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UNWTO
World Tourism Organization

HELLENIC REPUBLIC
MINISTRY OF TOURISM

Project:

Facilitating Tourism Recovery in the Aftermath of COVID-19 Greece

Activity:

Measurement of the COVID-19 Tourism Impact and Develop Monitoring Guidelines

Tourism Impact Monitoring Guidelines Report

April 2022

Acknowledgement

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Lastly, from the UNWTO side, this study was conducted by the Tourism Statistics Expert Ms. Ana Rivas under the supervision of Ms. Vanessa Satur and Mr. Marcel Leijzer, Managers, UNWTO, and Mr. Nikolaos Gkolfinopoulos, Senior Project Specialist, UNWTO.

All partners involved hope that this report will shed new light onto how the Tourism Statistics can help Greece monitor the positive and negative impact

tourism has to the economy and destinations of the country and help make the decision making of the stakeholders, especially when dealing with urgent crisis situations.

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List of Abbreviations

BoP	Balance of Payments
CAGR	Compound Annual Growth Rate
EBRD	European Bank for Reconstruction and Development
GDP	Gross Domestic Product
IRTS 2008	International Recommendations for Tourism Statistics 2008
MoT	Ministry of Tourism
OECD	Organization for Economic Cooperation and Development
ToR	Terms of Reference
TSA	Tourism Satellite Account
UNWTO	World Tourism Organization

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Introduction

In the course of the last decade, several emergency situations of different nature have occurred in tourist destinations: terrorist attacks, emergency incidents regarding health, such as MERS-CoV and SARS, calamities relating to natural environment, such as hurricane, earthquake, volcanic eruptions, to name a few. In those difficult situations, it has been proven that the tourism industry has been highly resilient, with an exceptional endurance, mainly due to the industry's high adaptive capacity. These reactive processes in the face of emergencies generate structural and operational changes of different scopes within the tourism industry ecosystem, which are often incorporated into the productive system once the emergency is over, and thus tourism emerges strengthened and better prepared to face future crises.

This is the case of COVID-19, with the difference that it is a new crisis with a global scope, not limited to a specific territory, but affecting all destinations on the planet, and that even in 2022 it continues to pose new challenges and uncertainties, especially for the tourism industries, perhaps the most affected economic sector, due to the nature of its activity.

Facing this situation and coming out stronger is of vital importance for a country like Greece, where tourism is a great contributor for the national economy and employment. That is why the Hellenic Government has launched different initiatives and projects to this end, from a holistic and multi-sectoral perspective. Within this context, this paper presents a series of recommendations regarding one aspect of this recovery: the measurement of tourism activity and its different aspects under different scenarios, especially catering to the particular needs within an extended period of crisis, such the one of COVID-19. The aim is to contribute to the measurement system of tourism activity in Greece as a useful tool to boost the competitiveness of the private sector and destination

management (already linked to sustainability), as well as the resilience of this industry and its capacity to face and address the impact of various crises.

The recommendations suggested here are based on lessons learned in the course of the pandemic, as well as on the analysis of Greece's current tourism statistics and knowledge system. This document builds upon the previous report prepared under the scope of this activity; the "COVID-19 Impact Assessment Report".

Prepared for the future: possible scenarios

1.1 Preliminary methodological issues

The monitoring guidelines are designed by assessing different scenarios (positive, mild, severe) for a horizon of 1 or 2 years. For this scenario assessment, the focus is on the main variable that determines the economic, social and environmental impact of tourism activity in Greece, which is the arrival of international travellers. Therefore, the design of possible scenarios (positive, mild, severe) which helped frame the tourism impact monitoring guidelines contained in this report, were based on the following sources/ inputs:

- the outcome of the COVID-19 Tourism Impact Assessment,
- the international and domestic tourism trends,
- the epidemiological outlook,
- the perception of the situation by all interviewed stakeholders,
- international arrivals analysis and projections

The above inputs are further analysed in section 1.2: Background information and data.

From the estimation of international demand, it can be expected that the other indicators (employment, income, tourism GDP, and others) will evolve accordingly, but it is not currently possible to calculate these values and estimate their future projections as Greece currently has no Tourism Satellite Account (TSA) .

On the other hand, in relation to the monitoring guidelines for measuring the impact of COVID-19 or any other externality, it is important to note that the proposed measures are not designed to specifically measure the impact of the pandemic. In fact, the proposals have a broader objective; to strengthen and

improve the statistical system so that the Ministry of Tourism of Greece and related authorities are able to better measure the impact of any externality, and thus improve their resilience and competitiveness. The scenarios presented below take into account the tendencies recorded up to the first quarter of 2022 in the tourism sector of Greece. Regardless of the final scenario outcome, the KPIs suggested must be measured to create the tourism intelligence required for the evaluation of the progress and improve the accuracy of future predictions. In the face of a crisis, regardless of the type and intensity, the national statistical system for the monitoring and measurement of the Greek tourism industry must be able to measure these impacts, as well as to provide decision makers with relevant and updated information **in a timely manner**. The proposed measures are understood as an element of competitiveness for Greek tourism.

1.2 Background information and data

a. Outcomes of the COVID-19 Tourism Impact Assessment[1]

The previous report "COVID-19 Tourism Impact Assessment" carries out an analysis of the impact of the pandemic on the supply and demand of the Greek tourism industry, based on official sources. That analysis allowed the identification of various data production shortcomings and areas in need of optimisation that, at the current stage, hinder the measurement of the impact. Therefore, the improvement of the Greek statistical system in tourism must

[1] *For more information on these issues, please refer to the report "COVID-19 Tourism Impact Assessment" prepared as a separate report under the same joint programme of the EBRD and UNWTO.*

begin with addressing these isuess. The following table summarizes the shortcomings and problems identified.

Figure 1. Summary-table with main gaps and shortcomings identified in the COVID-19 Tourism Impact Assessment report.

b. Air traffic scenarios and forecast

In the case of Greece, and based on the calculations made using the INSETE Dashboard and data for 2021[2], the arrivals through air accounted for 76.4% (including arrivals from road boarders and excluding cruise ships). This demonstrates that three out of four tourists arrive by air, making the use of air traffic scenarios and forecasts very relevant for Greece.

The air traffic analysis in this chapter is based on data from the European Organisation for the Safety of Air Navigation (Eurocontrol). Eurocontrol is an international organisation working to achieve safe and seamless air traffic management across Europe. Founded in 1960, Eurocontrol currently has 44 member states, works with national authorities, air navigation service providers, civil and military airspace users, airports, and other organisations. Its activities involve all gate-to-gate air navigation service operations: strategic and tactical flow management, controller training, regional control of airspace, safety-proofed technologies and procedures, and collection of air navigation charges. It is therefore a very important source of tourism statistics that should be further exploited, especially when taking into account the dependency of Greece on tourist arrivals through air.

The traffic figures collected refer to the number of flights, including both passenger and cargo.

The forecasts used by Eurocontrol for the coming years are based on historical data, as well as on the operational plans of all the companies operating in Greece, based on demand forecasts and other variables. It is therefore a forecast

[2] https://insete.gr/bi/air-and-road-arrivals/?lang=en

that can be used for the international demand forecast, although it is known that fluctuations in the number of passengers occur with some delay relative to fluctuations in the number of flights. Consequently, for the scenario calculation, an estimated time deviation was applied (chapter 1.3).

Forecast for EU-Region (main Greek source market):

New Eurocontrol 2021-2027 forecast expects traffic recovery to 2019 levels by the end of 2023.

As stated by Eurocontrol[3]:

"In the chart below: the "high scenario" envisages that the vaccination campaign will continue within both Europe and globally, with approved vaccines *remaining effective, including against variants. With a coordinated inter-regional approach, travel restrictions are relaxed, with most inter-regional flows resuming by mid-2022. Business travel recovers rapidly in this scenario.*

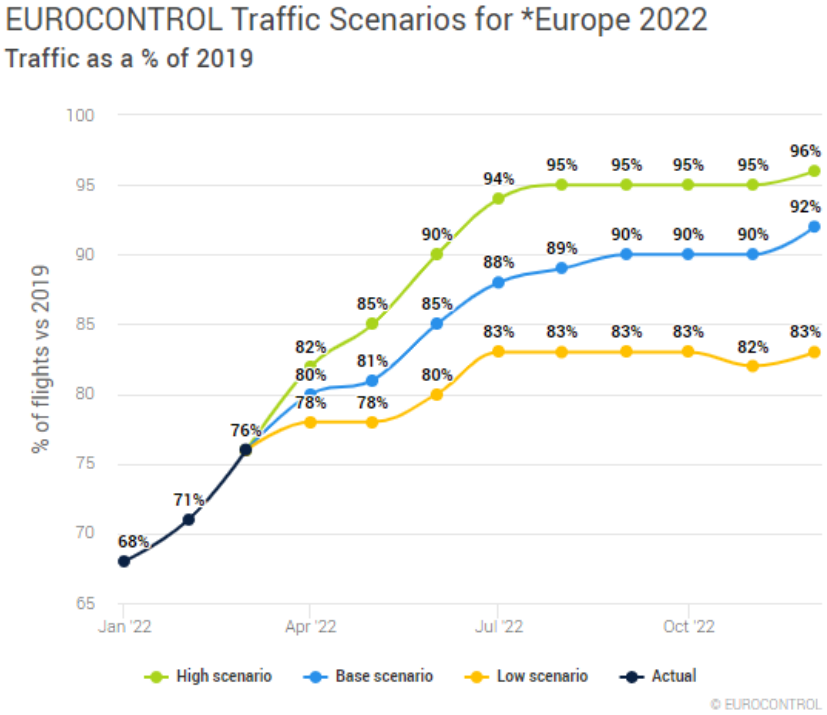
The "baseline scenario" is similar but with flows outside Europe recovering rather more slowly (partly as the result of a lack of a coordinated inter-regional approach) and with business travel only recovering to pre-COVID-19 levels in 2023.

The "low scenario" considers the impact of several downside risks, such as slow/patchy vaccination rates, the need for new vaccines as a result of variants, the reintroduction of lockdown and similar measures, the continuation or re-imposition of travel restrictions, economic risks, including high energy prices and a long-term drop-in people's propensity to fly.

[3] https://www.eurocontrol.int/publication/eurocontrol-forecast-update-2021-2027

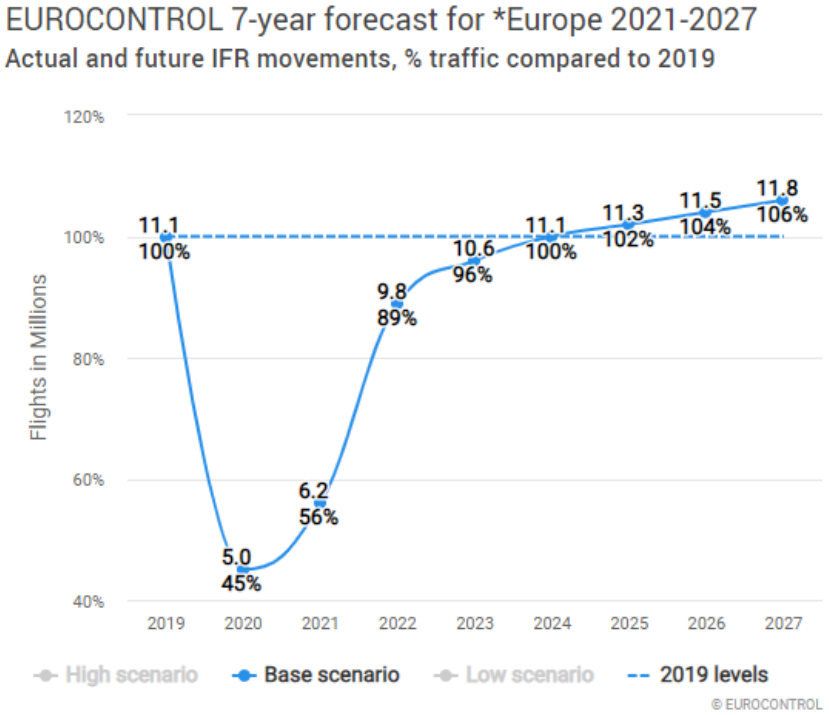
A new monthly forecast has been updated by Eurocontrol in April 2022, showing a continuation of recent positive trends, in particular during the holiday period of Summer 2022, reaching 89% of 2019 traffic by August in the Base Scenario, with this level gently rising by the end of the year at 92%.

