



CYPRUS
SUSTAINABLE
TOURISM
INITIATIVE

IMPROVED PREDICTABILITY OF EXTREMES OVER THE
MEDITERRANEAN FROM SEASONAL TO DECADAL TIMESCALES

Climate Change & Tourism

PHILIPPOS DROUSIOTIS
EXECUTIVE CHAIRMAN
CYPRUS SUSTAINABLE TOURISM INITIATIVE (CSTI)

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EUROPEAN CLIMATE, INFRASTRUCTURE AND
ENVIRONMENT EXECUTIVE AGENCY (CINEA)

A photograph of a bright blue sky with large, fluffy white clouds. In the center of the image, the chemical formula 'CO2' is formed by three distinct, ring-like clouds. The 'C' and the first 'O' are large and circular, while the '2' is smaller and positioned below the second 'O'.

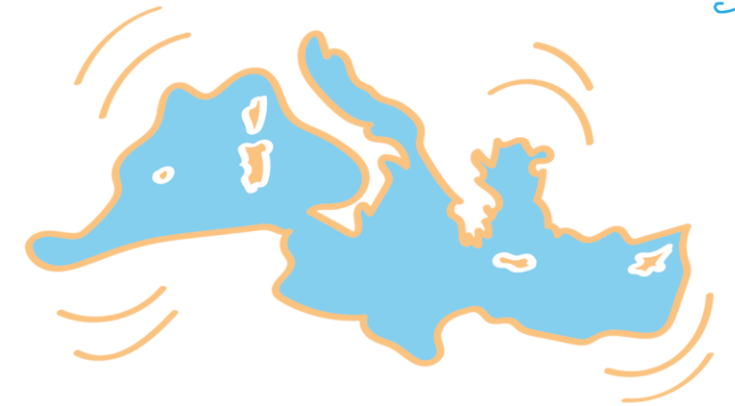
CO₂

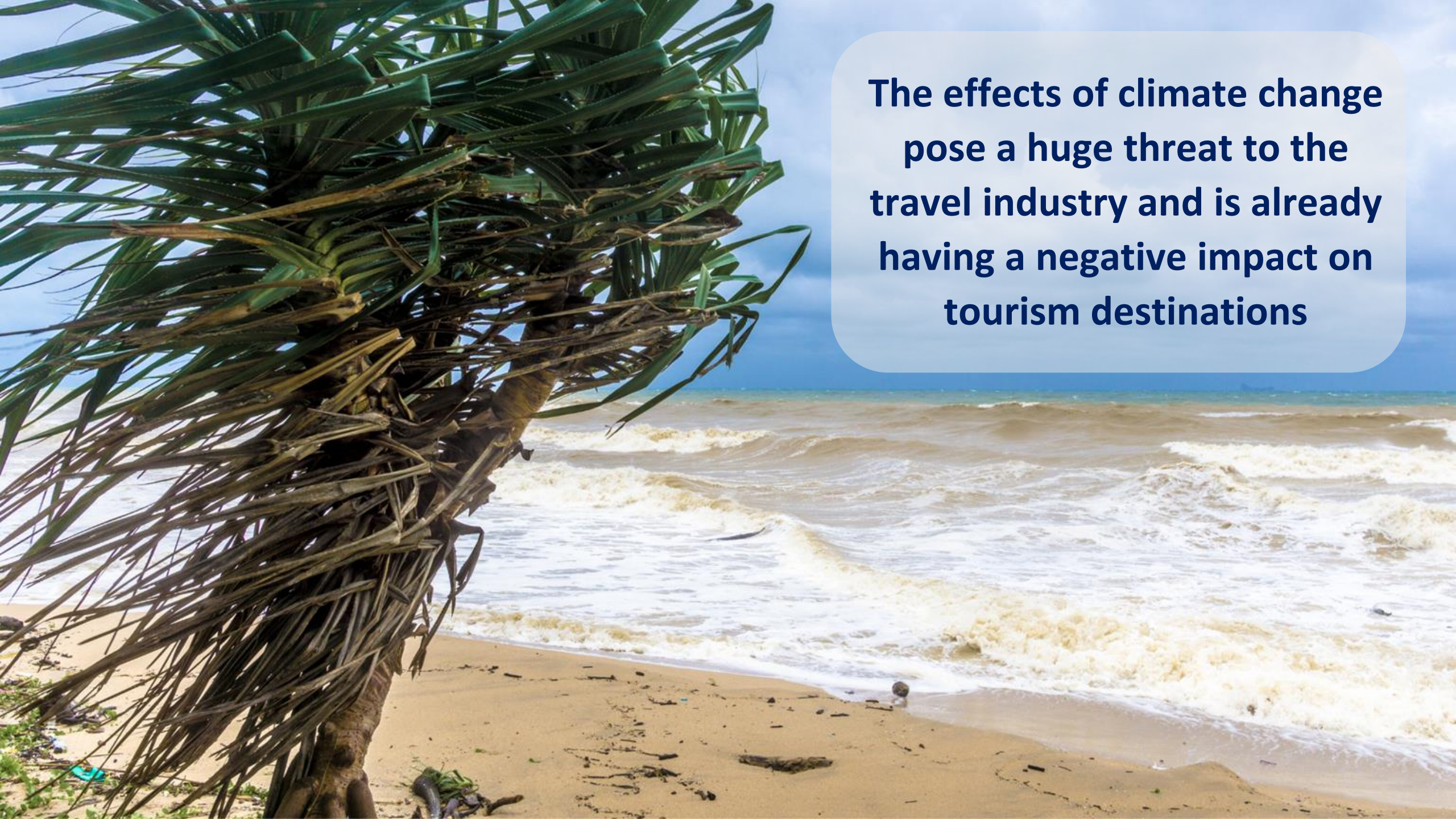
**Tourism accounts for
8%-11% of global
carbon emissions**

Why is this important?

