicting array of concepts, methodologies and data that is difficult to navigate. This report contributes to developing a practical approach to monitoring impacts that on the one hand allows for comparability while on the other recognises the unique characteristics of destinations – with indicators as a tool to enhance evidence-based policy making towards sustainable development.

Developing and implementing a set of tourism sustainability indicators

Tourism stakeholders agree that there is a need for robust data on tourism sustainability. However, the existence of data and indicator frameworks does not necessarily translate into concrete action towards sustainable development (Crabolu, Font and Miller, 2023[19]). This data-action gap needs to be closed to turn information into positive change on the ground.

This report adopts a policy-led approach to indicator development to help turn data into action for sustainable development. The approach consists of four key steps: Prioritisation, indicator selection, implementation and action (see Figure 1). The first step is the prioritisation of data needs based on the identification of key policy priorities agreed upon with stakeholders. This includes linking the destination context and tourism strategies to indicators as well as thinking about what needs to change and how. The selection of indicators to monitor the key policy priorities builds on an assessment of data availability and quality, ensuring that indicators are not only relevant, but also measurable. Focussing on a core set of indicators can also facilitate long-term implementation in a resource-constrained environment. Additional, supplementary indicators can then be used to capture contextual specificities. After resolving remaining conceptual and practical issues, as part of the implementation phase it is necessary to pilot test and

compile the indicator set, establishing baseline data. Analysis and interpretation of the indicator results bridges the gap from implementation to action, enabling policy makers to take evidence-based decisions to effect change, including the setting of targets and thresholds to guide future efforts.

Regular reviews of the system of indicators helps to ensure that it remains 'fit for purpose'. Circumstances as well as unique destination characteristics and policy priorities may change over time, requiring adaptation and potentially expansion of the indicator set. While the 'perfect' measure may not be available at the outset, the iterative process aims to continuously drive the indicator system towards more relevant, timely and robust information. As part of a holistic toolkit for sustainable tourism development, it is beneficial to complement indicators with other sources of relevant information where available.

Figure 1. Approach for establishing a policy-led indicator system
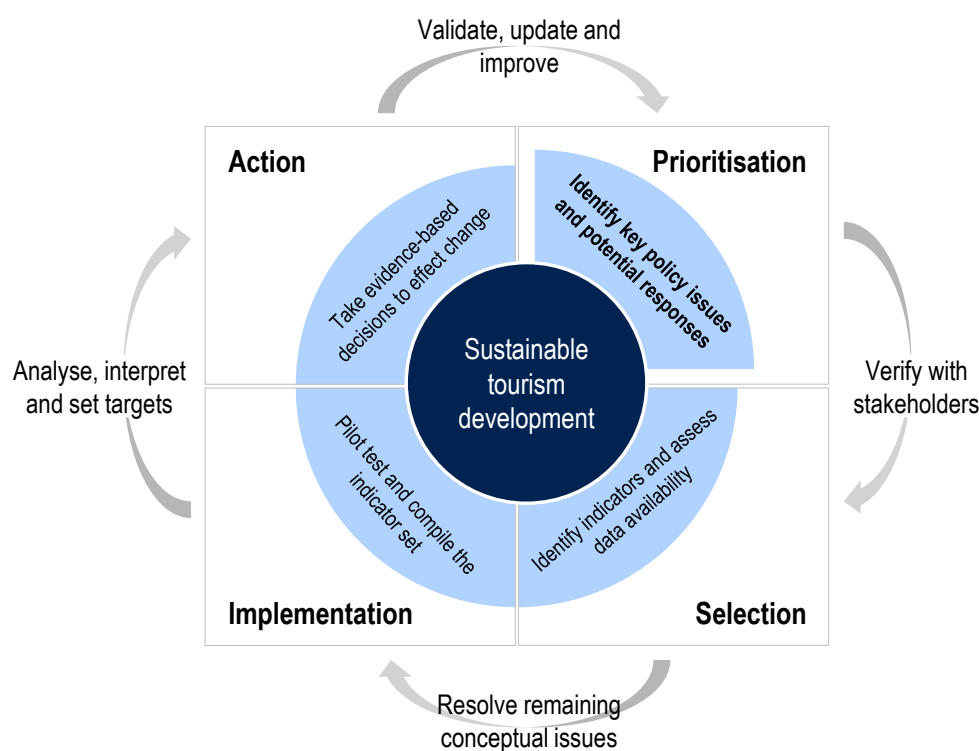
Source: OECD elaboration.

The process of developing and implementing a set of indicators relies on collaboration between data specialists and policy makers. This ensures that the 'top-down' identification of policy priorities is achievable and aligned with the 'bottom-up' availability of data. Such an approach can provide additional benefits. Tourism sustainability indicators can serve as a means to increase awareness of the importance of sustainability among tourism destination stakeholders. The process builds capacity for decision makers to better understand core policy priorities and facilitates the transition towards more sustainable models of tourism.

This report presents a policy-led approach to the development of a system of indicators as a tool to inform and enhance evidence-based policy development and sustainable destination management in Malta. It builds on existing frameworks and good practices at international, national and regional levels. The indicator logic follows the Pressure-State-Response (PSR) model (see Figure 2) to reflect causal mechanisms underlying key policy priorities and to help close the data-action gap by monitoring response measures.

As illustrated in Figure 2, 'pressure' refers to human activities or natural events that exert stress on the environment and social systems, while 'state' describes the condition of the environment and social systems. The state can change from a recognised baseline in response to the pressure. Tourism activities for instance impact local community perceptions, tourist satisfaction, and water quality. Social and environmental ecosystems provide the resources for tourism activities to flourish, including cultural and natural heritage. Finally, 'responses' are actions taken by governments, organisations, and individuals to mitigate, adapt to, or prevent negative pressure and changes in state stemming from tourism. Responses include, for example, promoting the use of sustainable mobility options to reduce emissions from transport. Indicators provide information on the effectiveness of implemented responses.

Figure 2. Indicator logic: Pressure, State, Response
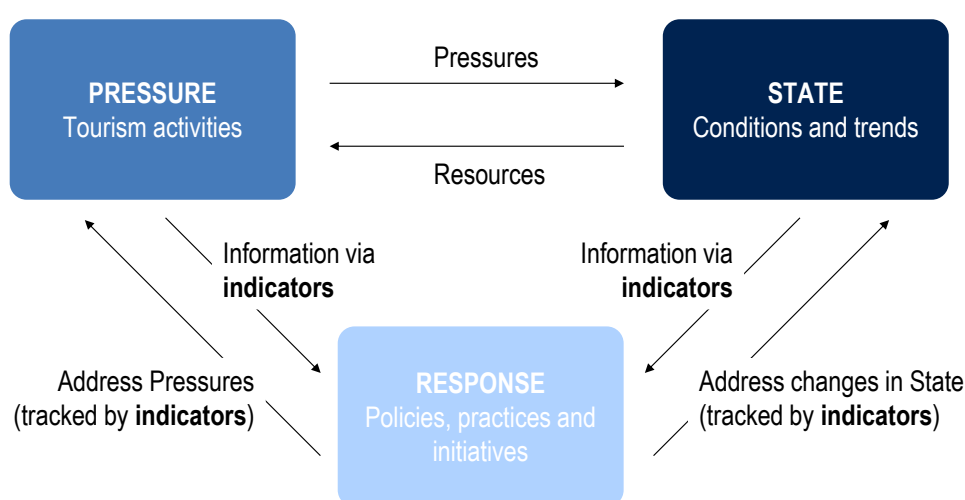
Source: Adapted from Li (2004[20]), Environmental management indicators for ecotourism in China's nature reserves: A case study in Tianmushan Nature Reserve. *Tourism Management*, 25(5), pp. 559-564.