Figure 2. Eurocontrol Forecast Update 2021-2027, air traffic scenarios for EU region.



*Europe = ECAC 44 Member States

Date: April 2022



*Europe = ECAC 44 Member States

Date: October 2021

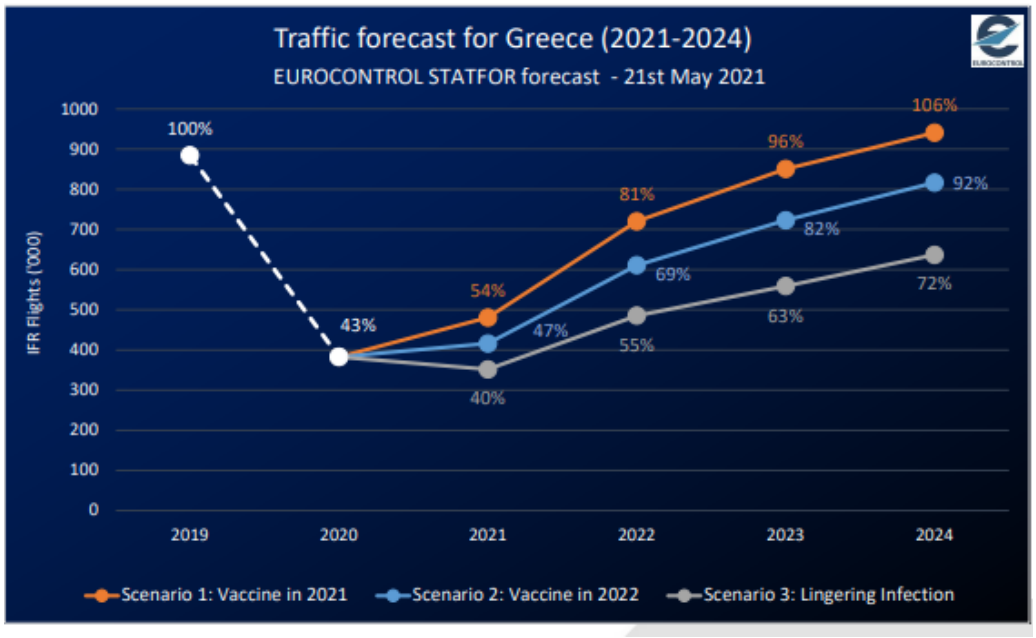
Source: Eurocontrol

Forecast for Greece air transport:

The traffic data in the graph below forecasts the reactivation of flights in Greece in relation to the base year 2019. Even though the latest data available publicly for Greece date back to 2021, it is important to note that the current sentiment in Greece is that tourism will reach and possibly exceed the 2019 levels.

Today the data in Greece reveal much higher recovery expectations, so that the forecast made for 2023 is likely to be seen in 2022.

Figure 3. Eurocontrol Forecast Update 2021-2027, air traffic scenarios for Greece.



Source: Eurocontrol

c. Tourist demand trends: EU Region

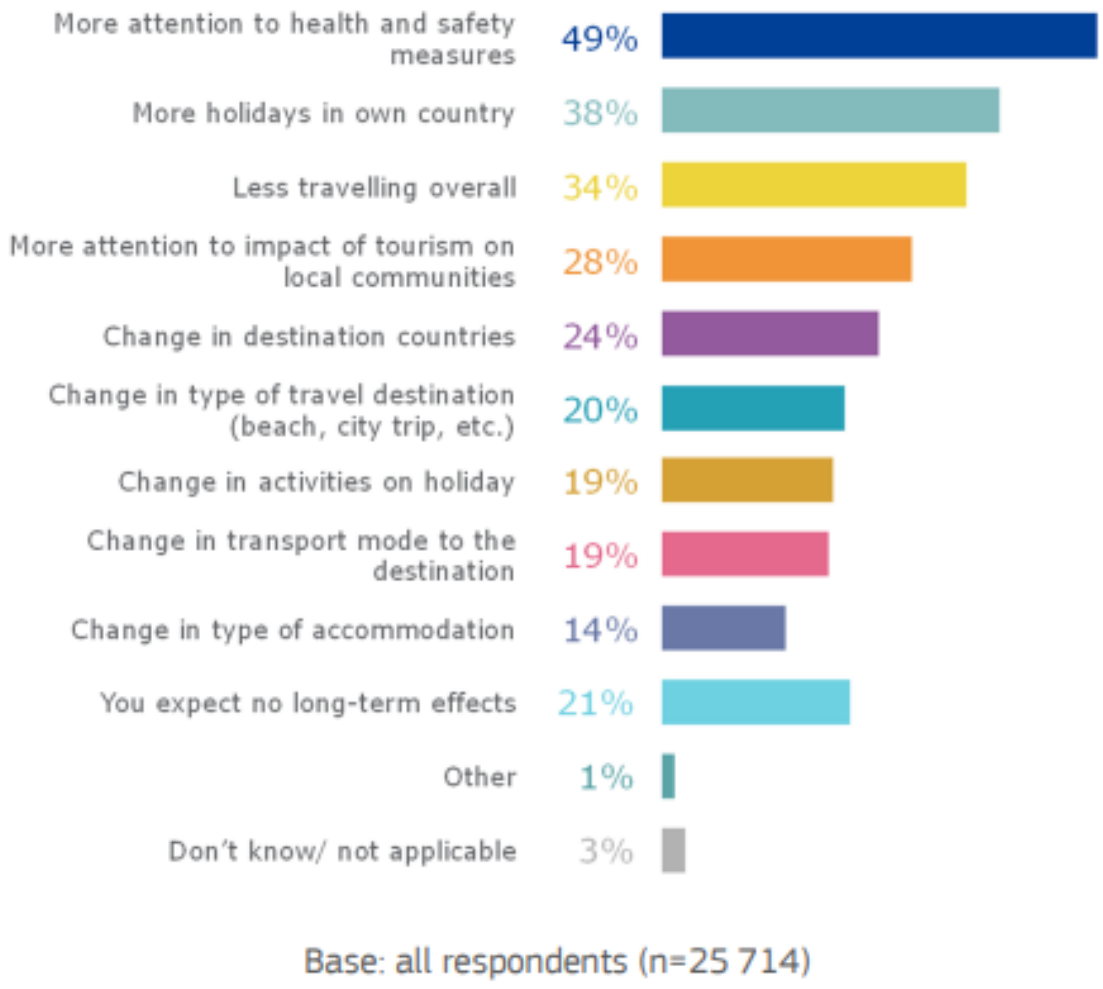
Flash Eurobarometer "Attitudes of Europeans towards Tourism"4

4 Download the report: https://www.ipsos.com/sites/default/files/ct/news/documents/2021-12/EU-attitudes-tourism-report.pdf

The small-scale Flash Eurobarometer survey was launched by the European Commission in the late eighties. The Flash surveys are conducted in all EU member states at times, occasionally reducing or enlarging the scope of countries as a function of specific topics. Interviews are conducted by phone in the respective national language and the sample size is regularly maintained at 500 respondents per country.

The last survey (November 2021) "Attitudes of Europeans towards Tourism" shows the expected long-term effects of COVID-19 pandemic on travel behavior by European citizens.

Figure 4. Long term effect on travel behaviour expected by European citizens.



Source: Flash Eurobarometer 449, November 2021.

Key findings:

Travel behaviour:

- Before the COVID-19 pandemic, the majority of EU citizens travelled for leisure or work; eight in ten respondents. Out of these, 43% said they did so 'several times a year' or 'once or twice a year' (37%). Lastly, out of all respondents, less than one in ten stated 'once every few years' travel frequency.

- When planning a holiday, the types of accommodations EU citizens are most likely to consider are commercial accommodation (hotel or B&B) and family-run pensions (42%), private accommodation (holiday home or apartment) booked directly from the owner (33%) and staying at a friend's or relative's place (30%). Multiple answers were allowed.Adds up to 105%

- Vast majority of EU citizens expect that the COVID-19 pandemic will have some type of long-term effects on their travel behaviour – only 21% expect no long-term impact at all. Respondents said the pandemic led them paying more attention to health and safety measures (49%), having more holidays in their own country (38%) and travelling less overall (34%).

Preferred booking channels and sources of information for making travel arrangements:

- When organising their travel and tourism activities, EU citizens most often rely on online platforms for professional accommodation services like hotels and B&Bs (31%), followed by online platforms combining travel services such as accommodation, car rental, flights, etc. (25%).

- 'Offline' methods for organising travel and tourism activities, nonetheless, remain important: 24% of respondents are most likely to arrange their trip via someone they know, while 19% are most likely to make a booking 'over the counter' in a travel agency or transportation company.

- When respondents make travel plans, their preferred source of information is 'recommendations from friends, colleagues or relatives' (56%), followed by 'personal experience' (37%) and 'websites collecting reviews and ratings from travellers' (34%). Multiple answers were allowed. Adds up to over 100%

Key reasons for selecting a destination:

- EU citizens are most likely to base their decision for a travel destination on three aspects: the 'cultural offerings at the destination' (44%), 'the price of the overall trip' and the 'natural environment in the destination' (both 43%).

- The fourth and fifth most important reasons for respondents to choose a destination are 'activities available in the destination' (30%) and 'accessibility of services and activities for all' (24%).

Opinions on sustainable travel:

- A large majority of EU citizens (82%) are prepared to change at least some of their travel and tourism habits to be more sustainable; 15% of respondents say they are not prepared to do so.

- The actions EU citizens are most willing to take are consuming locally sourced products on holiday (55%), reducing waste while on holiday (48%), traveling outside of the tourist high season (42%) and travelling to

less visited destinations (41%). Smaller shares of EU citizens are ready to change their travel and tourism to be more sustainable by paying more, either to protect the natural environment (35%) or to the benefit of the local community (33%).

- When making travel plans and looking for sustainability or accessibility related information, EU citizens are most likely to find it difficult to obtain trustworthy information on the carbon footprint of transportation options – 48% think it is very or rather difficult to find trustworthy information on this aspect, compared to 33% who find this very or rather easy.

- Respondents also often find it difficult to obtain information on sustainability commitments of destinations (43% vs 41% who find this easy) the accessibility of the destination for persons with disabilities or with reduced mobility (39% vs 39% who find this easy) and sustainability certifications of the accommodations (38% vs 46% who find this easy).

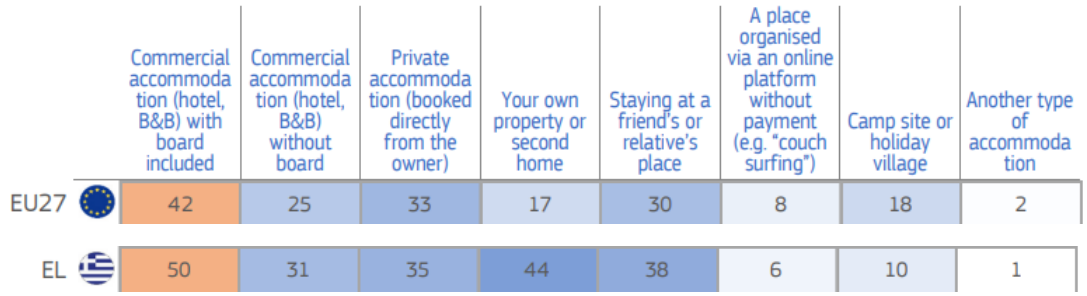
As the analysis shows, there are different variables in demand travel intentions, which will function as brakes or accelerators going forward. Greece has developed important measures to minimize these brakes (as safety measurements) and is in the process of reinforcing accelerators such as the growing sensitivity of demand towards sustainability-oriented tourism.

d. Tourist demand trends: Domestic and Outbound Tourism

The tourist demand trends analyzed below only refer to residents of Greece for two main categories; Domestic Tourism and Outbound Tourism.