- Climate change is one of the biggest and most urgent issues of our time and the travel and tourism sector accounts for around 8%-11% of global carbon emissions with emissions forecasted to increase by 25% by 2030 from 2016 levels ([UNWTO/ITF](#)).
- Unless we act now, the industry's emissions will keep growing.

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The effects of climate change pose a huge threat to the travel industry and is already having a negative impact on tourism destinations

Why is this important?

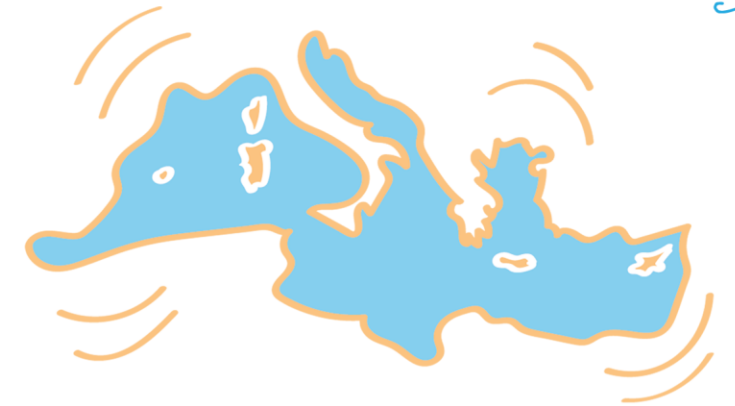
- Climate change is already having a negative impact on tourism destinations, with extreme temperatures, wildfires, coral bleaching, drought, storms and hurricanes all increasing in severity and frequency, as well as a growing threat from rising sea levels.
- Consumer choice is also likely to be increasingly driven by the desire to avoid extreme weather, affecting spending patterns and profitability.

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Greece's Tourism Faces Challenges Amid Climate Events

The wildfires that ravaged Rhodes in July 2023 had a significant impact on the island's tourism industry, leading to widespread evacuations, flight cancellations, and a temporary decline in visitor numbers.



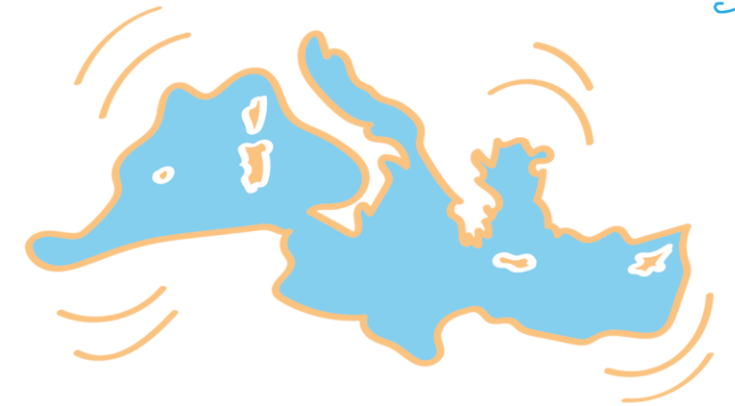
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Immediate Impact on Tourism

Approximately 19,000 tourists were evacuated from Rhodes as wildfires spread across the island, particularly affecting the southern and southeastern regions. Major tour operators, including TUI and Jet2, cancelled flights and holiday packages, while many travellers were repatriated early. Despite the fires affecting about 10% of the island's accommodation capacity, the tourism sector experienced a sharp decline in bookings during the peak summer period.

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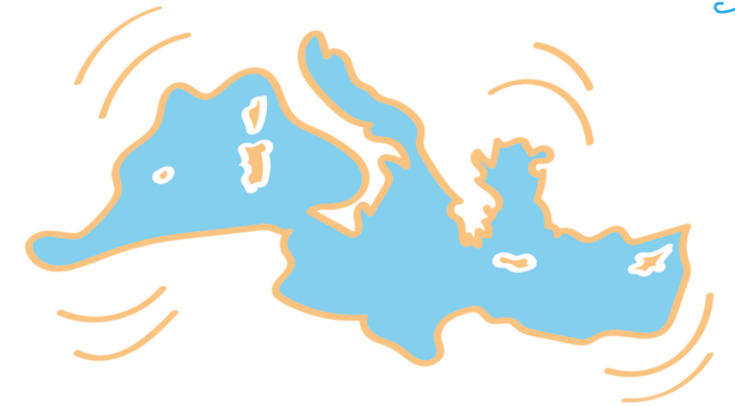


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Greece's Tourism Faces Challenges Amid Climate Events

The floods in Greece, particularly the catastrophic events in Thessaly in 2023 and subsequent storms like Storm Bora in December 2024, have significantly impacted the tourism sector.

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Infrastructure Damage:

In Volos, the tourist port was overwhelmed with hundreds of thousands of dead fish displaced by the floods, creating a strong odor that deterred visitors and disrupted local businesses.

Evacuations and Disruptions: Storm Bora in December 2024 led to severe flooding on Rhodes, prompting the evacuation of 80 people and the temporary closure of roads, affecting both residents and tourists.