The PSR model was first proposed in Canada in the early 1990s as an evolution of the cause-effect models (Bowen and Riley, 2003[21]) and was further developed by the OECD to make sense of how human activity interacts with the environment (OECD, 1993[22]). The PSR model was expanded by the European Environment Agency to include additional aspects of Drivers and Impacts, resulting in the DPSIR framework (Driver-Pressure-State-Impact-Response). Due to its simplicity, the original PSR is used in this work. Whilst initially focussed on human-environment interactions, the model can be extended to include social and cultural changes in response to the pressure.

The model structures indicators into a format that facilitates the use of data and information for policy development (Tscherning et al., 2012[23]), however, it is not without weaknesses. For example, it can be argued that causality is more complex than visualised in what is a simplified conceptual model. Multiple pressures might for instance interact to affect changes in state and relationships are not linear. Further, the classification of variables and where they fit in the model can be ambiguous. Depending on the particular context of application, variables could be interpreted as pressures or changes in state; assumptions and case-specific perspectives therefore need to be clarified. However, as long as there is an agreement of indicator interpretation amongst key users of the model, these issues should not impede effective implementation.

Indicators to measure and monitor the sustainability of tourism in Malta

Policy context

Malta is a Mediterranean island state known for its historical significance, diverse cultural heritage, and natural landscapes. It features important historical sites, including Valletta, a UNESCO World Heritage site, and the fortified city of Mdina. The island is also recognised for its clear coastal waters and opportunities for maritime activities such as diving. Malta's architecture, traditions, and cuisine reflect influences from various historical periods, including Phoenician, Roman, and British. Its moderate climate, cultural events, and varied accommodations make it a year-round destination for visitors.

Malta's Tourism Strategy for the years 2021-30 called Recover. Rethink. Revitalise. aims to re-establish the tourism sector on a sounder footing and in line with international ideals and commitments for sustainable development. The specific context in Malta shapes the challenges faced for sustainable tourism development. One of the primary concerns is the environmental impact of tourism, particularly the strain on natural resources such as water and land. The island's small size and high population density create challenges around waste management, water scarcity, and the degradation of natural habitats. Coastal areas, in particular, are vulnerable to overdevelopment, which can negatively affect marine ecosystems and biodiversity. Additionally, Malta seeks to balance economic growth from tourism with the preservation of its cultural and historical assets. High visitor numbers can lead to overcrowding at heritage sites, causing physical wear, diminishing the quality of the visitor experience, and impacting on the lives of local residents. Attracting and retaining a skilled tourism workforce is another key policy issue. Furthermore, Malta's reliance on air travel for tourism contributes to carbon emissions, posing a challenge to reducing the carbon footprint.

Building on an analysis of the Malta Tourism Strategy 2021-2030, Malta's response to the OECD Tourism Committee evidence base survey, stakeholder responses to a fact-finding questionnaire and desktop research, the project has identified five key policy priorities:

- Optimise tourism's contribution to Malta's economy
- Target quality/valued visitors
- Protect and enhance natural and cultural heritage
- Foster community well-being
- Promote a thriving workforce

Multiple stakeholders collect and analyse tourism data in Malta (see Figure 3 for an overview of the data governance structure). To better monitor progress on the strategic objectives and to address the key policy priorities for sustainable tourism development, Malta has set up the Malta Tourism Observatory, hosted by the Malta Tourism Authority. The Observatory aims to become part of the UN Tourism International Network of Sustainable Tourism Observatories (INSTO). Malta is also in the process of establishing a Tourism Satellite Account (TSA) to better capture the economic impacts of tourism. Close collaboration

amongst stakeholders can build synergies to strengthen the evidence base for tourism. The tailored set of tourism sustainability indicators proposed in this report builds on data sources from different stakeholders to measure and monitor the sustainability of tourism in Malta.

Figure 3. Tourism data governance structure in Malta
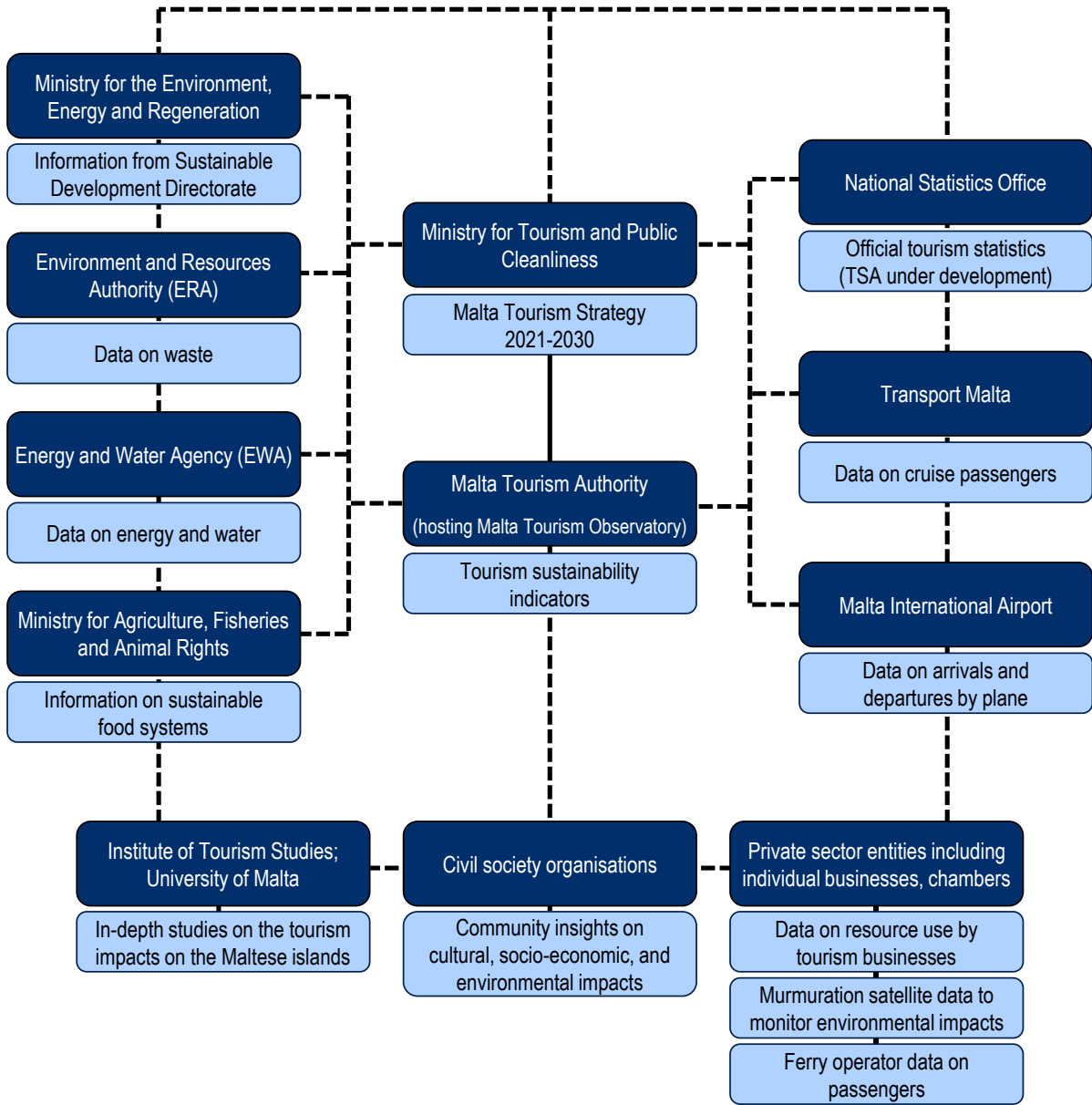
Overview of core set of indicators