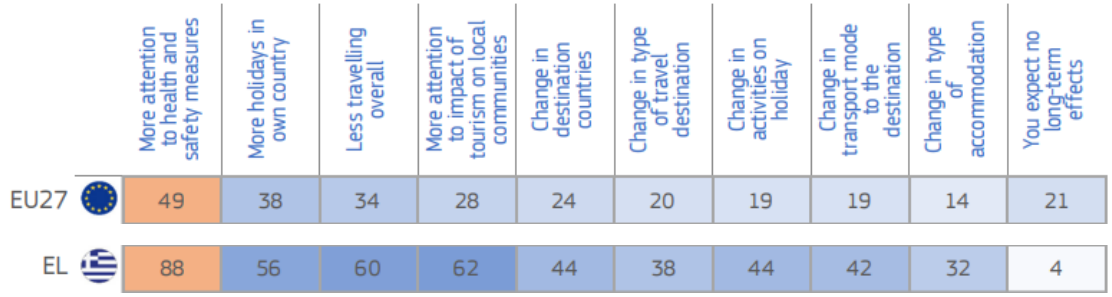
Figure 5. Demand trends for the European and the Greek market from the FLASH EUROBAROMETER "ATTITUDES OF EUROPEANS TOWARDS TOURISM 2022. (Max. 3 answers, % by country, EL=Greece).

Accommodation preferences:



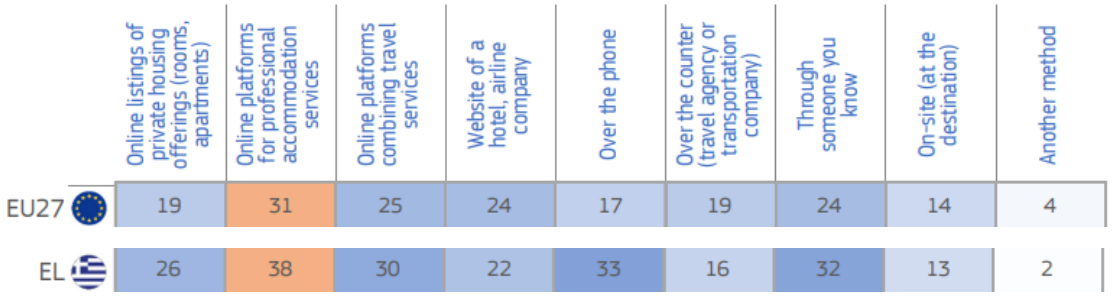
	Commercial accommodation (hotel, B&B) with board included	Commercial accommodation (hotel, B&B) without board	Private accommodation (booked directly from the owner)	Your own property or second home	Staying at a friend's or relative's place	A place organised via an online platform without payment (e.g. "couch surfing")	Camp site or holiday village	Another type of accommodation
EU27	42	25	33	17	30	8	18	2
EL	50	31	35	44	38	6	10	1

Long-term effects due to the pandemic:



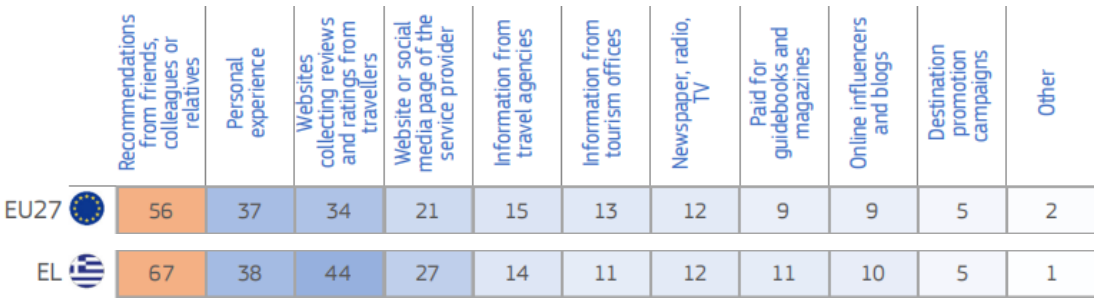
	More attention to health and safety measures	More holidays in own country	Less travelling overall	More attention to impact of tourism on local communities	Change in destination countries	Change in type of travel destination	Change in activities on holiday	Change in transport mode to the destination	Change in type of accommodation	You expect no long-term effects
EU27	49	38	34	28	24	20	19	19	14	21
EL	88	56	60	62	44	38	44	42	32	4

Preferred booking channels:



	Online listings of private housing offerings (rooms, apartments)	Online platforms for professional accommodation services	Online platforms combining travel services	Website of a hotel, airline company	Over the phone	Over the counter (travel agency or transportation company)	Through someone you know	On-site (at the destination)	Another method
EU27	19	31	25	24	17	19	24	14	4
EL	26	38	30	22	33	16	32	13	2

Preferred sources of information:



	Recommendations from friends, colleagues or relatives	Personal experience	Websites collecting reviews and ratings from travellers	Website or social media page of the service provider	Information from travel agencies	Information from tourism offices	Newspaper, radio, TV	Paid for guidebooks and magazines	Online influencers and blogs	Destination promotion campaigns	Other
EU27	56	37	34	21	15	13	12	9	9	5	2
EL	67	38	44	27	14	11	12	11	10	5	1

Key reasons for selecting a destination:

	Cultural offerings at the destination	Natural environment in the destination	The price of the overall trip	Activities available in the destination	Accessibility of services and activities for all	Clear information on health and safety guidelines	Destination promotes eco-friendly practices	Destination can be reached by low-impact transport	Local population involved in tourism activities	Sustainability certification of accommodation and attractions	Something else
EU27	44	43	43	30	24	20	15	14	13	11	6
EL	50	57	57	25	27	27	12	17	11	12	2

Preparedness to change travel habits to be more sustainable:

	Consume locally sourced products on holiday	Reduce waste while on holiday	Take holidays outside of the high tourist season	Travel to less visited destinations	Choose transport options based on ecological impact	Pay more to protect the natural environment	Reduce water usage on holiday	Contribute to carbon-offsetting activities	Pay more to the benefit of the local community	I am not prepared to change my habits
EU27	55	48	42	41	36	35	35	34	33	15
EL	77	70	66	63	50	52	52	50	47	12

Ease of finding sustainability or accessibility related information:

	Appropriateness of destinations/ attractions for children	How to engage in authentic local activities	Local sourcing of food in restaurants	Eco-friendly tourism activities at the destination	Sustainability certifications of the accommodations	Sustainability commitments of destinations	Accessibility of destination for persons with disabilities or with reduced mobility	Carbon footprint of transportation options
EU27	64	63	57	56	46	41	39	33
EL	70	62	71	62	40	34	37	27

The data above show that the travel trends of Greek domestic demand are not very different from those of other European markets. It is understood that domestic demand is more sensitive to the price factor and more committed to local development.

e. Epidemiological outlook

The European Union agency "European Centre for Disease Prevention and Control" informs that by 4 April 2022, 3,114,591 people have been infected with COVID-19 in Greece and 27,838 have died from this cause.

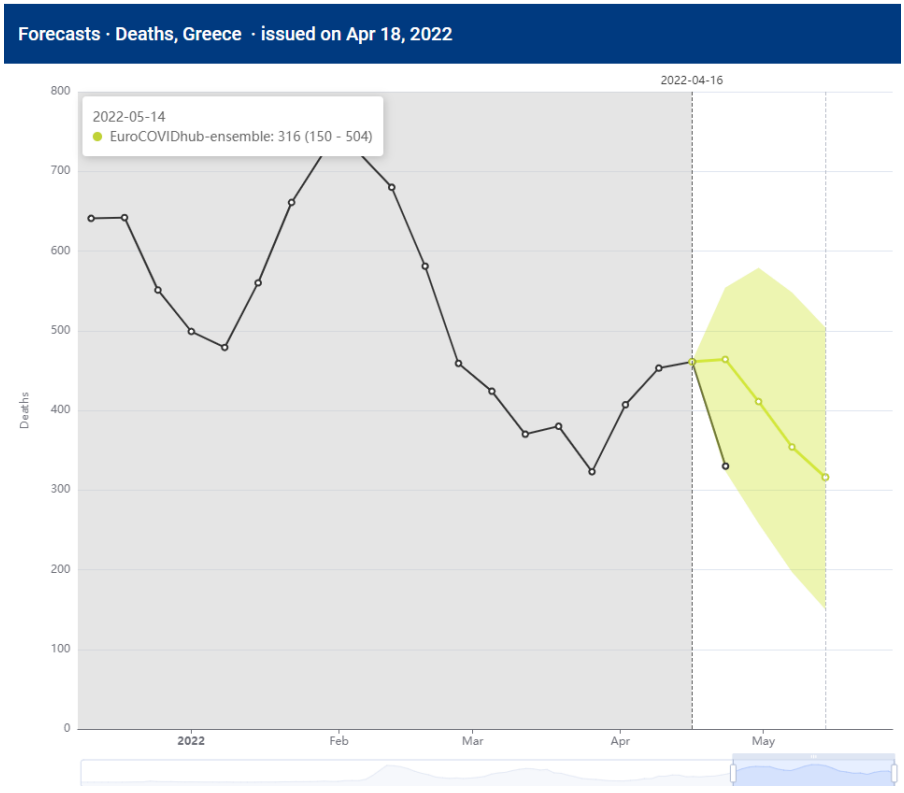
The incidence of cases in Greece spiked in early 2022, as in most European destinations, due to the huge and rapid spread of the Omicron variant, raising new alarm bells and slowing down travel and tourism. Since then and until now, cases in Greece have been declining, with occasional spikes. 67,501 cases were registered in the week between 9 and 16 April, a figure that, according to the European Forecast Hub forecasts for 14 May (maximum calculation period), was expected to fall by 62.3% to 25,479 cases. However, as of end of June, Greece has recorded a spike in COVID-19 cases. However, thanks to a vaccination rate (first complete course uptake, no booster) of 72.3% as of 30 June 2022 in Greece (in line with the European average of 72.7%)[5], the preventing measures of COVID-19 are being steadily lifted and so do the travel restrictions.

While experts expect that the virus will join the current landscape of common respiratory viruses without major consequences, we must be cautious in the face of several unknown factors and uncertain outlook.

[5]https://vaccinetracker.ecdc.europa.eu/public/extensions/covid-19/vaccine-tracker.html#uptake-tab

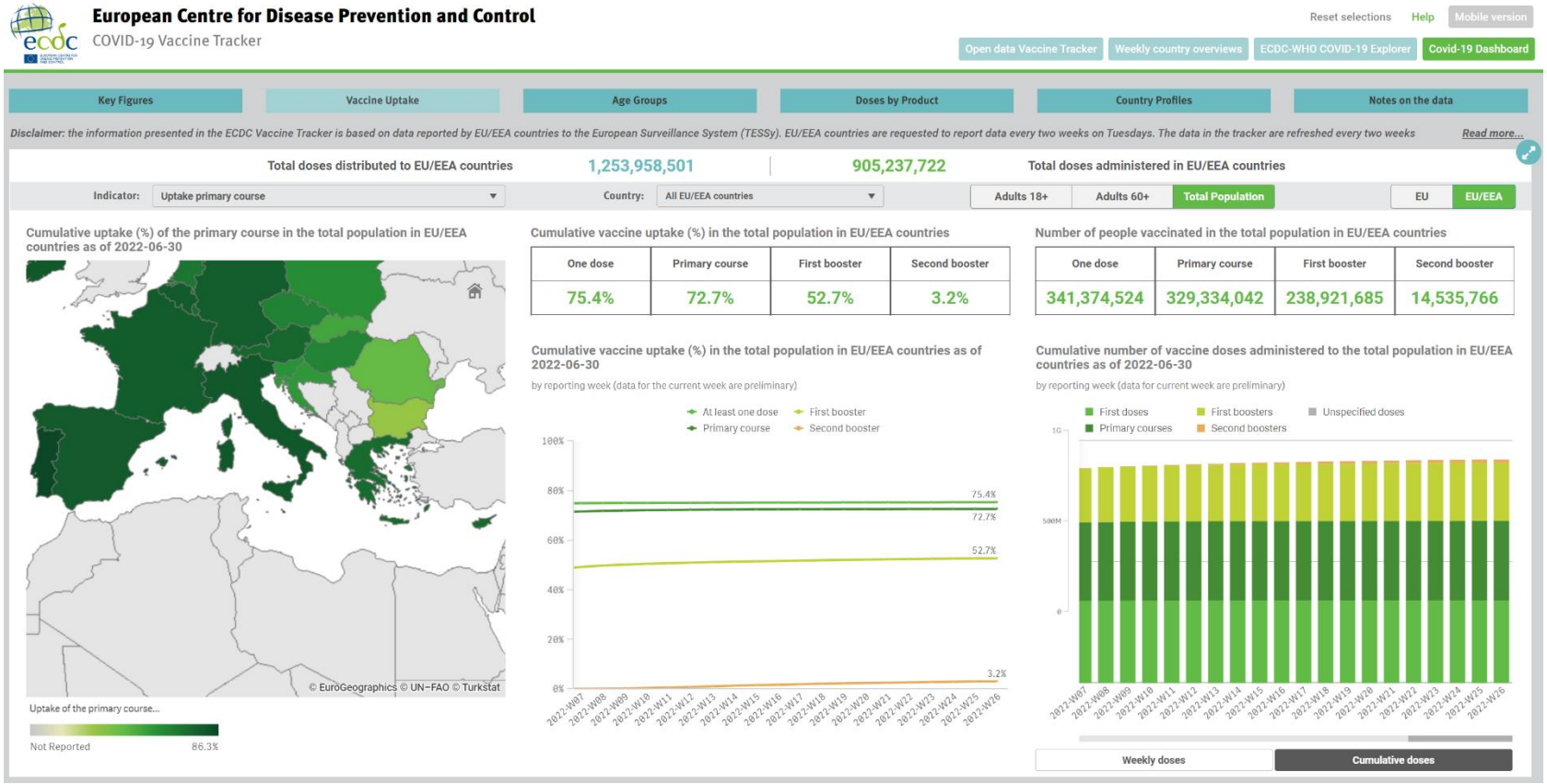
Figure 6. European COVID-19 Cases Forecast Hub, data for Greece (April – May 2022).