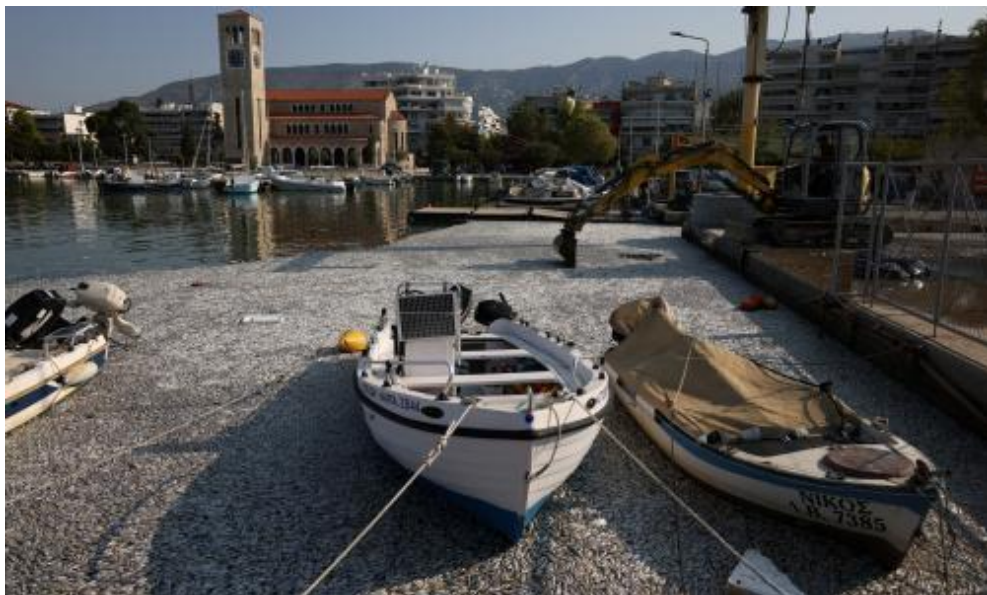
Economic Decline: Despite a general increase in tourism across Greece, areas like Magnesia, which includes Mount Pelion, experienced a decline in accommodation and catering turnover by 4.6% and 6.5%, respectively, during the second quarter of 2024

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Greece tourist port flooded with hundreds of thousands of dead fish