The proposed set of 37 core indicators is structured around the above five key policy priorities (see Table 1 and Table 2). The report takes a phased approach, combining indicators that can presently be compiled using existing data with those that require additional calculation efforts, and, finally those needing extensive future work to refine their definitions and identify appropriate data sources (see colour coding for compilation in the tables below). As the Malta Tourism Observatory aims to join the UN Tourism INSTO network, the indicators are mapped against the issue areas. The following sections outline how indicators are to be compiled and include good practice examples from other countries and regions.

Table 1. Indicators to measure and monitor the underlying tourism pressure

Indicators to measure and monitor the underlying pressure (4)	Compilation readiness
P.1 Tourism arrivals by month – air and sea	●
P.2 Cruise passenger arrivals by month	●
P.3 Total number of nights spent by inbound tourists	●
P.4 Number of beds in accommodation establishments	●

Note: The colour coding to indicate the compilation readiness follows the following scheme:
- ● Indicator can be compiled using existing data
- ● Indicator needs additional efforts for calculation, but data is principally available
- ● Indicator definition needs refinement and no data sources exist
- ■ Policy response that will not be measured by quantitative indicator

Table 2. Indicators to measure and monitor the states and responses

Policy issue (5)	Indicator measuring the state related to the policy issue (19)	Indicator measuring response / action to address the policy issue (14)	SDGs[1]	INSTO issues
I. Optimise tourism's contribution to Malta's economy	I.1 Tourism contribution to GDP ●	*Build on the first TSA tables to measure the indirect impact of tourism and multiplier effects to help place tourism as one of the top agenda items for government.*	1, 3, 8, 9, 10, 11	Destination Economic Benefits, Tourism Seasonality, Accessibility
	I.2 Share of imported goods and services of tourism expenditure ●	*Promote initiatives such as farm to fork to boost consumption of local produce.*		
	I.3 Occupancy rate ●	*Focus growth on the shoulder months with relatively lower occupancy rates.*		
	I.4 Tourism density ●	*Encourage tourists to visit less popular areas, to decrease pressure from high-density areas such as Valletta.*		
II. Target quality / valued visitors	II.1 Length of Stay ●	*Prioritise motivational segments with a relatively higher average length of stay such as Sports and Educational Tourism. Encourage slow tourism activities during stay.*		
	II.2 Expenditure per visitor day ●	*Promote segments other than sun and sea such as culture and MICE (meetings, incentives, conferences, and exhibitions) tourism.*		
	II.3 Share of overnights from April to October ●	II.3.1 Share of tourists who come for purpose other than sun & beach ●		
	II.4 Tourist satisfaction ●	*Use detailed results of MTA's Traveller survey to determine areas for future improvement.*		
	II.5 Tourist's rating on accessibility ●	*Encourage inclusive products and services.*		
III. Protect and enhance natural and cultural heritage	III.1 Carbon footprint (Air travel emissions) ●	III.1.1 Airline load factors ●	9, 11, 12, 13, 14, 15	Climate Action, Energy Management, Solid Waste,
		III.1.2 Dependence on distant origins ●		
	III.2 Share of hotel electricity consumption ●	III.2.3 Share of renewable electricity ●		

		III.3 Estimated municipal solid waste production by tourists 🟡	*Awareness building / education of residents, tourists, and tourism businesses to promote responsible practices (e.g. to promote waste separation, optimise water consumption).*		Water Management, Wastewater (Sewage) Management
		III.4 Water quality (chlorophyll, turbidity, salinity, temperature) 🟢			
		III.5 Water consumption 🟡			
		III.6 Share of urban and nature green extent 🟢			
		III.7 Tourist rating of cultural heritage sites 🟢	III.7.1 Tourist expenditure on culture 🟢		
		III.8 Share of local food in restaurants 🔴	*Initiatives to encourage the use of local produce.*		
IV. Foster community well-being	IV.1 Local resident perception of tourism 🟢		IV.1.1 Top 3 positive aspects of tourism for residents 🟢	3, 11	Local Satisfaction, Climate Action
			IV.1.2 Top 3 negative aspects of tourism for residents 🟢		
			IV.1.3 Share of tourists renting a car 🟢		
			IV.1.4 Share of tourists using public transport 🟢		
			IV.1.5 Tourism intensity 🟢		
			Engagement mechanisms for community involvement in tourism decision making.		
V. Promote a thriving workforce	V.1 Tourism contribution to employment 🟢		V.1.1 Workforce skills development in tourism and hospitality 🔴	1, 4, 8, 9, 5	Employment
			V.1.2 Retention rate of employees 🔴		
			V.1.3 Gender wage gap (NACE I Accommodation and food service activities) 🟢		
			V.1.4 Average yearly basic salary of employees in tourism relative to overall national average 🟢		

Compilation guidance

Underlying pressure

Tourism activity impacts local communities and the environment. Malta received almost 3 million inbound tourists during 2023, while total nights spent surpassed 20.2 million – considerable numbers given a usual resident population of just over 500 000 as of 2021. It is therefore important to monitor tourist arrivals utilising the main modes of transport air and sea (indicator P.1), as well as cruise passenger arrivals (indicator P.2), all of which contribute to tourism pressure. In addition to monitoring the total number of nights spent by inbound tourists (P.3), the pressure indicators capture the number of beds in accommodation establishments (P.4). This is central given that continuous growth in supply, driven by the construction industry, requires demand to grow at a similar pace – with the potential to go beyond the carrying capacity of the Maltese islands. Indicator I.3 Occupancy rate complements indicator P.4 to evaluate whether the growth in accommodation capacity leads to over-supply. Indicators P.1, P.3 and P.4 draw on the NSO TOURSTAT survey which collects information on tourism demand, for both inbound and outbound trips with at least one overnight stay outside the usual environment. P.2 is compiled using administrative data from Transport Malta.

P.1 Tourism arrivals by month – air and sea

Compilation information:

Metrics and units	P.1	Tourism arrivals by month – air and sea	count
Target direction	Context dependent		
Frequency	Monthly		
Data source	[NSO TOURSTAT Survey on Tourism Demand](#)		
Compilation readiness	🟢		

P.2 Cruise passenger arrivals by month

Compilation information:

Metrics and units	P.2	Cruise passenger arrivals by month	count
Target direction	Context dependent		
Frequency	Monthly		
Data source	Administrative data from Transport Malta		
Compilation readiness	●		

P.3 Total number of nights spent by inbound tourists

Compilation information:

Metrics and units	P.3	Total number of nights spent by inbound tourists	count
Target direction	Context dependent		
Frequency	Monthly		
Data source	NSO TOURSTAT Survey on Tourism Demand		
Compilation readiness	●		

P.4 Number of beds in accommodation establishments

Compilation information:

Metrics and units	P.4	Number of beds in accommodation establishments	count
Target direction	Context dependent		
Frequency	Monthly		
Data source	NSO Survey on Collective Accommodation Establishments (ACCOMSTAT)		
Compilation readiness	●		

Optimise tourism's contribution to Malta's economy

I.1 Tourism contribution to GDP

Measuring the contribution of tourism and tourism-related industries to Malta's GDP captures the relative economic importance of tourism, showing the sector's role in generating income and employment. A very high contribution of tourism to GDP can point to a lack of economic diversity and/or indicate weaknesses in other areas of the economy, potentially negatively affecting economic diversification. Rapid or unplanned tourism growth can also result in negative impacts on the environment and local communities. As for all metrics, the data on tourism's contribution to GDP needs to be interpreted in conjunction with contextual factors to optimise tourism's contribution to Malta's economy. The indicator draws on data from the TSA currently under development by the National Statistics Office (NSO).