Figure 7. European COVID-19 Deaths Forecast Hub, data for Greece (April – May 2022)



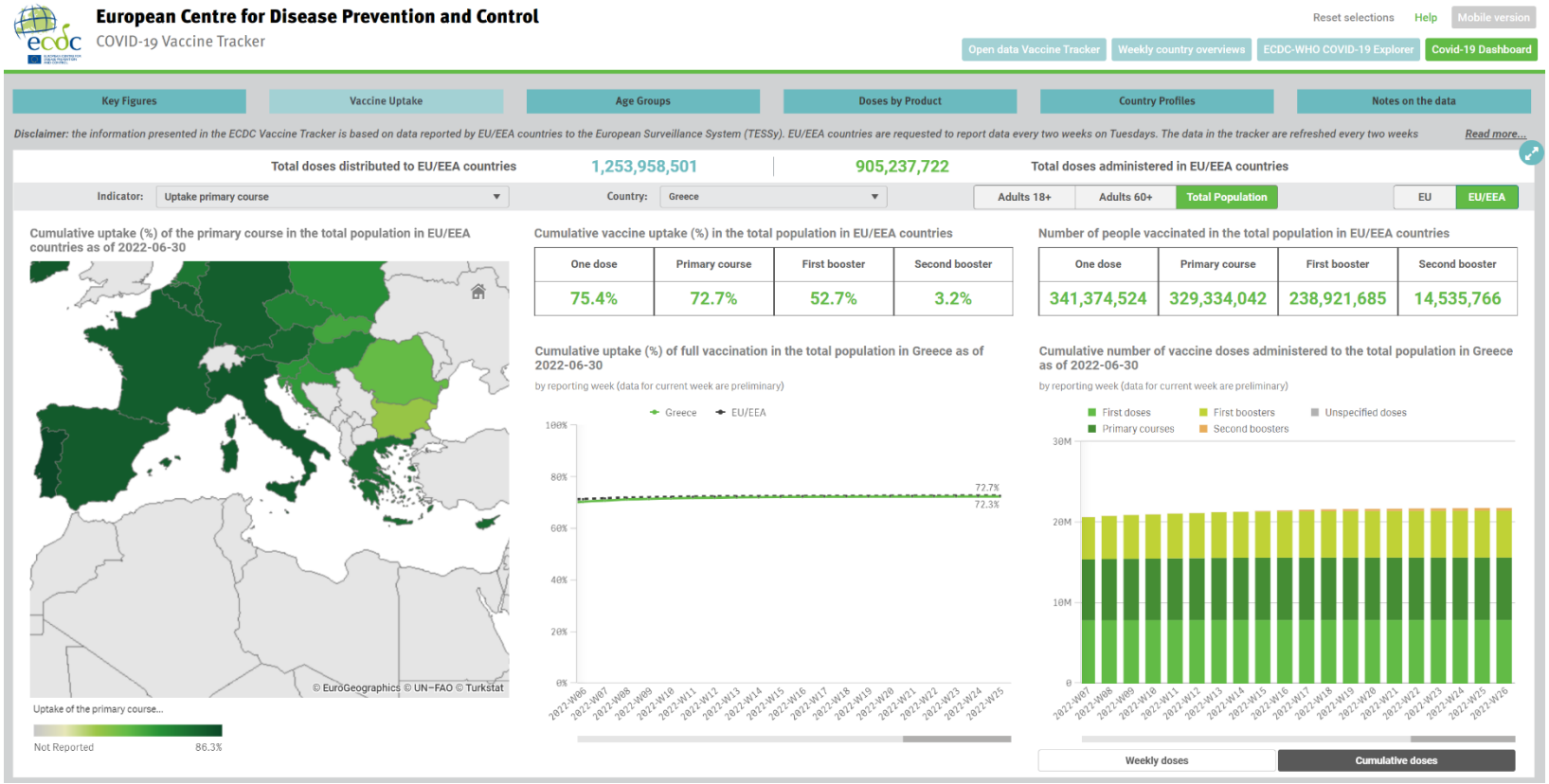
Source: European Centre for Disease Prevention and Control, European Commission.

Figure 8. Cumulative vaccine uptake in the total population in EU/EEA countries (1 July 2022).



Source: European Centre for Disease Prevention and Control, European Commission.

Figure 9. Cumulative vaccine uptake in the total population in Greece (1 July 2022).



Source: European Centre for Disease Prevention and Control, European Commission.

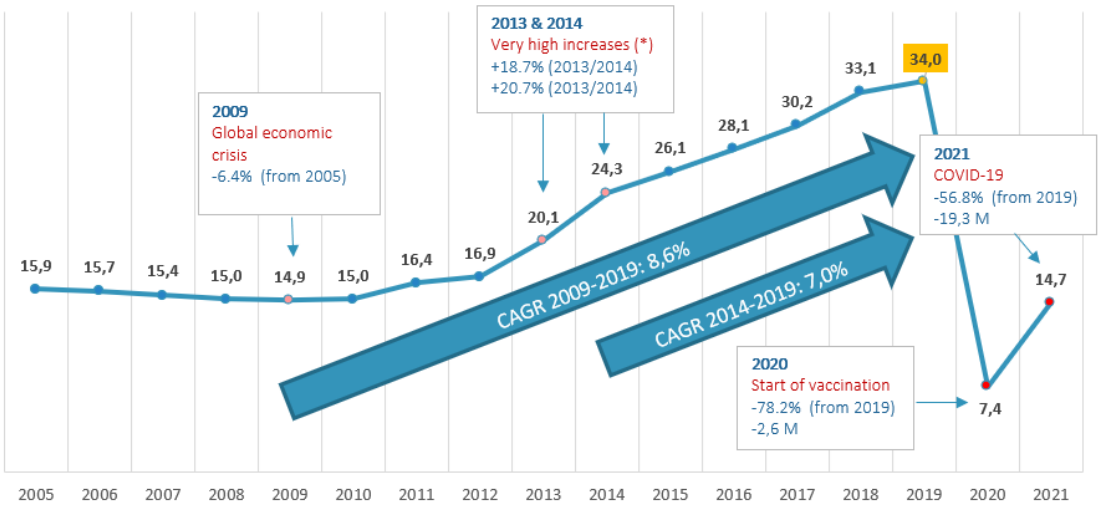
f. The perception of the situation by all interviewed stakeholders

When establishing the weight of different variables for the establishment of scenarios, the future perceptions expressed by the different agents interviewed during these months were taken into account. The stakeholders represented institutional, business, and academic spheres.

g. International demand analysis in Greece

The graph below shows the annotated evolution of international tourist arrivals figures since 2005 until today.

Figure 10. International arrivals in Greece (millions) 2005-2021 analysis.



Data source: Bank of Greece

Key insights (based on Figure 10):

- 2009: As in other destinations, the consequences of the economic crisis began to be felt and the number of international arrivals fell. Greece received 1,025 million fewer tourists than in the previous year.

- 2013 and 2014: In 2013 more than 20 million tourists visited Greece, numbers that have not been seen since Athens staged the summer Olympics in 2004. Also, tourism arrivals in 2014 surpassed the threshold of 24 million. While foreign tourist arrivals were booming, private domestic demand remained weak.

  *(*) [Where is the *?] Growth began a sustained slowdown starting in 2014, therefore for our calculation of scenarios, the CAGR 2014-2019, which was 7%, was used.*

- 2019: this year saw a record number of arrivals (more than 34 million), following continuous growth for the last 10 years. The compound average annual growth rate in the decade between 2009 and 2019 was 8.6% per year. In studying the disruptive impact of the pandemic, 2019 is therefore the benchmark year for measuring the decline or recovery.

- 2020: The pandemic caused a drastic overall decline in the movement of travellers. Greece received only 7.4 million international arrivals.

- 2021: With the discovery of the covid vaccines and the start of vaccination campaigns in Greece and European countries, a significant recovery in arrivals began, especially in the last quarter of the year. The total number of arrivals remained at 18.7 million, a 57% drop versus the baseline year of 2019.

- 2022: There is no data yet for 2022, but everything points to a rapid acceleration of travel within the European markets, due to high vaccination rates, higher spending power as a result of covid-induced savings and strong travel appetite post pandemic.

1.3 Possible scenarios and projections

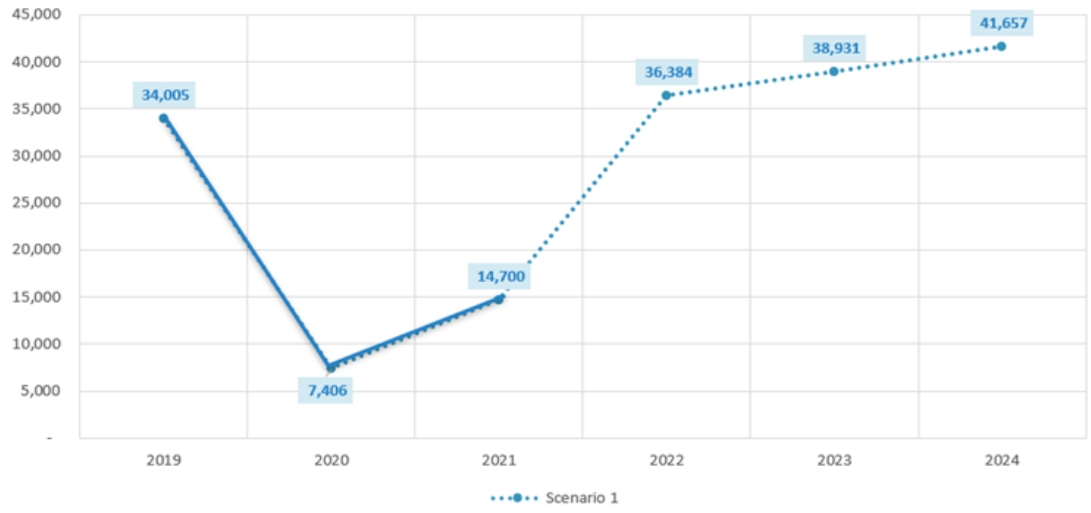
This chapter offers three possible scenarios of international tourism arrivals to Greece for the coming years, based on the variables and data studied in the previous chapter:

Figure 11. Tree possible scenarios for inbound tourism in Greece, 2022-2024.

1.3.1 Positive scenario (1)

The positive scenario hypothesizes that, from 2022 onwards, international demand in Greece recovers the same growth rate it had in 2019. Encouraged by the retained desire to travel and the removal of restrictions, travellers regain the pre-pandemic upward trend.

Figure 12. Inbound tourism in Greece 2022-2024, Positive scenario.