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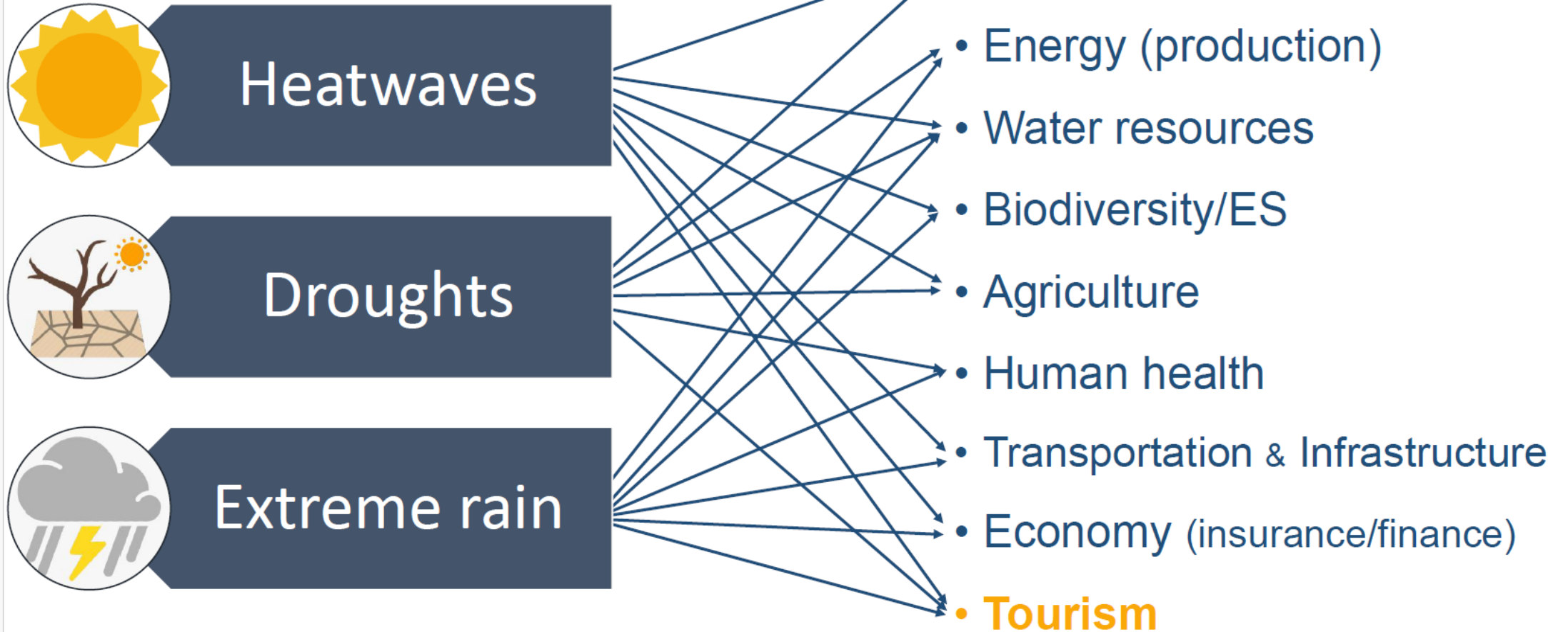
IMPROVED PREDICTABILITY OF EXTREMES OVER THE
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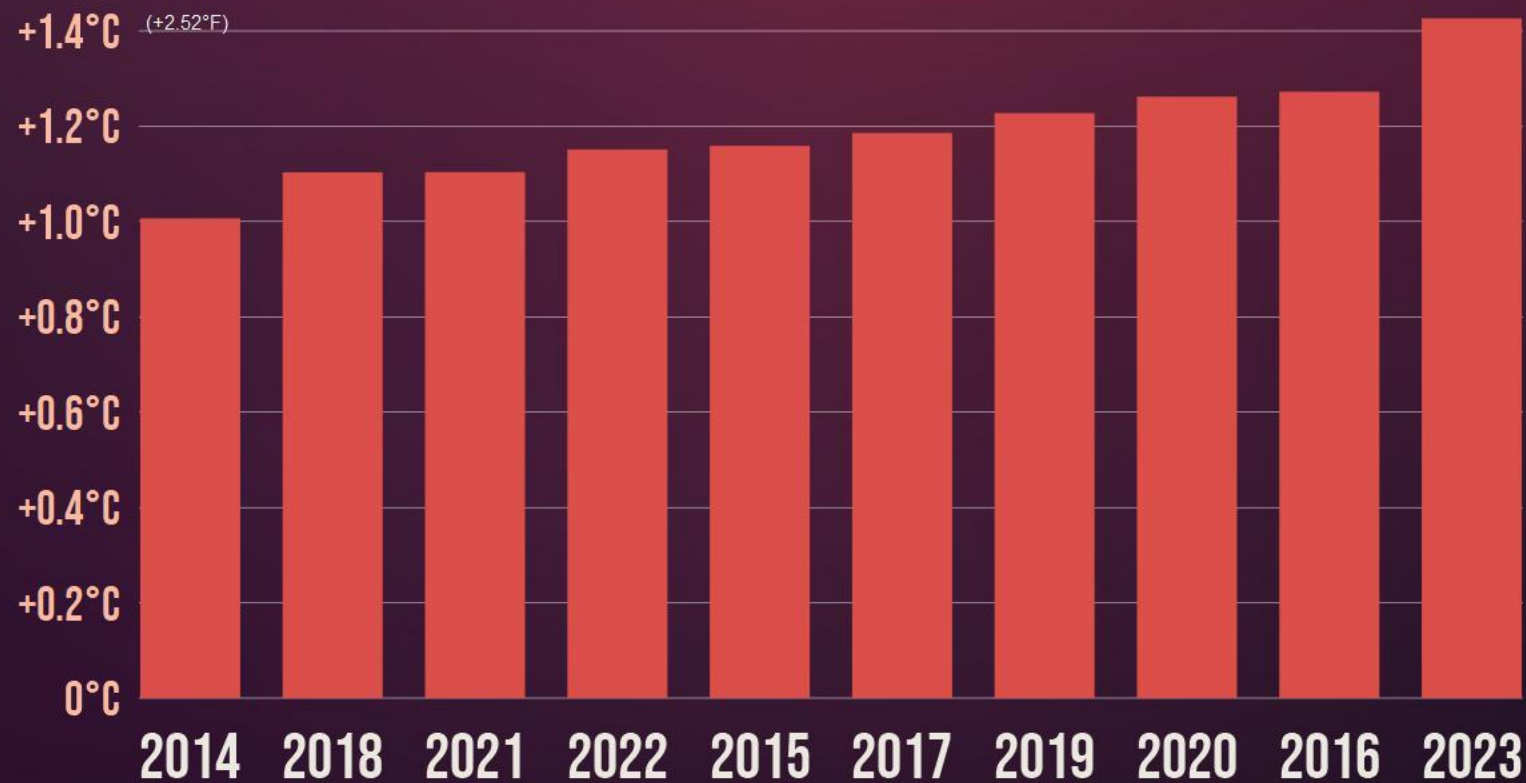
Storm Bora floods homes, streets in Greek island of Rhodes