Compilation information:

Metrics and units	I.1	Tourism contribution to GDP	%
Target direction	Context dependent		
Frequency	Annual		
Data source	NSO TSA (under development)		
Compilation readiness	●		

I.2 Share of imported goods and services of tourism expenditure

As a small island country with limited natural resources Malta is dependent on the import of goods and services for providing tourism experiences. The Malta Tourism Strategy 2021-30 highlights the importance of promoting the use of local produce, such as food items, to boost the local economy and provide an authentic experience. Data is currently not available to measure the indicator. Once the TSA is developed, further calculation is needed to determine the share of imported goods and services, building on results from TSA Tables 1 and 2. The macro-economic analysis under I.2 is complemented by indicator III.8 Share of local food in restaurants.

Compilation information:

Metrics and units	I.2	Share of imported goods and services of tourism expenditure	%
Target direction	Negative		
Frequency	Annual		
Data source	TSA (under development); further calculation needed building on TSA results (Tables 1 and 2 [Inbound and domestic tourism expenditure], proportion of imported goods and services).		
Compilation readiness	●		

I.3 Occupancy rate

Measuring bed occupancy rates is often referenced in indicator frameworks, as it gives an indication of the extent to which tourism supply and demand match and whether existing assets are used efficiently (European Commission, 2022[13]; European Union, 2016[12]; Turismo de Portugal, 2017[24]; UNWTO, 2004[18]). Data on occupancy rates can inform forward planning, management and regulation. For example, it can be used to cap new accommodation developments, only allowing new establishments above a certain region-specific occupancy threshold (UNWTO, 2004[18]). However, occupancy rates may also point to issues of seasonality, providing a basis for gearing marketing efforts to promote off-peak and shoulder seasons. The indicator is thus measured on a monthly basis based on NSO accommodation survey data.

Compilation information:

Metrics and units	I.3	Occupancy rate	%
Target direction	Context dependent		
Frequency	Monthly		
Data source	NSO Survey on Collective Accommodation Establishments (ACCOMSTAT)		
Compilation readiness	●		

I.4 Tourism density

Tourism density gives an indication of spatial distribution of tourist flows. It contextualises overnights relative to the surface area of a given country or destination – particularly important for Malta. High values can point to potential overcrowding or negative effects on the environment. The indicator is measured both monthly and annually to account for seasonal variations based on NSO TOURSTAT data. Discussions with mobile service providers are in progress to measure tourism density at a more granular level.

Compilation information:

Metrics and units	I.4	Tourism density	overnights per km^2
Target direction	Context dependent		
Frequency	Monthly and annual		
Data source	NSO TOURSTAT Survey on Tourism Demand; NSO Environment Statistics for surface area (316 km^2 in 2000).		
Compilation readiness	●		

Target quality/valued visitors

II.1 Length of stay

Increasing the length of stay can help bring more value to a destination including through the purchase of local products. Tourists who are staying longer in one place are also seen as more responsible travellers, potentially reducing the environmental footprint per night. The length of stay indicator compilation will rely on NSO TOURSTAT survey data.

Compilation information:			
Metrics and units	II.1	Length of stay	nights
Target direction	Positive		
Frequency	Annual		
Data source	NSO TOURSTAT Survey on Tourism Demand		
Compilation readiness	●		

II.2 Expenditure per visitor day

Malta's Tourism Strategy 2021-2030 aims to redirect potential investment in bedstock into other key areas and increase tourism expenditure by developing new products and services. Given the limits of further growth in tourist numbers, Malta seeks to increase the spend per capita per night, to benefit the local economy. Data from NSO and MTA surveys will be used to calculate expenditure per visitor day. Malta is exploring the potential of utilising credit card data to better monitor tourism expenditure by category.

Compilation information:			
Metrics and units	II.2	Expenditure per visitor day	EUR per day
Target direction	Positive		
Frequency	Annual		
Data source	NSO TOURSTAT Survey on Tourism Demand, MTA Expenditure Survey		
Compilation readiness	●		

II.3 Share of overnights from April to October

Monitoring seasonality is important to highlight the particular stresses faced by Malta during specific periods. The chosen indicator measures the share of overnights from April to October which corresponds to the IATA (International Air Transport Association) summer months in the Northern hemisphere, directly linking it to airline seat capacity variability by season. Given that more than 98% of tourists to Malta arrive by air, correlating seasonal performance with seat capacity and utilisation will be useful.

Compilation information:			
Metrics and units	II.3	Share of overnights from April to October	%
Target direction	Negative		
Frequency	Annual		
Data source	NSO TOURSTAT Survey on Tourism Demand		
Compilation readiness	●		

II.3.1 Share of tourists who come for purpose other than sun and beach

Product diversification can help reduce seasonality. Increasing the share of tourists who come for a purpose other than sun and beach thus serves as a response measure to II.3. 'Other' motivations include history and culture, wellness and events. The indicator relies on data from the MTA Traveller Survey.

Compilation information:		
Metrics and units	II.3.1 Share of tourists who come for purpose other than sun & beach	%
Target direction	Positive	
Frequency	Annual	
Data source	MTA Traveller Survey	
Compilation readiness	●	

II.4 Tourist satisfaction

Visitor satisfaction is a key determinant of longer-term sustainability and competitiveness of destinations. It gives an indication of the quality of the tourism offer, with more satisfied tourists more likely to return in the future and/or recommend the destination to others. MTA conducts an annual survey to collect data on international tourist satisfaction. Detailed survey results beyond the average score can help provide insights on differences between motivational segments and identify areas for improvements.

Compilation information:		
Metrics and units	II.4 Tourist satisfaction (percentage of tourists whose overall experience exceeded expectations)	%
Target direction	Positive	
Frequency	Annual	
Data source	MTA Traveller Survey	
Compilation readiness	●	

II.5 Tourist's rating on accessibility

Accessibility of the tourism offer not only benefits people with disabilities, but also families with small children and the growing number of elderly tourists. The MTA Traveller Survey monitors tourists' rating on accessibility with a recently added question to enquire whether the travelling party includes persons with accessibility needs. While a valuable starting point, this approach faces limitations as no information is available on specific accessibility needs, the type of tourism services, or the reasons influencing the rating. Additional research is thus needed to determine how infrastructure and information improvements can help better cater to people with mobility, sensorial or cognitive accessibility needs.