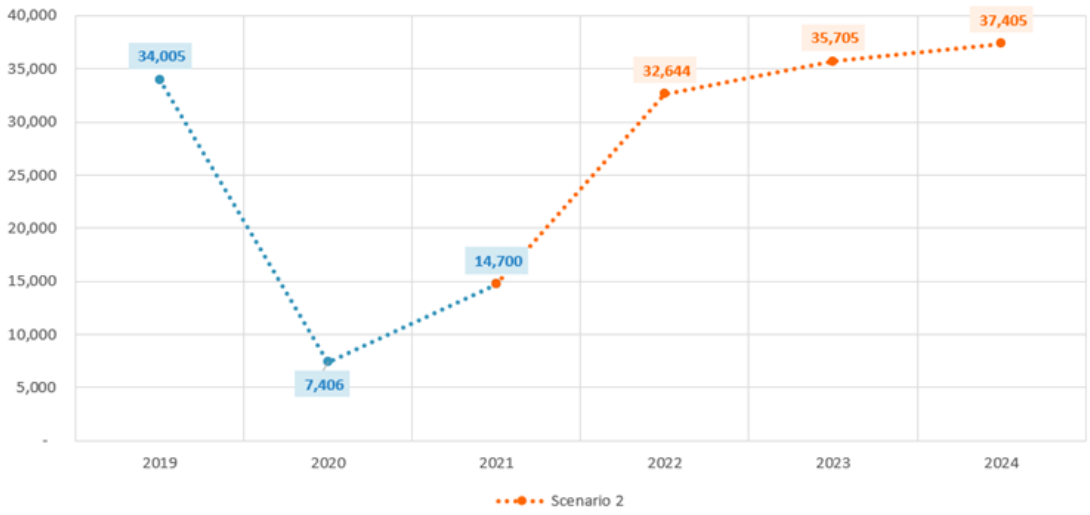
** Calculations are made by applying the CAGR produced between 2014 and 2019.*

1.3.2 Mild scenario (2)

The mild scenario puts the 2022 results at 96% of reaching the 2019 arrivals figure, a figure that is increased in 2023 by 105% and in 2024 by 110%.

This is a conservative scenario, which tries to impute current positive and negative externalities, such as declining arrivals from distant markets or rising prices, as well as the desire to travel and the end of mobility restrictions.

Figure 13. Inbound tourism in Greece 2022-2024, Mild scenario.



** The mild scenario links the recovery to the forecasts made by Eurocontrol flight forecasts for Europe, to which an above-average increase for Europe is applied, given the type of destination, Greece, and a downward corrector to account for the possible impact of price increases since April.*

1.3.3 Severe scenario (3)

The negative scenario downgrades previous forecasts based on some recent externalities:

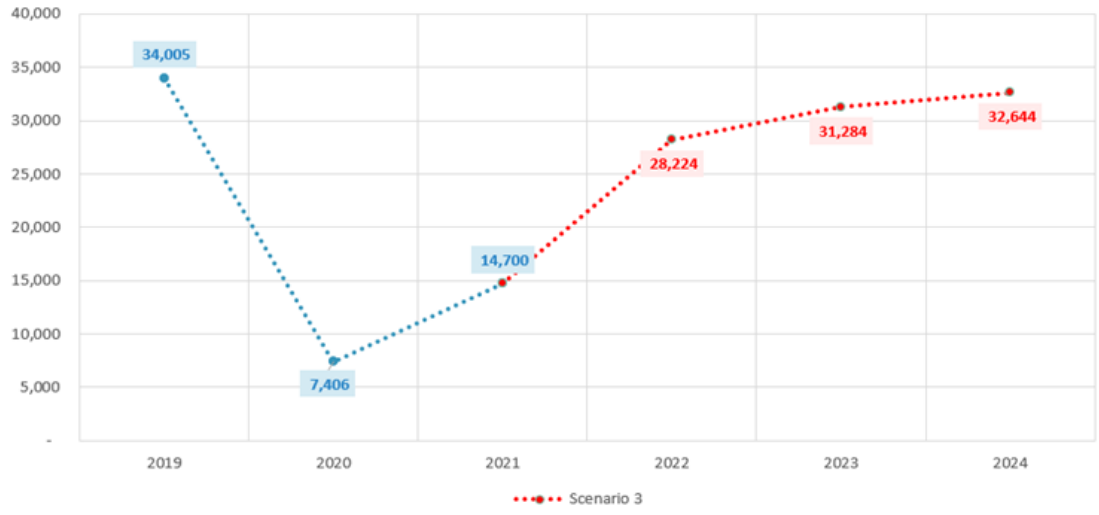
- A sharp contraction in long-distance demand markets due to the developments in the region of Black Sea. Markets such as the U.S.A. and Asian markets are very cautious about these alarms, which associates to all European destinations.
- A sharp contraction in the European markets due to the decline in purchasing power and the reduction in incomes due to the recent rising inflation.
- A sharp contraction in domestic demand, both tourist and excursionist, also caused by the significant increase in fuel prices and prices in general.

– A significant contraction in more economical demand due to a possible increase in the price of travel services, caused by the strong inflation.

This negative scenario could be worsened by the unexpected arrival of another new, more aggressive variant for which our vaccines are not prepared. This seems highly improbable, and this option has not been considered in this scenario, but the current situation of uncertainty does not allow us to rule it out.

With this outlook, 2024 would still not see the 2019 arrival figures reached. In 2022, international tourism would recover to 83%, in 2023 to 92% and in 2024 to 96%.

Figure 14. Inbound tourism in Greece 2022-2024, Severe scenario.



Tourism Impact Monitoring Guidelines

This chapter of the report suggests a number of measures aimed at improving the measurement of tourism activity in Greece. As mentioned at the beginning of the document, these are not specific measures in relation to the impact of COVID-19 or to specific scenarios, but rather measures to strengthen the national statistical system in general, to gain competitiveness, and to have a more agile and complete system that optimises the measurement of activity and its impact on the country's economy.

1.1 2.1 Governance, collaboration, and inter-institutional co-ordination: The role of countries' tourism statistics and intelligence systems in crisis management of COVID-19

Countries have faced enormous responsibilities in designing, implementing and enforcing measures to prevent the spread of the disease, while trying to protect the industry's economy and employment. Critical decisions with very direct impacts on national economies, were taken in a short period of time and faced with a highly uncertain environment, with the statistical information available from the systems created at that time. This fact has been a determining factor in the management of the crisis, then and now, with very different results for different country destinations, depending on their tourism knowledge available structures.

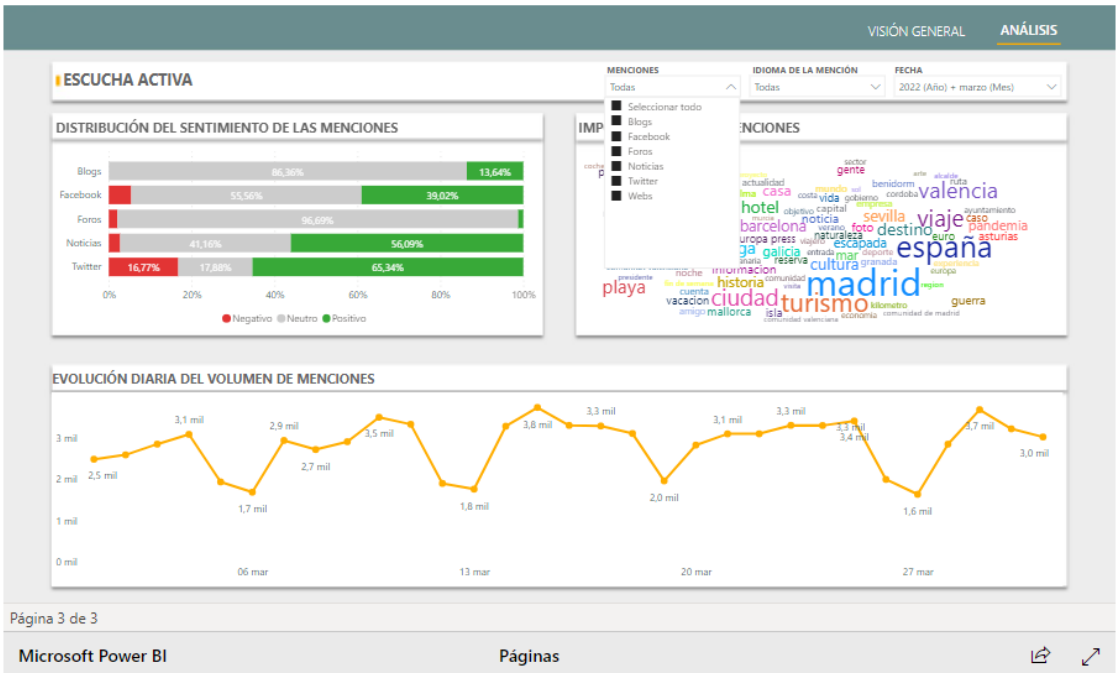
In this respect, collaboration and coordination between institutions at all levels is one of the most important lessons learned from the global health crisis. In terms of research and statistics applied to tourism, this has also been a critical issue, so that countries with a solid system for monitoring their tourism activity have had the basic information in a timely manner for better and more efficient

decision-making, as well as for measuring and evaluating in the short and long term the implications of these decisions for the economy and employment. And the greater the sophistication and depth of this information, the better the information base for monitoring the situation during and after the crisis, and for the design of strategic plans.

A solid and sophisticated system for measuring tourism in the economic territory has been an important competitive advantage for many countries. This should be considered as a critical issue in a a country like Greece, with an economy that is highly dependent on tourism. The existence in some countries, for example, of a Tourism Satellite Account, has made it possible to measure and estimate the consequences of what was happening in terms of employment and income, and its implications for the economy as a whole; as well as to estimate figures for this impact in the future, direct, indirect, and induced, depending on the situation.

Countries with market indicators on prices, social media comments, accommodation bookings or flights, have been able to assess in the short term the implications of what was happening for their industry, and have therefore been able to react with competitive results. An interesting example of this is the **active listening dashboard** developed by the Spanish Ministry of Tourism, within its data portal DATAESTUR, where other such tools are also available.

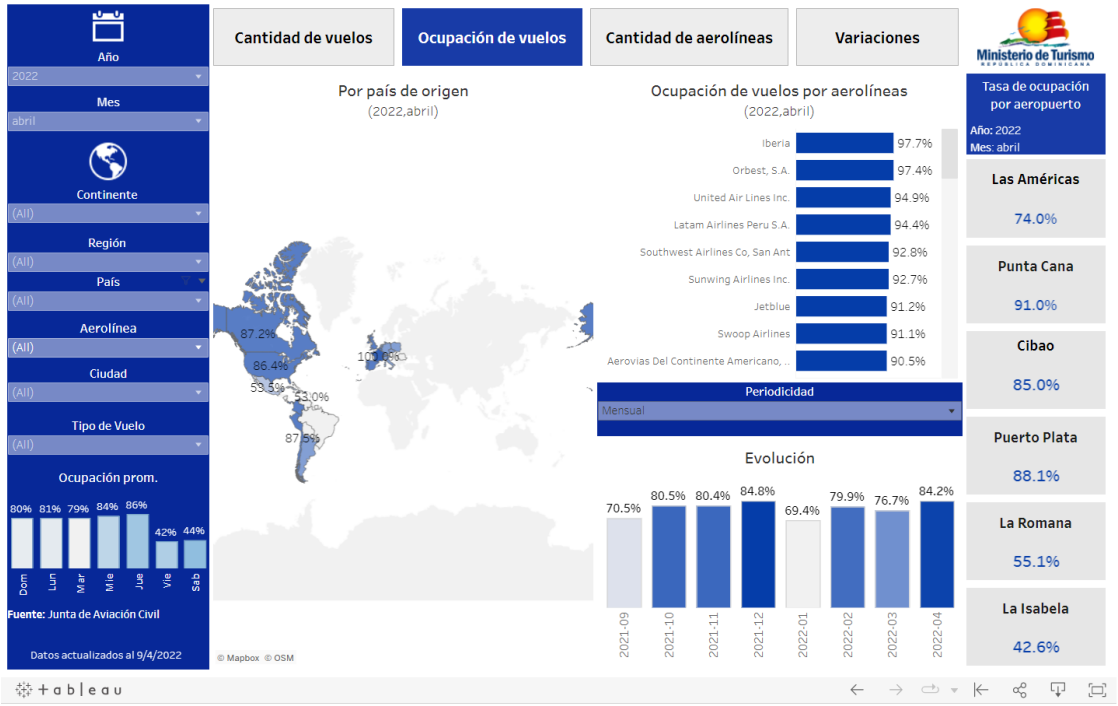
Figure 15. DATAESTUR Active Listening dashboard, Spain.