* Climate change impacts



10 HOTTEST GLOBAL YEARS ON RECORD

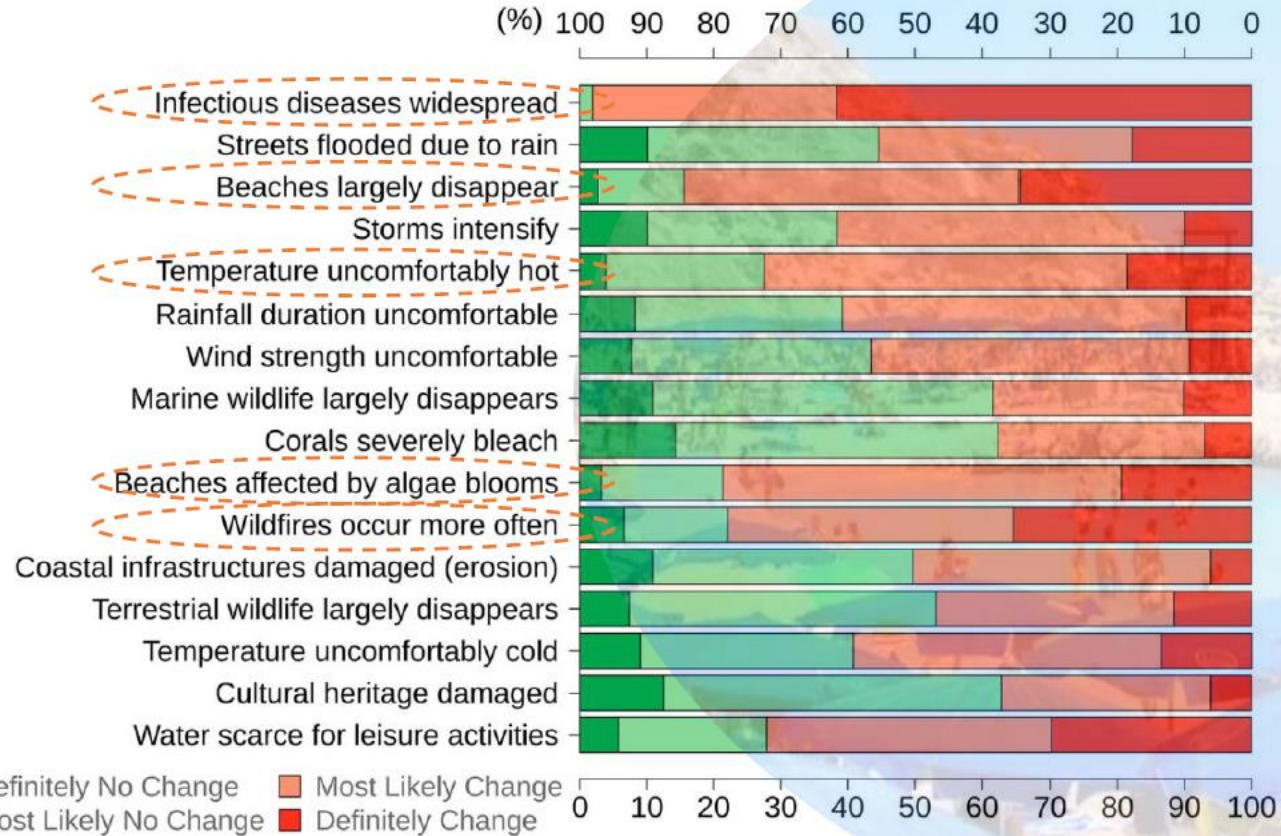


Global temperature anomalies (°C) averaged and adjusted to early industrial baseline (1881-1910).

Data as of 1/12/2024.

Source: NASA GISS & NOAA NCEI

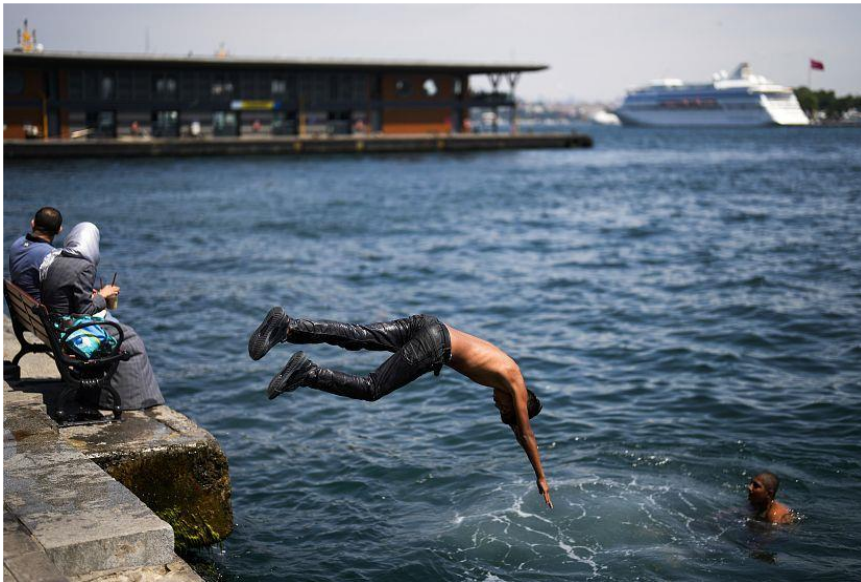
Change of travelling decisions under climate change impacts in Cyprus



León CJ, Giannakis E, Zittis G, et al (2021)

Tourism Faces Challenges Amid Climate Crisis

Will 2025 be the hottest year ever recorded?





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Tourism Faces Challenges Amid Climate Crisis Will 2025 be the hottest year ever recorded?

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2024 breaks the record for the hottest day globally for the second consecutive day.



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It is a fact that the Eastern Mediterranean is already experiencing the effects of climate change.

- The Eastern Mediterranean is a global climate change hotspot. In the future, we expect a further increase in temperatures and a decrease in rainfall.
- The temperature rise is more intense during the summer months.
- Climate change is projected to lead to reduced tourist demand for Southern Europe — especially under the **Business As Usual (BAU)** scenario.
- The impacts may be more manageable under an **optimistic scenario**, but this requires significant and timely reductions in emissions.
- There may also be opportunities for tourism during the **autumn and spring seasons**.