Compilation information:		
Metrics and units	II.5 Tourist's rating on accessibility (for those with accessibility needs in their travelling party)	average rating
Target direction	Positive	
Frequency	Annual	
Data source	MTA Traveller Survey (survey currently being revised to include question on whether the travelling party includes person with accessibility needs)	
Compilation readiness	●	

Protect and enhance natural and cultural heritage

III.1 Carbon footprint (Air travel emissions)

Tourism both affects and is affected by climate change. Tourism-related transport, and air travel in particular, are a major contributor to global emissions. Recent estimates point to tourism emissions in the range of 8% to 11% of global emissions (WTTC & UNEP, 2021[25]). At the same time, climate change directly affects tourism, as extreme weather events reduce the attractiveness of tourism destinations and rising temperatures compromise some tourism segments. As an island destination, Malta heavily depends on arrivals by air. Malta has set out to become a Climate Friendly Travel Destination, contributing to efforts to achieve the goals set out in the Paris agreement. Carbon emissions from international passenger flights will be measured based on the OECD database on Air Transport CO_2 Emissions (Clarke et al., 2022[26]).

Compilation information:

Metrics and units	III.1	Carbon emissions from international passenger flights (territory principle)	t CO_2e
Target direction	Negative		
Frequency	Annual		
Data source	OECD Air Transport CO2 Emissions		
Compilation readiness	●		

III.1.1 Airline load factor

As a response measure to III.1, this indicator measures the airline load factor based on data provided by Malta International Airport. While not reducing absolute emissions, efficient aircraft utilisation reduces carbon intensity of individual international arrivals.

Compilation information:

Metrics and units	III.1.1	Airline load factor	%
Target direction	Positive		
Frequency	Monthly		
Data source	Malta International Airport		
Compilation readiness	●		

III.1.2 Dependence on distant origins

As a second response measure to III.1, this indicator measures the dependence on distant origins as monitored in the EU Tourism Dashboard. It is defined as the share of overnights by international tourists arriving to the destination from geographically distant locations (2000 kilometres or more). While visitors have limited transport options to choose from when travelling to Malta, as a destination, Malta does have agency to influence and target specific source markets. This indicator is policy relevant as long-distance flights in particular contribute to carbon emissions.

Compilation information:

Metrics and units	III.1.2	Dependence on distant origins	%
Target direction	Negative		
Frequency	Annual		
Data source	EU Tourism Dashboard		
Compilation readiness	●		

III.2 Share of hotel electricity consumption

Malta largely relies on electricity imports and electricity supply is scarce, making it important to analyse how much tourism contributes to overall electricity consumption by measuring hotel kWh as a percentage of total kWh consumed in Malta. It is a partial indicator both in terms of activities and energy sources, however, it is included as a starting point as hotels are typically one of the bigger consumers of electricity. Going forward, the indicator should be further developed to cover further economic activities and energy sources.

Compilation information:		
Metrics and units	III.2 Share of hotel electricity consumption (as % of overall electricity consumption)	%
Target direction	Negative	
Frequency	Annual	
Data source	NSO data on electricity consumption (based on electricity metre data)	
Compilation readiness	● at NACE I (NSO is undertaking work to publish data at 4-digit NACE level at the end of 2024)	

III.2.3 Share of renewable electricity

Climate change mitigation is a key policy priority for tourism. In addition to transport to, from, and within destinations, energy use of fixed assets contributes to the tourism industry's greenhouse gas emissions. This includes energy use in tourism accommodation facilities for heating, lighting and air-conditioning. Reducing energy consumption and increasing the use of renewable energy (e.g., solar, wind, biomass, hydroelectric) provide avenues to help mitigate climate change. The indicator measures the share of renewable sources in Malta's electricity supply, relying on NSO data for compilation. As tourism-specific data are not available, it captures the overall share of renewable electricity in Malta's energy mix.

Compilation information:		
Metrics and units	III.2.3 Share of renewable electricity	%
Target direction	Positive	
Frequency	Annual	
Data source	NSO Electricity Supply	
Compilation readiness	●	

III.3 Estimated municipal solid waste production by tourists

Tourism as a sector contributes to waste production, exerting pressure on local waste management infrastructure and services. As data on tourists' waste production is unavailable, the indicator relies on estimation based on overall municipal waste production (NSO data). The estimation assumes that locals and tourists generate similar amounts of municipal waste; however, waste production by tourists tends to be higher – similar to the trends in water consumption. An alternative measure would be to capture the estimated share of municipal waste production to signal the pressure that tourism adds to waste management infrastructure and services. Going forward, refined data is needed (e.g. through industry surveys or from provider data) to better measure mixed municipal waste (black bag) production of tourists.

Promoting circularity is a priority beyond tourism. Future work can see how broader sustainable development measurement, such as the Guidelines for Measuring Circular Economy, jointly developed by UNECE and OECD (United Nations, 2023[27]) can be integrated into tourism measurement. This applies not only to waste management, but also areas such as water consumption and use of local food.

Compilation information:

Metrics and units	III.3	Estimated municipal solid waste production by tourists	tonnes
Target direction	Negative		
Frequency	Annual		
Data source	NSO news release 218/2023 for municipal waste production (in tonnes); NSO TOURSTAT Survey for total overnights of tourists and NSO Census of Population and Housing 2021 for number of local residents (on Census Day, 21 November 2021, the final usual resident population in Malta stood at 519 562)		
Compilation readiness	● (data is available, but further work is needed for indicator calculation)		

III.4 Bathing water quality (algae blooms, turbidity, salinity, temperature)

As an island destination, maritime environmental protection is a priority for Malta, including to enhance visual attractiveness for visitors. A mix of human-made and natural factors (e.g. sewage, rainwater runoff, fish farming, oil spills, algal blooms, temperature rise, increased acidity) can negatively impact coastal water quality. Satellite data from private company Murmuration is used to monitor bathing water quality, focussing on four physical parameters: algae blooms, turbidity, salinity and temperature.

Compilation information:

Metrics and units	III.4	Water quality (chlorophyll, turbidity, salinity, temperature)
Target direction	Context dependent	
Frequency	(Near) Real-time data	
Data source	Murmuration dashboard based on satellite data from two data sources, both from the EC constellation for the Copernicus programme (EC-Sentinel – 3: daily revisit; EC-Sentinel – 2: 5 days; USGS-Landsat 8: 9 – 7 days).	
Compilation readiness	●	

III.5 Water consumption

Water is one of the scarcest resources on the Maltese Islands with around 65% of the country's water supply dependent on reverse osmosis technology. The technology has become quite efficient but still consumes a substantial amount of carbon-derived energy and disposes of highly saline water back into the sea. Tourists are considered to consume above average per capita water supply relative to local residents. To monitor water use in tourism, the indicator measures water consumption of accommodation and food service activities (NACE I) as a proxy for the sector. While only monitoring direct water consumption, and thus excluding the substantial volume of water used in up- and down-stream value chains, this is a starting point to track progress in reducing water stress.

Compilation information:

Metrics and units	III.5	Water consumption (NACE I)	m³
Target direction	Negative		
Frequency	Annual		
Data source	NSO data on water consumption (based on water metre data)		
Compilation readiness	● (data from water metres is available, NSO is working on data compilation at 4-digit NACE level)		

III.6 Share of urban and nature green extent

Malta's dry climate limits the availability of green spaces, impacting biodiversity and the well-being of residents and visitors. Malta possesses two sets of green open spaces: natural areas and human-made areas, including parks and gardens in urban areas. The two sets are different due to the fact that natural areas are wholly dependent on rainfall whereas public areas are watered regularly. They therefore display

different seasonal changes and different plant health readings. Satellite data from private company Murmuration is used to monitor the share of urban and nature green extent.