Source: DATAESTUR

Many countries also are incorporating monitoring dynamics of air capacity, changes in air routes and air demand for their main source markets. Turismo de Portugal is a recent case, among many others. They also had the capacity to analyse variations in demand according to the evolution of the pandemic and its impact on connectivity and arrivals in Portugal. In addition, other countries publish flight occupancy rates by country/city of origin, airport, month or airline; data obtained through their Civil Aviation institutions, as done by the Dominican Republic.

Figure 16. Flight occupancy rates dashboard, SITUR, Dominican Republic.



Source: SITUR – Tourism Intelligence System of Dominican Republic (https://situr.mitur.gob.do/espacio-aereo/).

Or, for example, destinations and resources with a higher level of digitalization have had the capacity to manage relevant issues to deal with the spread of the virus, such as capacity control or the management of flows through pre-booking systems to avoid overcrowding, what has led to a perception of safety and security on the part of the tourist demand. These are destinations with a high level of urban and social digitalisation.

MACAO: "In 2017, Macau, China, entered into a 4-year partnership with Alibaba Cloud, a subsidiary of Chinese tech giant Alibaba Group, to build Macau as a smart city, with the first phase focusing on cloud computing, smart transportation, smart tourism, smart health care, smart city governance, and capacity development (Alibaba Cloud 2017).

One of the first projects launched was a smart application for visitor flows that monitors crowds in real time. Powered by Alibaba Cloud's predictive analytics, the platform helps travellers plan their trips by providing real-time and predictive crowd estimates at 20 of Macau, China's most popular attractions in 4-hour, 24-hour, and 7-day increments. Based on crowd volumes, the platform assigns the location a ranking from "comfortable" to "heavily congested'' (MGTO 2019). Working hand in hand with Macau's Public Security Police Force, big data inputs to the platform include real- time arrivals figures from immigration, Amap data (Alibaba's map application), weather and events (MGTO 2019). The tourism office's big data platform is able to analyse footage of car license plates from the Public Security Police Force's traffic monitoring cameras. The Public Security Policy Force has also been using special cameras for enhanced crowd and congestion analysis during peak tourist periods. Better crowd density and visualization tools allow the force to take proactive measures before crowds become too large (Macau Daily Times 2020). This kind of data provides traveller insights on their source market and the information about them captured by immigration, while also enabling a mapping of their journey around the city. Furthermore, the tourism office's platform is interfacing with data from Amap to monitor tourism flows and places searched for and visited, providing even more dimensions to understanding how tourists interact with their destination. 18 Big Data for Better Tourism Policy, Management, and Sustainable Recovery from COVID-19."

Source: Report Big Data for Better Tourism Policy, Management, and Sustainable Recovery from COVID-19, UNWTO & ADB, 2021 (https://www.e-Unwto.org/doi/epdf/10.18111/9789284423095)

Generally, this type of information falls within the scope of the so-called Big Data. The origin and ownership of this information can be commercial or public and may or may not come from tourism-related sources.

Figure 17. Big Data Captured by Tourism Operators, Online Travel Sources, and Social Media.

Big Data Provider	Key Data Captured	Example Companies
Suppliers	Inventory, loyalty programs, bookings, user IDs, web analytics, on-platform search	Accor, Marriott, Delta Airlines, Korean Air
Global distribution systems	Inventory, loyalty programs, user IDs, on-platform search	Amadeus, Sabre, Travelport
Traditional travel agents	Inventory, loyalty programs, web analytics, on-platform search	Amex Business Travel, BCD Travel, Carlson Wagonlit, Flight Centre Travel Group
Online travel agents	Inventory across suppliers, loyalty programs, bookings, user IDs, web analytics, on-platform search, on-platform advertising, travel reviews	Expedia Group, Booking Holdings, Trip.com Group
Travel metasearch and review sites	Inventory across suppliers, user IDs, web analytics, on-platform search, on-platform advertising, travel reviews	Skyscanner, Kayak, Tripadvisor
Search and social media marketing platforms	Inventory across suppliers, user IDs, web analytics, on-platform search, on-platform advertising, travel reviews, non-travel related search, non-travel related advertising, non-travel related purchasing, non-travel related reviews	Google, Facebook
Operations software	Asset management, human resources, web analytics, reward schemes	Ramco Aviation, Amadeus Altéa
Business Intelligence[a]	Social media analysis, travel review analysis	TCI Research, Cirium, ForwardKeys, STR, Rainmaker, Mabrian
Travel marketing platforms	Web analytics, user IDs	Sojem, Travel Audience, Adara

[a] Commonly has access to any other datasets by way of commercial relationships with other data providers.
Source: Berrigan (2019).

Source: Report BIG DATA FOR BETTER TOURISM POLICY, MANAGEMENT, AND SUSTAINABLE RECOVERY FROM COVID-19, UNWTO & ADB, 2021 (https://www.e-unwto.org/doi/epdf/10.18111/9789284423095)

Figure 18. Key Big Data Captured by Non-Tourism Specific Providers.

Big Data Type	Key Data Captured	Example Companies or Sources
Telecommunication companies	Calls, mobile data, geotagging	Mobile network providers (various)
Financial services and credit card	Transaction amount, transaction location, transaction type (products), User ID, volume of transactions	Mastercard, Visa
Retail	Products purchased, volume of transactions, location of purchase	Mastercard, Visa
Smart cities sensors	Car parking, noise monitoring, water usage, traffic surveillance, crowd surveillance, facial recognition, electricity use, and air pollution reporting	Cisco, Schneider Electric, Siemens, Microsoft, Hitachi, Huawei, Ericsson, Toshiba, and Oracle[a]
Climate change	Air quality, carbon emissions, water pollution, deforestation, coastal or reef degradation	Multiple government ministries, environment-focused NGOs, the UN, Smart Cities Sensors
Geospatial data	Location, attribute, and temporal information	Satellite imagery and elevation data at 30 meter resolution are available via Landsat
Health	Patient data, COVID-19 test timing and result	Hospitals and clinics, public health government agencies, CommonPass or other health passports
SuperApps	Communications, movement, food, social, financial, and retail	WeChat, Line, Gojek, Grab, Meituan and Dianping

NGO = nongovernment organization, UN = United Nations.
[a] Top 10 companies helping build smart cities around the world.
Sources: Bremner (2019) and Smart City Hub. https://smartcityhub.com/technology-innnovation/the-top-ten-companies-that-build-smart-cities.

Source: Report BIG DATA FOR BETTER TOURISM POLICY, MANAGEMENT, AND SUSTAINABLE RECOVERY FROM COVID-19, UNWTO & ADB, 2021 (https://www.e-unwto.org/doi/epdf/10.18111/9789284423095)

a. Inter-institutional collaboration and communication with the sector:

In addition to the measurement system, there are two other aspects that have proved to be fundamental. One of them is to have a network of inter-institutional collaboration between the agents involved in measuring tourism, both on the demand side and on the supply side. This has made it possible to coordinate the production of the information required, in time and form, as well as to jointly develop specific crisis cabinets to monitor and evaluate the evolution of key variables. These collaborations have led to the establishment of multidisciplinary expert panels, or recovery tracker-type panels, which have been essential for monitoring the situation and working together.

And the second important aspect has to do with communication. The generation of all this knowledge has no operational implications if it is not able to be communicated to and shared with the tourism ecosystem, so that business or destination managers can use the information for their decision-making. Countries that already had a communication network and established forums have therefore been able to better communicate the state of affairs, strategies and opportunities to the sector, which has been an advantage by aligning the positioning of agents and institutions. It is necessary that the results of the institutional effort in statistical production, with all that this entails, are properly transferred in time and form to society in general and particularly to the tourism ecosystem, which has the capacity to take advantage of this knowledge by applying it in its management.

This approach involves actions such as:

- To have an attractive and intuitive data visualisation and analysis panel.
- To have an annual programme of technical meetings with the sector to raise awareness of the results and disseminate the operational applications of statistical production.
- To transfer the relevant results to the general and specialised media.

b. Recommendations for becoming more resilient and competitive in the future on tourism statistics governance issues:

I. The Ministry of Tourism leading the production of tourism knowledge

Statistical information on tourism and the specific studies carried out are currently scattered in the hands of different public and private institutions. Each

institution, public or private, that produces primary data and information, publishes or makes this information available from its website, which is not operational if the reader is not an expert in the Greek ecosystem in this sense. On the other hand, these data and studies, many times, are presented in a disorganized way and in the form of "cold data", without the elaboration of action-oriented reports or interpretations. There is a lack of interpretation of data that could lead to concrete indications and recommendations on how to move ahead or what possible decisions entail in terms of outcomes and challenges.

The statistics and studies currently produced by the Bank of Greece, ELSTAT or the Ministry of Tourism are widely dispersed on institutional websites and coexist with private projects or those of other sectoral institutions, so that all the knowledge generated is far removed from the business tourism sphere, and is only accessible from the expert sphere, linked to research, or from the internal institutional sphere, which handles these statistics.

Currently, the reference organization in the production of tourism intelligence and its communication is the Institute of SETE-INSETE, an institute on the initiative of the Greek Tourism Confederation (SETE). They analyse data and develop indicators from existing statistical sources and market data purchased from specialized suppliers. The Ministry of Tourism, directly or indirectly (through ELSTAT, for example) does not lead the production and guidelines around the tourism knowledge generated that should guide the decisions and performance of domestic destinations and industry.

It is common in such a mature tourist destination as Greece, that there are a significant number of agents producing data and sectoral executive reports. However, it should be an institution such as the Ministry of Tourism who should

lead this situation, as information and data-driven policy producer or through collaborations and agreements with the current agents.

II. Action-oriented socialisation of results

The knowledge generated by ELSTAT, the Bank of Greece, the Ministry of Tourism, institutes such as INSETE or the Hellenic Chamber of Hotels require a different approach to data on the sector, so that this knowledge is transferred into recommendations, guidelines, decisions, and actions. It is equally important to have an adequate statistical and intelligence system in place, and to be able to communicate the results in a **timely** and appropriate manner to the actors who will use it. It will be of no use to have relevant data and information if it is not able to convey it to decision-makers, key stakeholders, and planners in a time horizon adjusted to the dynamism of this sector, and in a language adapted to each professional audience.

In terms of tourism statistics and knowledge, the Ministry of Tourism occasionally holds some meetings, but these important tasks should be part of an established plan, adapted to the needs, and which will boost the sector's competitive capacity.

Actions Suggested:

Based on the above points, the following actions are recommended:

2.1.1 Restructure and redesign an approach for the leadership of the production and collection of Greek tourism statistics and knowledge from the Ministry of Tourism, determining what the short- and long-term needs are, so that the institutions involved can adapt technically.

2.1.2 Carry out the necessary agreements in this restructuring with the rest of the public and private agents involved in statistical production and research.

2.1.3 Bringing together statistical and market information in a single online repository, a Tourism Integrated Statistical System led by the ministry.

The MoT are currently in the process of launching a public tender to allocate this project, a microsite that will gather and display all the available statistical data from various sources, as an info hub at the site of the Ministry.

2.1.4 This new approach will require investment to reinforce the current structure of human resources and means available in the ministerial departments involved, and in ELSTAT.

2.1.5 Lead the annual agenda of tourism research needs, based on the real needs detected in the sector, so that the Ministry can be more efficient and optimize budgets.

2.1.6 Develop an annual communication plan for the socialization of results among the tourism sector and resource and destination managers, consisting of:

- *The production of a regular newsletter with strategic and management-focused information.*
- *Development of workshops and forums focused on the application of the data and knowledge generated.*
- *Awareness-raising towards statistical production to encourage participation in data provision.*

1.2 The need to measure the sustainability of tourism

a. Sustainable development of tourism is already underway and statistical systems must adapt

The severe impact of the COVID-19 pandemic on the wider tourism economy has forced the tourism sector to emerge in a more sustainable, innovative and resilient way to build back better, an effort recognized and demanded by the demand. It is a fact that the development of sustainable tourism production structures guarantees greater resilience and positive performance in the face of crisis situations such as those experienced.