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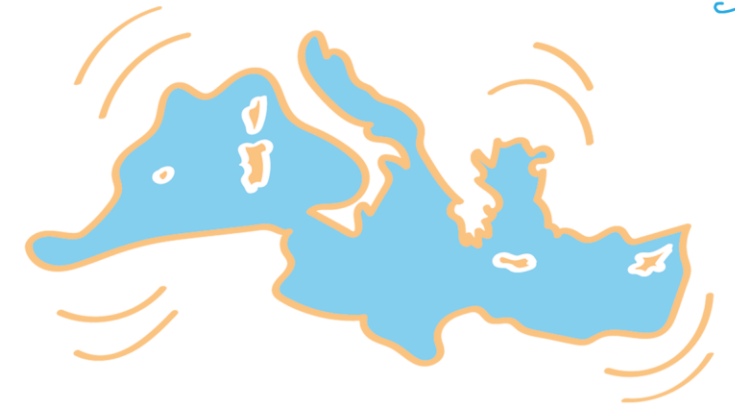


Complaints Regarding the Climate Crisis:

The most common complaint among tourists in Cyprus last summer was the heat.

- The whole world has just experienced the hottest July since records began.
- Cyprus suffered along with the rest of the world.
- Cyprus is starting to become an unattractive destination for Northern Europeans during the hot months of June, July, and August.

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Here are some comments from tourists in Cyprus, as reported by the *Cyprus Mail*

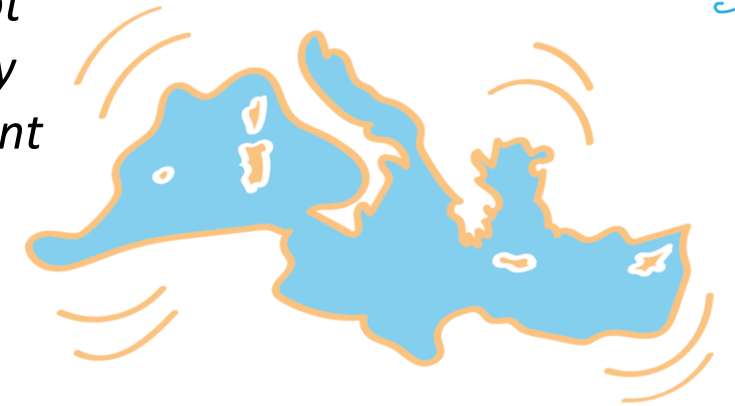
28-year-old Mancunian Harry:

"We checked the weather before we came," he says. "It said Cyprus would be 30 degrees in July, and we thought that would be fine because we've been to Spain before and it's similar. What we didn't expect was 40+. For days on end. I'm starting to think I should just spend all my time in my room."

Swedish tourists Erik and Sofia were also affected.

"This is a heatwave, right?" says Sofia. "We've been to Cyprus before, but not like this. We weren't happy – even at night, it was too hot. We used to eat by the sea and then go into town. This time, we only went to the hotel restaurant because it had air conditioning."

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Overall, holidaymakers will need to be more flexible with their travel plans, and businesses in the tourism industry must adapt to these new climate realities in order to remain economically sustainable.

Short-term climate forecasts: These refer to climate projections for the next 1–10 years. They are vital for regions like the tourist resorts of the Eastern Mediterranean that depend heavily on tourism. The expected changes in weather will affect both the comfort levels and preferences of tourists.

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What is next...

- **Doing more of the same won't be enough.**
- **To ensure communities and environments are protected and to stay profitable, all tourism organisations, including travel companies and DMOs (DESTINATION Management Organizations) will need to take action.**

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And its effects are not felt equally



- ❖ The effect of Climate Change will be even more catastrophic if CO2 emissions continue to rise and global heating goes above another 1.5 degrees - especially as the make-up of many popular tourist destinations (e.g. islands) means that they are inherently vulnerable to the effects of climate change.
- ❖ Nowhere will be exempt from these impacts, from crowded cities to areas of wilderness, as attitudes continue to shift and extreme weather events increase in severity and frequency.
- ❖ The effects of climate change are not felt equally – it often affects under-represented and vulnerable groups including women, indigenous communities and small island states more severely.

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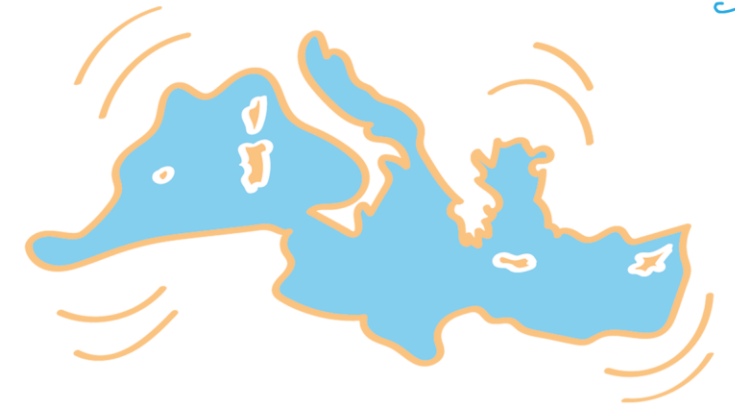


It's not all doom and gloom!

Reaching Net Zero

- ✓ Tourism has the potential and duty to be part of the solution.
- ✓ Tourism can be a catalyst to improve conservation and biodiversity, generate good quality jobs and opportunities for enterprise, and raise quality of life.
- ✓ This is why it's vital for the tourism sector to play its part to reduce CO2 emissions and to support destinations to build resilience to the impacts of climate change.