Compilation information:			
Metrics and units	III.6.a	Share of urban green extent	
	III.6.b	Share of nature green extent	
Target direction	Positive		
Frequency	(Near) Real-time data		
Data source	Murmuration Dashboard (using a combination of vegetation indices [NDVI, FAPAR, LAI and FCOVER as presented here] and then applies the vegetation health index)		
Compilation readiness	●		

III.7 Tourist rating of cultural heritage sites

The islands' rich history and cultural heritage are key to Malta's identity and tourism offer. The preservation and promotion of local culture and traditions contribute to local community well-being. To capture the preservation quality, the indicator relies on results from the Heritage Locality Survey, conducted every three years by MTA in Heritage localities (Valletta, Birgu, Mdina). While not a perfect measure, due to the subjective rating by tourists (rather than residents and/or subject-matter experts), the indicator provides a valuable starting point for protection and enhancement of cultural heritage.

Compilation information:		
Metrics and units	III.7 Average rating of Archaeological sites, Historical buildings, Museums, Cathedrals/churches	Average rating
Target direction	Positive	
Frequency	Every three years	
Data source	MTA Heritage Locality Survey	
Compilation readiness	●	

III.7.1 Tourist expenditure on culture

Tourist expenditure on culture can help finance investments in conservation of archaeological sites, historical buildings and museums. As such, the indicator is included as a response measure to III.7, calculated based on NSO and MTA survey data. Going forward, Malta may consider investigating data sources for capturing *actual* investment in cultural heritage to address limitations.

Compilation information:		
Metrics and units	III.7.1 Tourist expenditure on culture	EUR
Target direction	Positive	
Frequency	Annual	
Data source	NSO TOURSTAT Survey on Tourism Demand and MTA Expenditure survey	
Compilation readiness	●	

III.8 Share of local food in restaurants

The Malta Tourism Strategy 2021-30 highlights the importance of promoting the use of local food items, to boost the local economy and provide an authentic experience. While data availability is currently limited, an avenue for future development is to capture the share of local food served in restaurants or the share of restaurants that serve local food. As a starting point, the indicator could also capture the number of restaurants serving local food as a simple measure for progress. There may also be a benefit in developing a local (organic) food produce label and monitor engagement.

Compilation information:

Metrics and units	III.8	Share of local food in restaurants	%
Target direction	Positive		
Frequency	Annual		
Data source	tbc		
Compilation readiness	●		

Foster community well-being

IV.1 Local resident perception of tourism

Monitoring the local population's perception of tourism gives an indication of whether tourism development aligns with the needs and preferences of the community, fostering social harmony and minimising potential conflicts between residents and tourists, ideally contributing to local population well-being. To measure local community perceptions of tourism, MTA relies on their Local Resident Survey, first conducted in 2018. Monitoring the top three positive and negative aspects of tourism for residents helps design response measures to improve the population's perception of tourism, similar to the approach adopted in Austria (see Box 6). Beyond local resident perception of tourism, community involvement in decision making is key to empower local residents – an aspect also captured by the survey conducted and analysed by MTA, although not included in the core set of indicators. Broader well-being measures could help assess the positive and negative impacts tourism has on local populations.

Box 6. Austria's approach to measuring local community tourism acceptance

Austria's national tourism strategy Plan T – Masterplan for Tourism is the basis for national tourism policy development. To monitor progress, the plan initially comprised 12 economic, environmental and social indicators. The indicators are reviewed regularly to adapt to changing circumstances and new data availability, with 14 indicators currently used. Signals of 'overtourism', for instance, highlighted the need to measure residents' perceptions of tourism. In response, Austria added an indicator on tourism acceptance to an existing survey on Austrians' travel behaviours. Statistics Austria compiles the indicator at national level and partially at regional level. For reliable results at destination level, the sample size of 15 000 respondents per year would need to be increased.

The survey started with the first reference quarter 2024. The questionnaire follows the premise of 'Keep it short and simple'. The main question is 'How do you personally rate the impact of tourism on your place of residence?', with respondents asked to provide a rating on a 5-point scale from predominantly positive to predominantly negative.

To better understand the factors influencing the rating, the survey also includes an open-ended question: 'Why do you rate the impact of tourism on your place of residence as predominantly positive/negative?'. The aim of compiling community acceptance of tourism on an ongoing basis is to record the perceived effects of tourism to provide a holistic picture of the population's attitude towards tourism and to monitor the development over the long term.

Compilation information:

Metrics and units	IV.1	Local resident perception of tourism	average score on scale 1-5
	IV.1.1	Top 3 positive aspects of tourism for residents	text
	IV.1.2	Top 3 negative aspects of tourism for residents	text
Target direction	IV.1 Positive IV.1.1-2 Not applicable		
Frequency	Every 2 to 3 years		
Data source	MTA Local Resident Survey		
Compilation readiness	● (First study was conducted in 2018. The 2024 edition of the survey has just been completed including data analysis. Going forward, the survey will be repeated every 2 to 3 years.)		

IV.1.3 and IV.1.4 Tourist transport modes

Tourism-related transport (air travel in particular) is a major contributor to global emissions. While the island status of Malta leaves little room for changing the mode of arrival, fostering the use of public transport during tourists' stay in Malta cannot only help reduce emissions, but also reduce congestion caused by individual mobility and the risks of road accidents by rented vehicles. The two indicators are measured based on the MTA Traveller Survey.

Compilation information:

Metrics and units	IV.1.3	Share of tourists renting a car	%
	IV.1.4	Share of tourists using public transport	%
Target direction	IV.1.3 – Negative IV.1.4 – Positive		
Frequency	Annual		
Data source	MTA Traveller Survey		
Compilation readiness	●		

IV.1.5 Tourism intensity

Tourism intensity measures give an indication of the pressure that tourism exerts on the local population. UN Tourism's SF-MST (2024[9]) suggests measuring intensity as the number of visitors compared to the number of residents (visitor to local resident ratio). In the EU Tourism Dashboard (European Commission, 2022[13]), the indicator is based on dividing the total number of nights spent by the resident population. To better capture the pressures, OECD recommends using overnight figures.

Compilation information:

Metrics and units	IV.1.5	Tourism intensity	overnights / resident
Target direction	Context dependent		
Frequency	Annual		
Data source	NSO TOURSTAT Survey on Tourism Demand		
Compilation readiness	●		

Promote a thriving workforce

V.1 Tourism contribution to employment

One of the key benefits that tourism can bring to the local economy and communities is employment, given the sector is labour intensive and creates jobs across skill levels and age groups (OECD, 2015[28]). However, a disproportionately high share of tourism employment can signal a dependence on the sector,

exposing the wider economy to potential shocks (Eurostat, 2006[5]), as demonstrated by the COVID-19 pandemic. In 2022, the tourism sector directly supported 48 000 jobs, or 16.9% of total employment in Malta, underlining its importance for the local economy. Measuring tourism employment over time can help to identify trends and changes in the labour market. The indicator is compiled using data from the NSO Labour Force Survey. The indicator is also included in a new tourism employment dataset launched by UN Tourism in partnership with the International Labour Organization (ILO) (UN Tourism, 2024[29]).