The Hellenic Government, aware of this reality, aspires for the country to become a leading reference in sustainable tourism through the design of a comprehensive tourism growth model under this premise. This is set out in its National Strategic Plan for the Development of Tourism 2021 - 2030. From the plan, sustainability is proposed as a fundamental strategy for the recovery of the sector after the pandemic, and as a differentiating competitive element for the future of this industry.

Within this approach, various initiatives have recently been carried out, both business and public, the latter of local, regional or national scope, which will require a measurement system to evaluate their impact, the monitoring of their achievements and their competitive positioning with respect to other destinations. This is the case of the ongoing project NATIONAL OBSERVATORY OF SUSTAINABLE TOURISM DEVELOPMENT, led from the Ministry of Tourism of Greece, Directorate of Research, Department of Tourism Statistics, which is expected to be completed by the end of 2023.

b. The implementation of a methodological framework that ensures quality, robustness and international comparability

There are currently numerous systems of indicators and tools in this regard. In any case, this report recommends that the system adopted be subject to the international reference framework developed by the United Nations, guaranteeing the consistency of the system and the comparability of results in the international framework. With the support of the United Nations Statistics Division (UNSD), UNWTO has launched the initiative Towards a Statistical Framework for Measuring Tourism Sustainability (MTS). The MTS provides all countries of the world with a common framework for measuring the impacts and contributions of tourism on the economy, society, and the environment, both at national and sub-national levels. This valuable guidance tool enables countries to produce credible, comparable and integrated data to better guide decisions and policies with respect to sustainable tourism, including the Sustainable Development Goals:

- The MST is a statistical framework that provides the main concepts, definitions, classifications, tables, accounts and indicators that are comparable overtime, between countries and across other economic sectors.

- The statistical framework for MST adopts a "nested systems" approach: where the economic system is embedded within a social context which in turn sits within an environmental system. This is the "economy - in society - in nature" perspective.

- The statistical framework for MST supports the organization of data at sub-national, national and global scales in view of the important inter-

linkages between these scales and also in view of the significance of the local scale in understanding the sustainability of tourism.

- MST can further support the credibility, comparability and outreach of various measurement and monitoring programmes pertaining to sustainable tourism, including the derivation of ETIS indicators. MST will provide the statistical structures and definitions that can underpin the measurement of these indicators.

- Also, the MST framework is aligned with The European Tourism Indicator System (ETIS) for Sustainable Management at the Destination Level was developed as a measurement instrument for the European Commission's Study on the Feasibility of a European Tourism Indicator System for Sustainable Management at the Destination Level. Its aim is to provide "a tourism system of indicators for destinations to use on a voluntary basis", and a "guide to policy makers and other destination stakeholders for the improved management of tourism destinations[6].

Actions Suggested:

Based on the above points, the following actions are recommended:

2.2.1 Develop the National Observatory of Sustainable Tourism Development from the international methodological framework, developed by the United Nations-UNWTO, and aligned with the National Tourism Statistical System.

[6] *European Tourism Indicators System for sustainable destination management – ETIS web with documentation, toolkit and case studies: https://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_es*

2.2.2 Lead and coordinate from the ministry the different local initiatives in this regard, which are likely to emerge as a result of the EU recovery funds, so that the country-system is aligned.

1.3 Boosting the digitisation of statistical production processes and analysis

a. The pandemic has accelerated the digitisation of tourism businesses and stakeholders.

The changes in social and business behaviour brought about by the advent of the pandemic have driven the process of digitization across the board, as never before, and also in the tourism sector, beyond sub-sectors such as hotel accommodation or distribution, which are already highly digitized. This adaptive phenomenon is here to stay and offers many opportunities for improvement in the field of tourism measurement. On the one hand, because a more digital ecosystem is a system that generates a large amount of data thatcan be studied or incorporated into our measurements (digital flow counters, ticketing, booking, different digital interactions, payment systems, mobility studies through mobile operators, digital registers, and others). On the other hand, it offers the possibility of developing its own projects for the management, analysis and dissemination of results.

b. Areas for improvement through digitization in the tourism activity measurement

During the analysis and the meetings with the different agents, a series of gaps have been detected that can be addressed through the digitalization of several processes:

- Sometimes too "manual" production processes increase data processing times and publication of results, as well as the element of the human error.

- Out-of-date supply registers (MITE and the registers mentioned in point 2.4.2. below), or registers that are updated too often, which, by functioning as a reference population of study, may be producing inaccurate results for the object of study.

- There is currently no digital data repository by the public administration that allows browsing and analysis of the information.

Actions Suggested:

Based on the above points, the following actions are recommended:

2.3.1 Conduct an analysis of the current data collection processes of the main tourism operations (specially ELSTAT) and incorporate more and better digital data collection and analysis tools, with the aim of reducing time taken to publish and socialise data, a fundamental issue in such a dynamic sector as tourism.

There are currently significant delays in the production and publication of most tourism statistics produced by ELSTAT. Although the current deadlines are within the quality margins established by the European Union, they are margins that are not very operative for decision-making in the public and private sectors.

It is recommended that the current processes of data collection, processing and publication be reviewed, with the aim of reducing these

timescales to within two months (e.g. publication of February data in early April), as in other direct competitor destinations.[7]

On the basis of an in-depth analysis, it can be established whether there is a need to reinforce the human resources dedicated to these tasks, to invest in new technologies or to take measures to increase the response rate of informants.

2.3.2 Encourage the correct updating of administrative registers, some of which currently have problems of updating that affect the quality of the data obtained (such as the MITE register of the MoT), implementing digital data feed self-managed by the supply side and cross-checking results by web scraping from other sources.

Updating the register is a fundamental action that requires a specific effort.

It is suggested that this process be digitalised as much as possible and that a specific awareness-raising campaign be addressed to establishments/companies, so that they are obliged to upload their data via a free online form. It is also compulsory for the user to update the data if they change (accommodation places, address, cessation of operation or other). It is recommended to carry out an annual campaign to encourage establishments to update this data. Increase the response rate to current questionnaires, with an impact on the quality and timeliness of statistical output.

[7] *By way of reference, attached is a link to the methodology used by the Spanish Statistics Institute (INE) for the Hotel Establishment Survey, also a monthly census survey.:* https://www.ine.es/en/daco/daco42/ocuphotel/meto_eoh_en.pdf

Sometimes the delay in the production and socialisation of results is due to a poor response rate from informants. It would be necessary to go into more detail through a future project focuses on this, but nevertheless, this report provides below several suggestions to be implemented:

- In the case of the accommodation survey: standardisation and digitisation of the guest book.
- Review the usability of the digital system (application "Xenios Zeus") and data entry requirements in order to standardise its use among the study units.
- Encouraging online data entry through the hotel trade associations.
- Revision of the statistical legal framework and rigorous application of sanctions.
- Possible considerations and incentives for the cooperating informant, as: scoring on helplines or membership of various programmes, financial assistance for those informants who fill in the online form.

2.2.3 Develop the ministry's own data repository system and Tourism Intelligence System, as its own working tool, for the private sector, and as an institutional reference for the country.

1.4 Incorporation of new statistical operations for the study and monitoring of priority tourism segments

a. A number of critical tourism segments in Greece, would require statistical study

When addressing the impact of the pandemic by tourism segments in Greece, it is noted that the Greek system does not have statistical operations aimed at the study of tourism segments such as cultural tourism, nautical tourism or coastal tourism, for example, mature segments that are core parts of the country's tourism offer. The Ministry or other institutions carry out specific studies focusing on certain segments, but it is recommended that the study of some of these segments, such as those mentioned above, be incorporated into the national statistical system, due to their relevance and dimensions in terms of economic and social impact.

Identified statistical information related to tourism segments:

- data obtained from cruises by the Bank of Greece
- the development of experiences such as the Aegean Sustainable Tourism Observatory (part of the UNWTO INSTO Network)
- data for museums and archaeological sites compiled by ELSTAT and provided by Organisation for the Management and Development of Cultural Venues (ODAP)
- working forums on nautical tourism and ad hoc studies on other segments carried out by the MoT

However, these segments, together with cultural tourism, are considered critical segments in the economy, strategic in competitive terms and important due to

their volume of demand and would require data collection that would allow them to be monitored.

This report defines "statistical operation" as the set of activities, including preparatory activities, that lead to obtaining and/or disseminating statistical results on a specific sector or subject or territory. The development of these operations will require specific data collection on the productive part involved, as well as on demand.

b. Measuring critical segments to gain competitiveness

These segments are considered to be critical for tourism as a whole, and the objectives of addressing their systematic measurement would be:

- The measurement of the volume, characteristics and economic and employment impact of these segments should provide data that will allow for a better design of aspects such as the regulatory framework of the activity, the development of lines of aid or competitiveness programmes aimed at the business fabric.

- The results should provide a quantitative and objective description of an activity for which, in many cases, there are other administrations with decision-making powers that will directly affect tourism results (e.g., Ministry of Culture or local administrations).

- Increased knowledge on critical or strategic tourism segments for the industry in the country will allow better work on measures to increase its competitiveness or help diversify the country's offer.

Actions Suggested:

Based on the above points, the following actions are recommended:

1.4.1 Identify the suppliers from administrative registers.

Generally, companies and establishments must carry out different administrative processes with local and national administrations: registration to operate, payment of fees, taxes, and others.

These processes should be identified, their digitisation promoted, and economic activities identified on the basis of the 4-digit ISIC (Rev. 4) or NACE codification[8]. Categorize the tourism characteristic activities (tourism industries) in a standard way that allows for international comparability. This is fundamental for drawing up a Tourism Satellite Account which can support policy, decision making and analysis.

1.4.2 In the case of demand, it´s recommended approaching it from the production side (quantitatively), as well as through the introduction of new variables of analysis in existing surveys, so that their results can be linked to the analysis of these segments. This is the case, for example, of surveys such as:

- *Survey on Qualitative Characteristics of Resident Tourists – Vacation Survey, conducted by ELSTAT,*
- *Household Budget Survey (ELSTAT) or*
- *The Border Survey, conducted by Bank of Greece*

8 *UNSTAT: https://unstats.un.org/unsd/classifications/Family/Detail/1075*

1.5 Tourism Satellite Account for Greece

The project of compiling a Tourism Satellite Account for Greece is considered a fundamental objective. This synthesis statistic, consisting of a set of accounts and tables, based on the methodological principles of national accounts, presents the different economic parameters of tourism in the reference economic area, for a given reference date. It basically comprises three types of elements:

- Accounts and supply tables, which attempt to characterize the production and cost structure of tourism enterprises.
- Demand tables, which try to characterize, from an economic point of view, the different types of tourists, national versus international tourism, the type of goods and services demanded, etc.
- Tables that interrelate supply and demand, allowing for integrated measurements of the contribution of tourism to the economy through macro variables such as GDP, production, or employment.

Greece already conducted a pilot exercise in 2017 (base year 2015). The project is currently in progress and is expected to be available by the end of 2023, but as mentioned it in the report, reiterating the importance of its achievement, especially in the matter at hand, as a fundamental tool in the calculation and estimation of total economic impacts (direct, indirect, and induced). Aware of the technical and institutional challenge in its construction, it is nevertheless a vital competitive element in a country where tourism has critical economic dimensions for the country and will require investment in ELSTAT to procure the necessary economic and human resources.

The pilot experience in 2017 already identified gaps for its construction, among others:

- TSA needs a broader portfolio of tourism statistics than the current one provided by ELSTAT.
- An input from national accounts.
- The collaboration of Bank of Greece with respect to the data from the Frontier Survey and the Balance of Payments.
- The update and correct management of the register of touristic enterprises from the Ministry of Tourism.

Actions Suggested:

Based on the above points, the following actions are recommended:

1.5.1 Prioritise and push forward the development of identified outstanding actions to complete the TSA, already collected in the outputs of the pilot experience.

1.6 Deepen the identification and measurement of the productive side

Regardless of whether this task is a preliminary step included in the TSA project, is suggested to prioritize it. Identify in the registers the population of tourism industries will allow us to measure crucial aspects such as employment or the economic performance of the sector.