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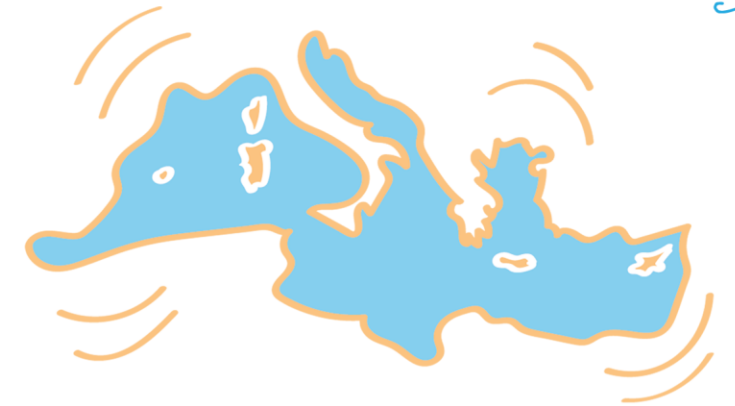


How can we start to reduce emissions?

Reaching Net Zero

- There is global consensus that in order to avoid irreversible effects of climate change, emissions of carbon dioxide (CO₂) need to fall by about 45 percent from 2010 levels by 2030 and need to reach net zero around 2050.
- Net zero refers to a state in which the greenhouse gases going into the atmosphere are reduced and/or balanced by removal out of the atmosphere ([netzeroclimate.org](https://www.netzeroclimate.org))

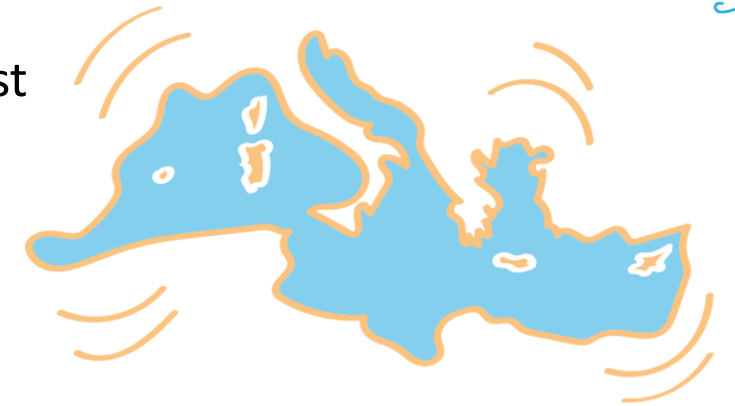
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How can we start to reduce emissions?

- This requires large-scale decarbonisation across all levels of society as well as increased removals of greenhouse gases from the atmosphere, such as planting trees, increasing the amount of carbon stored in the soil and engineered approaches and devices that capture CO₂ from the air.
- This ambition was first set out in the Paris Climate Agreement in 2015 and has been reinforced at subsequent UN climate change conferences or COPs since then.
- In order for countries to make these commitments, national targets must include action from all types of organisations and businesses.

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A close-up photograph showing two hands, one from a person with a blue and white plaid shirt, planting a small green seedling into dry, cracked soil. The hands are positioned on either side of the seedling, gently holding the soil. The background is a vast expanse of parched, cracked earth under bright sunlight.

Tourism has the potential and duty to be part of the solution

Answer: Sustainable Tourism

Reaching 'Net Zero'

Global consensus that emissions need to halve by 2030 and reach net zero by 2050





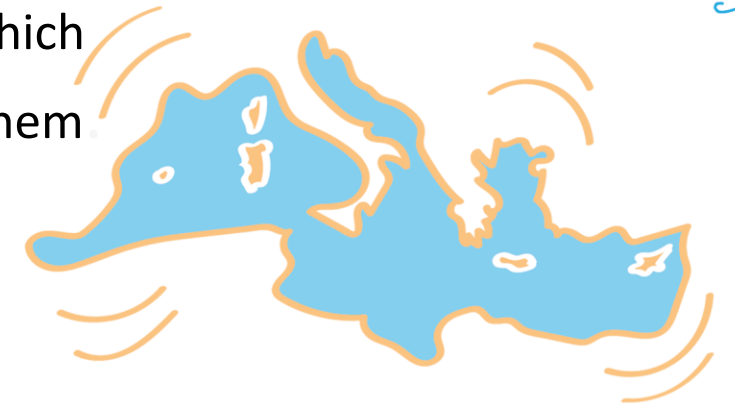
- **Glasgow Declaration** for Climate Action in Tourism
- Commitment to halve emissions by 2030 and **reach Net Zero as soon as possible before 2050**
- Signatories must develop a **Climate Action Plan or roadmap to reduce their emissions**
- Aligned to **broader global framework and vision** to respond to impacts of climate change



Glasgow Declaration for Climate Action in Tourism

- At the climate summit in Glasgow, leading players from the tourism sector came together to launch the Glasgow Declaration for Climate Action in Tourism.
- The Glasgow Declaration is part of a wider global movement to halve emissions by 2030 and reach Net Zero as soon as possible before 2050.
- Signatories to GD commit to developing a Climate Action Plan, setting out how they will reduce their emissions.
- Developing a Climate Action Plan will enable the signatory to prioritise which actions to take to reach Net Zero and how to measure progress against them

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The Cyprus Sustainable Tourism Initiative (CSTI) is proud to be among the pioneering partners who co-signed the Glasgow Declaration on Climate Action in Tourism, reaffirming its commitment to promoting sustainable practices to address the climate crisis in the tourism sector.