Compilation information:

Metrics and units	V.1	Employed persons in the tourism industries as a proportion of total employed persons	%
Target direction	Context dependent		
Frequency	Annual		
Data source	NSO employment data based on the Labour Force Survey		
Compilation readiness	●		

V.1.1 Workforce skills development in tourism and hospitality

Malta, like many other countries, is facing a shortage of skilled labour for the tourism sector. As a result, improving training to foster skills is a key policy aim. Malta launched a Skills Pass for third-country nationals to ensure quality service and identify needs for skills development. While in the initial stages, data to monitor workforce skills development in tourism and hospitality will be available in the future.

Compilation information:

Metrics and units	V.1.1	Workforce skills development in tourism and hospitality	tbc
Target direction	Positive		
Frequency	Annual		
Data source	tbc		
Compilation readiness	● (programme for Skills Pass is in early stages, but data will be available in the future)		

V.1.2 Retention rate of employees

Given labour shortages in the tourism sector, it is essential to not only attract but also retain employees. Monitoring the retention rate can give an indication of employees' satisfaction with working conditions relative to other opportunities available. However, data is currently not available to measure this indicator. Going forward, MTA could engage with selected tourism businesses to pilot the measurement of employee retention.

Compilation information:

Metrics and units	V.1.2	Retention rate of employees	%
Target direction	Positive		
Frequency	Annual		
Data source	tbc		
Compilation readiness	●		

V.1.3 Gender wage gap

The share of women in the tourism workforce is typically higher than in the overall economy (OECD, 2015[28]). In 2019, 54% of people employed in tourism were women compared to 39% in the broader economy (UNWTO, 2019[30]). However, women are underrepresented in senior management positions (UNWTO, 2019[30]). To monitor progress towards gender equality, Malta will measure the gender gap for NACE I Accommodation and food service activities based on NSO Labour Force Survey data.

Compilation information:

Metrics and units	V.1.3	Gender wage gap (NACE I Accommodation and food service activities)	%
Target direction	Negative		
Frequency	Annual		
Data source	NSO Malta	Labour Force Survey		
Compilation readiness	●		

V.1.4 Average yearly basic salary of employees employed in tourism relative to overall national average basic salary

Improving job quality is central to employee satisfaction and retention. One of the key challenges for tourism in Malta is that wage levels are low compared to other sectors. In response, the indicator will compare the average yearly basic salary of employees employed in tourism to the overall national average basic salary based on NSO Labour Force Survey data.

Compilation information:

Metrics and units	V.1.4	Average yearly basic salary of employees employed in tourism relative to overall national average basic salary	ratio
Target direction	Positive		
Frequency	Annual		
Data source	NSO Malta	Labour Force Survey		
Compilation readiness	●		

A toolkit to support the operationalisation of sustainable tourism indicators in Malta

A policy-led approach to selecting and refining a set of indicators starts with the policy questions to identify and prioritise data needs (top-down), followed by an analysis of the data availability and data gaps that need to be closed to answer the key policy questions (bottom-up). This integrated approach limits the number of indicators to a relevant, core set, contributing to evidence-based policies. Following the four phases of the proposed policy-led approach – prioritisation, selection, implementation and action – ongoing and regular work to review and improve the indicators will help to ensure they are 'fit for purpose'. Future work is needed to refine methodologies and close existing data gaps on central aspects including local food consumption, carbon footprint measurement and workforce skill development.

Building on the prioritisation of policy priorities and indicator selection, the next step is to pilot test and implement the proposed indicators to establish baseline data. In recent tourism data comparisons, 2019 is typically used as the pre-Covid-pandemic baseline. However, this risks comparing future performance to old patterns of maximising visitor growth and expenditure, de-prioritising environmental health and local community well-being. In the case of Malta, with main source markets from within Europe, 2023 already represented a new record year. This report therefore proposes selecting 2023 as the baseline year – as a symbolic and practical measure of looking forward.

Moving to a sustainable future of tourism requires transformative change; measurement can help monitor progress against policy goals. Analysing and interpreting results against targets and thresholds is the foundation for taking evidence-based action towards sustainable development. To support Malta to operationalise the indicators, enabling sustainable destination management decisions, this report proposes a toolkit comprising of five levers. The following four pillars are designed to incorporate tourism sustainability indicators into decision making and action for positive change: A) Strategy, B) Engagement, C) Training and support and D) Funding.

Positive change cannot be realised in isolation – it requires co-operation with relevant stakeholders in the tourism ecosystem and adjacent sectors. The toolkit thus encompasses action levers for MTA and the Ministry to operationalise the indicators internally, but also externally with other government agencies, tourism businesses, visitors, and local residents. The logic is illustrated in Figure 4. The sections below explain the action levers pillar by pillar (see Table 3 for an overview), providing good practice examples for each.

Figure 4. Toolkit to operationalise the indicators
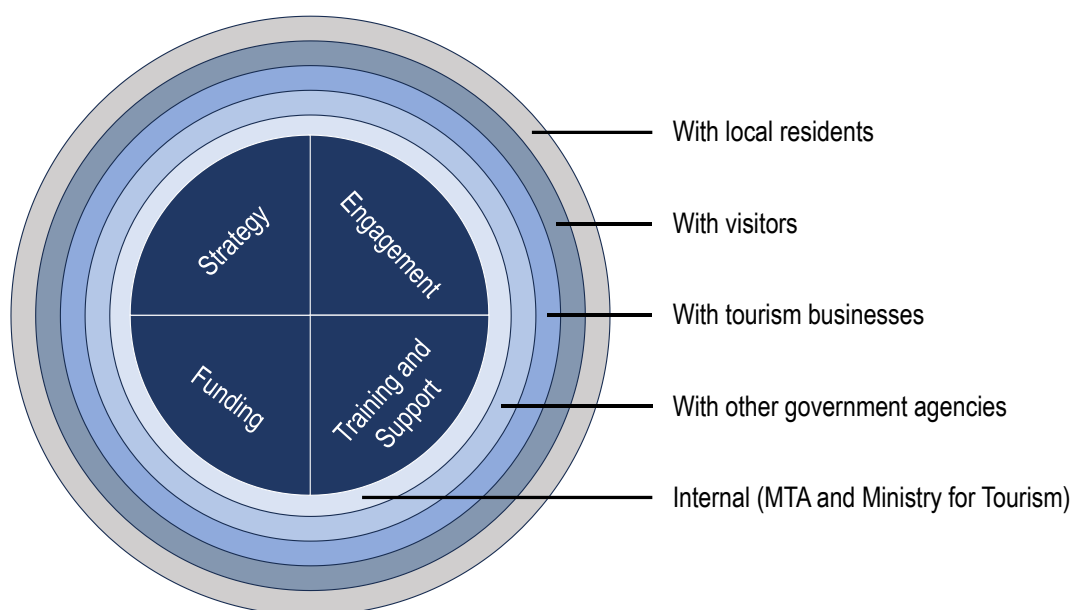
Source: OECD elaboration.