Not all the total activity of the tourism industries is linked to tourism demand, but the results are also the result of resident consumption, in different proportions according to industries, places and season. But, the measurement of the industry as a whole provides very relevant information with a wide range of interrelation possibilities. Knowing the impact associated with a crisis in each of these industries allows us to understand and foresee the implications of decisions on matters such as regulation, lines of aid or changes in the operation of these services.

Actions Suggested:

1.6.1 *Try to compile the universe under study on the basis of a 4-digit classification:*

1. *Accommodation for visitors*
2. *Food and beverage serving activities*
3. *Railway passenger transport*
4. *Road passenger transport*
5. *Water passenger transport*
6. *Air passenger transport*
7. *Transport equipment rental*
8. *Travel agencies and other reservation services activities*

9. *Cultural activities*
10. *Sports and recreational activities*
11. *Retail trade of country-specific tourism characteristic goods*
12. *Other country-specific tourism characteristic activities*

1.7 Tourism Business Panel

The agile pace of decision-making and operational changes in relation to the management of the pandemic crisis often required the assessment of certain issues related to the productive side of tourism, information that was not available. Assessing the impact of the crisis on tourism enterprises, or the impact of governmental measures taken to mitigate the negative effects on the sector's economy, would require a fast and agile bilateral information system, which has not been available in most countries. This type of action has been possible in some cases through the business associations, contacting partners through their sectoral organisations. However, this is not an accessible operation for the public administration, and the results are not representative.

Crisis management and decision making would require an established system of consultation between public authorities and the business sector beforehand, so that appropriate consultations can be established, and results monitored in the short term. In connection with the previous measure for the identification of tourism industries, it is suggested that a consultation panel be set up on the basis of this register. This would be a representative panel for each of the industries selected (accommodation, tourism activities, cultural sector, rental car, and others), to be consulted periodically, and online, in order to obtain information in the short term.

Actions Suggested:

2.7.1 The design of a representative panel for each branch of the tourism industry. This design can be carried out in several ways (through business associations or by online subscription until the sample is complete).

2.7.2 To ensure the appropriate level of response, it is recommended to associate benefits to participation, such as sharing results, access to professional forums or obtaining some type of seal of distinction that the company can use in its communication.

2.7.3 It is suggested that the panel be used for the construction of a continuous synthetic business confidence index, with a battery of associated short-term questions, which would change depending on the needs at the time (to assess the effectiveness of a government measure, or to provide specific data on employment, for example).

1.8 Domestic Tourism panel

The management of a crisis of the magnitude of COVID-19 would have required taking the pulse of demand with relatively agile results. Along the same lines as expressed in the previous point, the creation of a domestic tourism demand panel is suggested, mainly for the following reasons:

- It is believed that the important role played by the national client in the destinations, in the face of the loss of international visitors, is an asset that should be retained and maintained over time, to help compensate for the loss of international tourism due to the pandemic.

- Other factors that will slow down the recovery of international demand, such as the war in Ukraine and the sharp increase in inflation in the markets of origin, have also appeared recently. All this suggests a reduction in international travel.

The current ELSTAT statistical operation aimed at studying and characterizing the tourism demand of Greek residents - Qualitative Characteristics of resident tourists (Vacation Survey) - has an annual periodicity and is of vital use for various calculations, but it is not an agile tool for rapid assessment of other issues. However, having a panel to study some aspects of local demand will allow the Greek government to provide important market information for the sector with other objectives.

Actions Suggested:

2.8.1. The design of a representative panel of domestic touristic demand.

It can be done ad hoc or contracted to third parties.

1.8.2 It is suggested that the questionnaire to the panel ask about issues such as: intention to travel in the next three months inside Greece (with at least one overnight stay, and with a touristic main purpose of travel), number of trips, destinations inside Greece, travel segment (MICE, seaside, winter sports, cultural, and others) and estimated budget per person or for the travel group (indicating number of persons).

1.9 Review and update of the Ministry of Tourism's Tourism Business Register (MITE)

This register constitutes a basic administrative register of the countries. The correct compilation and updating of this register enable the respective actors to identify the size and characteristics of the tourism industry ecosystem, and, at the same time, constitutes the administrative register of the tourism industry.

This register is currently not representative, so it does not cover the study population of analysis, nor is it up to date. This is a serious problem that must be addressed as it hampers the statistical work of ELSTAT or the Bank of Greece.

The Registry of Tourism Enterprises for Tourism Accommodations, is updated until 06.06.2017, date of compliance with the regime of notification of the commencement of operation or amendment of tourism accommodations, via the electronic platform https://notifybusiness.gov.gr of the General Secretariat for Industry, pursuant to the provisions of Law 4442/2016. Within this framework, the Regional Tourism Offices have managed to correlate the records of the notifications with the corresponding ones of the Registry until 18/3/2019.

If there is any change in data, companies are obliged to declare it in the competent RTO. Then, the employee enters those changes (new data) into the system which is automatically updated.

Therefore, the provision of data through the Registry of Tourism Enterprises is limited and does not fully depict the tourism accommodations currently operating in Greece.

In addition, the register shows data for “companies”, and not for “establishments”, a necessary input for statistical design.

Actions Suggested:

2.9.1. *Review and improvement of the procedure for compiling this register as a basic tool for statistical analysis.*

2.9.2. Review and improvement of the procedure for updating this register. A quarterly update is recommended.

2.9.3. It is recommended to digitise these processes as much as possible and to link them to measures similar to those outlined in chapter 2.3 on increasing the response rate.

1.10 New variables incorporation in the survey "Arrivals and nights spent at hotels and similar accommodations" (ELSTAT)

Data on arrivals and nights spent at hotels, similar establishments and tourist campsites are collected from this monthly census survey. Each establishment fills in a questionnaire, for every month that it is in operation. It is mandatory for all hotels, similar establishments and tourist campsites to participate in the survey. This is a census survey and is conducted on a monthly basis. The data are compiled through the collection and processing of the relevant data submitted, via a specific questionnaire, by hotels, similar establishments and tourist campsites for each month of operation. The questionnaires are mostly submitted electronically, via ELSTAT's electronic application "Xenios Zeus" or, alternatively, for establishments that this is not possible, in paper form. The survey is based on the Statistical Register of hotels, similar establishments and tourist campsites, which is updated during the year, so that data refer to the actual number of accommodation establishments and campsites that are in operation.

This chapter suggests a number of new or complementary variables to improve the quality and competitiveness of results, as follows:

Actions Suggested:

2.10.1. *Incorporate the request for employment data in the questionnaire.*

Employment data can also be requested by sex and category of employment (temporary or permanent).

2.10.2. Collect occupancy data by rooms, and not only by beds.

This information will allow us to better evaluate the occupancy data obtained (as the accommodation sells rooms), as well as to calculate profitability ratios such as ADR or RevPAR.

1.10.3 Collect ADR (Average Daily Rates) data.

It is a variable of high interest for the competitive and profitability analysis of the hotel sector, as well as necessary for the calculation of indicators such as RevPAR (Revenue Per Available Room), the most important metric used in the hotel industry to assess the financial performance of an establishment or a chain.

1.11 Proposed measures: summary table

The table below shows the measures developed in the chapter and described above, identifying also the suggested prioritisation:

- Very Urgent: measures that the MoT and its stakeholder should address imminently;
- Urgent: measures that are important to be taken on board and implemented to ensure considerable improvement of the monitoring process;
- Advisable: measures and actions that will be very beneficial and complement the efforts of all parties.

Table 1: Prioritisation Matrix of the Suggested Measures

COD	Suggested measures	Priority
2.1	***Governance, collaboration and inter-institutional co-ordination: The role of countries' tourism statistics and intelligence systems in crisis management of COVID-19***	
2.2.1	*Restructure and redesign an approach for the leadership of the production and collection of Greek tourism statistics and knowledge from the Ministry of Tourism, determining what the short- and long-term needs are, so that the institutions involved can adapt technically.*	Very Urgent
2.2.2	*Carry out the necessary agreements in this restructuring with the rest of the public and private agents involved in statistical production and research.*	Very Urgent
2.2.3	*Bringing together statistical and market information in a single online repository, a Tourism Integrated Statistical System led by the ministry.*	Very Urgent
2.2.4	*This new approach will require investment to reinforce the current structure of human resources and means available in the ministerial departments involved, and also in ELSTAT.*	Urgent

2.2.5	*Lead the annual agenda of tourism research needs, based on the real needs detected in the sector, so that the Ministry can be more efficient and optimize budgets.*	Urgent
2.2.6	*Develop an annual communication plan for the socialization of results among the tourism sector and resource and destination managers.*	Urgent
2.2	**The need to measure the sustainability of tourism**	
2.2.1	*Develop the National Observatory of Sustainable Tourism Development from the international methodological framework, developed by the United Nations-UNWTO, and aligned with the National Tourism Statistical System.*	Urgent
2.2.2	*Lead and coordinate from the ministry the different local initiatives in this regard, which are likely to emerge as a result of the EU recovery funds, so that the country-system is aligned.*	Advisable
2.3	**Boosting the digitisation of statistical production processes and analysis**	
2.3.1	*Conduct an analysis of the current data collection processes of the main tourism operations (specially ELSTAT) and incorporate more and better digital data collection and analysis tools, with the aim of reducing time taken to publish and socialise data, a fundamental issue in such a dynamic sector as tourism.*	Very Urgent
2.3.2	*Encourage the correct updating of administrative registers, some of which currently have problems of updating that affect the quality of the data obtained (such as the MITE register of the MoT), implementing digital data feed self-managed by the supply side and cross-checking results by web scraping from other sources.*	Very Urgent
2.3.3	*Develop the ministry's own data repository system and Tourism Intelligence System, as its own working tool, for the private sector, and as an institutional reference for the country.*	Very Urgent
2.4	**Incorporation of new statistical operations for the study and monitoring of priority tourism segments**	
2.4.1.	*Identify the suppliers from administrative registers.*	Very Urgent
2.4.2.	*In the case of demand, it´s recommend approaching it from the production side (quantitatively), as well as through the introduction of new variables of analysis in existing surveys, so that their results can be linked to the analysis of these segments.*	Advisable
2.5	**Tourism Satellite Account for Greece**	

2.5.1.	*Prioritise and push forward the development of identified outstanding actions to complete the TSA, already collected in the outputs of the pilot experience. [include details in a footnote on that pilot work]*	Very Urgent
2.6	**Deepen the identification and measurement of the productive side**	
2.6.1.	*Try to compile the universe under study on the basis of a 4-digit classification.*	Very Urgent
2.7	**Tourism Business Panel**	
2.7.1.	*The design of a representative panel for each branch of the tourism industry. This design can be carried out in several ways (through business associations or by online subscription until the sample is complete).*	Advisable
2.7.2.	*To ensure the appropriate level of response, it is recommended to associate benefits to participation, such as sharing results, access to professional forums or obtaining some type of seal of distinction that the company can use in its communication.*	Advisable
2.7.3.	*It is suggested that the panel be used for the construction of a continuous synthetic business confidence index, with a battery of associated short-term questions, which would change depending on the needs at the time (to assess the effectiveness of a government measure, or to provide specific data on employment, for example).*	Advisable
2.8	**Domestic Tourism panel**	
2.8.1.	*The design of a representative panel of domestic touristic demand.*	Advisable
2.8.2.	*It is suggested that the questionnaire to the panel asks about issues such as: intention to travel in the next three months inside Greece (with at least one overnight stay, and with a touristic main purpose of travel), number of trips, destinations inside Greece, travel segment (MICE, seaside, winter sports, cultural, and others) and estimated budget per person or for the travel group (indicating number of persons).*	Advisable
2.9	**Review and update of the Ministry of Tourism's Tourism Business Register (MITE)**	
2.9.1.	*Review and improvement of the procedure for compiling this register as a basic tool for statistical analysis*	Very Urgent
2.9.2.	*It is recommended to digitise these processes as much as possible and to link them to measures similar to those outlined in chapter 2.3 on increasing the response rate.*	Very Urgent

2.10	**New variables incorporation in the survey "Arrivals and nights spent at hotels and similar accommodations" (ELSTAT)**	
2.10.1.	*Incorporate the request for employment data in the questionnaire.*	Urgent
2.10.2.	*Collect occupancy data by rooms, and not only by beds.*	Urgent
2.10.3.	*Collect ADR (Average Daily Rates) data (to compile also RevPAR indicator).*	Advisable