Table 3. Action levers across the four pillars of the toolkit

Pillar	Internal (MTA and Ministry for Tourism)	With other government agencies	With tourism businesses	With visitors	With local residents
A) Strategy	Market selection and growth strategies	Build synergies with overall sustainable development strategy	Develop industry action plan	Develop visitor pledge	
B) Engagement	Unite around common purpose and strategy	Build strategic partnerships	Leverage annual Malta National Tourism Conference	Events on sustainable travel for awareness raising	Systematic involvement in decision making
C) Training and support	Recruitment strategy and staff training	Data literacy training for policymakers	Training programmes and ESG reporting support	Guide to sustainable travel in Malta	Organise public talks on sustainability topics
D) Funding	Budget allocation	Joint financing instruments for infrastructure development	Financing mechanisms for sustainable practices	Vouchers to incentivise sustainable choices	Community grants for sustainable tourism initiatives

Pillar A) fosters a strategic approach to sustainable tourism development. Indicator results should feed into market selection and growth strategies, by for instance focussing growth on shoulder seasons and prioritising markets with a shorter distance to Malta. Building synergies with Malta's Sustainable Development Strategy for 2050 ensures that tourism is embedded in wider sustainable development goals. For many policy priorities, progress depends on private-sector action – developing an industry action plan focussing for instance on energy, water and waste can be a starting point to affect change on these issues. Developing a shared vision of tourism development with local residents and formalising it in a visitor pledge can be a powerful tool to raise awareness, as New Zealand's *Tiaki* promise has shown (see Box 7). Pledges, and other initiatives such as codes of conduct encourage visitors to take a more active role and encourage positive behaviour. To be effective, pledges need to be accompanied by rules and regulations.

> ### Box 7. Visitor pledge example: New Zealand's Tiaki Promise
>
> New Zealand's visitor pledge, also called the *Tiaki* Promise, was developed in a participative process by seven private and public sector organisations, including Tourism New Zealand. *Tiaki* is a Māori word chosen to describe the vision underlying the pledge linked to the notions of care, conservation and protection. The pledge encourages visitors to act as *kaitiaki* (guardians) of New Zealand, when visiting the country. As such, it sets out three principles visitors should adhere to:
>
> - Care for land, sea and nature, treading lightly and leaving no trace
> - Travel safely, showing care and consideration for all
> - Respect culture, traveling with an open heart and mind
>
> *Tiaki* – Care for New Zealand is also a collaborative platform sharing insights for visitors on how to implement the pledge during their travel. This includes concrete tips and guidelines to protect nature, keep New Zealand clean, prepare for outdoor experiences, drive carefully and show respect. A multi-media toolkit enables stakeholders, including tourism businesses, to help share *Tiaki* with visitors.

Pillar B) fosters multi-stakeholder engagement. Internally, motivation of staff at MTA and the Ministry for Tourism is central – rallying employees around a common purpose to work towards the strategic goals and improve indicator performance. The workshop during the project already was a first step to engage with other government agencies – this momentum could be used to develop long-term strategic partnerships. The annual Malta National Tourism Conference can be leveraged to engage private-sector actors, inviting them as well as local residents to speak and listen. Events on sustainable travel can raise awareness of key sustainability issues among visitors. While mostly symbolic in nature, examples such as plastic waste collection on beaches help create a sense of purpose and community. MTA could work to develop mechanisms for systematic multi-stakeholder engagement in decision making, such as public consultation on planned initiatives where not already in place.

Pillar C) Training and Support is essential to make progress on sustainable tourism development. Recruitment strategy and staff training should prioritise skills fostering sustainability. Developing data literacy for policymakers will help interpret the indicator results and develop evidence-based policy for taking action on the indicator results. Training programmes and ESG (Environmental, Social, and Governance) reporting support have proven powerful mechanisms for building private sector capacity and supporting their sustainability transition in Portugal (see Box 8). Similar initiatives could be developed by MTA. Developing a guide for sustainable travel in Malta, paired with promoting education and capacity building on sustainability topics provides concrete guidance to visitors and residents.

Resource constraints are a major barrier to sustainable (tourism) development. Pillar D) thus focusses on funding. Budget allocation should align with the strategic objectives and contribute to effecting positive change in key policy areas. Joint financing instruments for infrastructure development could be explored with other government agencies. Financing mechanisms for sustainable practices can facilitate private-sector action – see Box 9 for an example of South Africa's Green Tourism Incentive Programme. Vouchers incentivising sustainable choices and community grants for sustainable tourism initiatives complement the toolkit.

The four pillars of strategy, engagement, funding, training and support help operationalise the set of indicators to turn data into action. Designing action levers across relevant stakeholders of the tourism ecosystem builds the basis for an inclusive approach to sustainable (tourism) development. The toolkit elements cannot be implemented all at once; as with the approach to the indicators themselves, the pillars and action levers are designed for implementation in a stepped approach. A logical starting point would be to initially focus on the internal actions, or those within the direct sphere of influence for MTA and the

Ministry of Tourism. Over time, the aim would then be to build a coalition with other relevant stakeholders to utilise the strengthened evidence base for a sustainable tourism future in Malta.

Box 8. Initiatives to engage the private sector for sustainable tourism development in Portugal

As part of Portugal's Sustainable Tourism Plan 2020-23, Turismo de Portugal has developed two initiatives to support private sector adoption of sustainable tourism strategies:

- 360° Tourism Enterprises Programme: Launched in 2021, the 360° Programme encourages tourism businesses to accelerate the integration of ESG criteria in their operations. The programme provides technical assistance including ESG-focussed training on management and reporting, access to diverse financing options, sector-specific ESG performance indicators and monitoring instruments to track progress.
- Upgrade Programme: Designed to cater to future skill demands, the Upgrade Programme targets employees of micro and small enterprises with two specialised training tracks focussing on digitalisation and sustainability. The programme also includes a monitoring component that offers personalised support to micro and small businesses, as well as individual entrepreneurs, guiding them in implementing digital transformation and sustainability projects.

Together, these initiatives are aimed at driving sustainable development in Portugal's tourism sector by providing technical resources and skill-building opportunities that equip businesses to meet evolving market demands.

Box 9. South African Green Tourism Incentive Programme

The Green Tourism Incentive Programme was introduced by the South African Department of Tourism in 2017 to support sustainable development within the tourism sector. This initiative is designed to assist private tourism businesses in implementing sustainable practices through solutions focussed on efficient electricity and water management.

The programme offers grant funding to micro and small tourism enterprises, enabling them to invest in solutions that reduce both energy and water consumption, as well as related costs. The programme supports the adoption of various resource-efficient solutions, including:

- Renewable Energy Systems: Solar and wind energy generation
- Energy and Water-Efficient Equipment: Solar water heaters, heat pumps, and HVAC (Heating, Ventilation, and Air Conditioning) systems
- Water Sourcing and Recycling Systems: Technologies for rainwater harvesting and greywater recycling

Additionally, the initiative promotes sustainability awareness among both guests and staff, encouraging responsible practices and behaviour aligned with resource efficiency. Participating micro and small enterprises are required to commit to specific minimum standards for energy and water savings, as identified through a resource efficiency audit or assessment conducted by a certified auditor. This programme encourages private-sector entities to adopt a proactive approach towards sustainable tourism development, aligning business practices with environmental responsibility and resource efficiency.

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Note

United Nations Sustainable Development Goals (SDGs): 1 - No poverty, 2 - Zero hunger, 3 - Good health and well-being, 4 - Quality education, 5 - Gender equality, 6 - Clean water and sanitation, 7 - Affordable and clean energy, 8 - Decent work and economic growth, 9 - Industry, innovation and infrastructure, 10 - Reduced inequalities, 11 - Sustainable cities and communities, 12 - Responsible consumption and production, 13 - Climate action, 14 - Life below water, 15 - Life on land, 16 - Peace, justice and strong institutions, 17 - Partnerships for the goals.