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A background image of a map with several red pushpins. One pin is in sharp focus in the foreground, while others are blurred in the background. The map shows blue lines for roads and green areas for parks or forests.

What is a Climate Action Plan?

A detailed, customised roadmap for measuring, planning and reducing GHG emissions and related climate impacts, including:

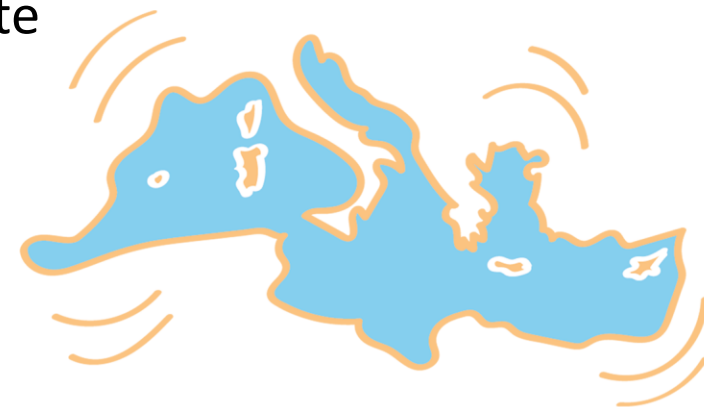
- **Measure** - inventory of existing emissions
- **Decarbonise** - reduction targets and prioritized actions
- **Regenerate** - actions to restore and protect ecosystems
- **Collaborate** - sharing solutions
- **Finance** - resources and funding required



To ensure climate action is most effective and is aligned across all of tourism, the Glasgow Declaration has set out five shared pathways for all plans to follow, these are:

- 1. MEASURE:** Measure and disclose all travel and tourism-related emissions. Ensure that the methodologies used are correct and that they are transparent and accessible.
- 2. DECARBONISE:** Set and deliver targets, including for transport, infrastructure, accommodation, activities, food & drink, and waste management.

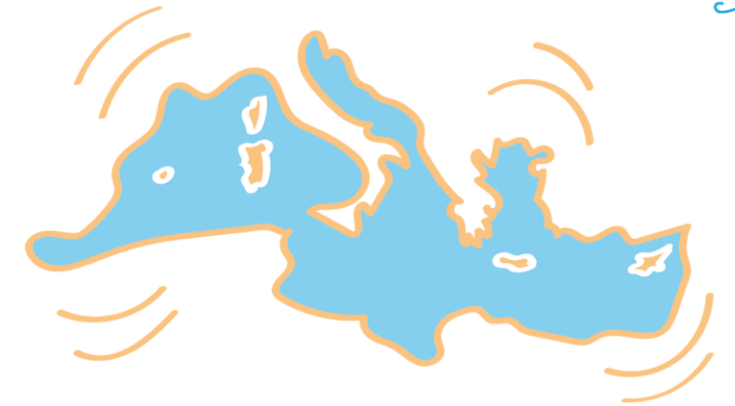
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3. **REGENERATE:** Restore and protect ecosystems, supporting nature's ability to draw down carbon, as well as safeguarding biodiversity, food security, and water helping visitors and local communities to experience better balance with nature.
4. **COLLABORATE:** Share evidence of risks and solutions and work together to ensure our plans are as effective and co-ordinated as possible.
5. **FINANCE:** Ensure organisational resources and capacity are sufficient to meet objectives set out in climate plans.

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What does *this...*



Glasgow Declaration
Climate Action in Tourism

A global commitment to **halve emissions by 2030** and reach Net Zero as soon as possible before 2050

...actually look like as a
thriving travel & tourism sector?



www.thetravelfoundation.org.uk/envision2030



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The Travel Foundation is a UK leading global non-governmental organization (NGO) committed to ensuring that tourism delivers lasting benefits to destination communities.

With over 20 years of experience supporting destinations worldwide, the organization specializes in advancing climate action and promoting equity for local communities. It is also widely recognized for its expertise in training and capacity building to support sustainable tourism development.

CSTI has been affiliated with The Travel Foundation since its inception, working in partnership to promote responsible tourism practices.

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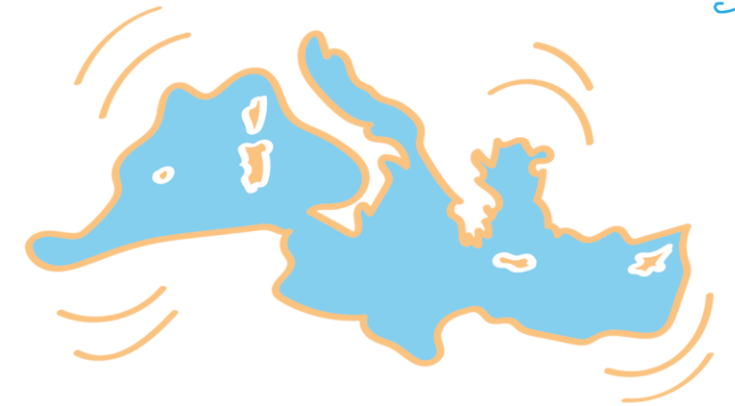
Decarbonising the supply chain: using the 'Climate Lens'



Why do DMOs need a climate action plan?

- **Risk:** tourism destinations are on the frontline of the climate crisis.
- **Opportunity:** a critical role in accelerating action towards suppliers.
- **Customer pressure:** increasing desire for sustainable travel
- **Investor pressure:** desire to avoid climate risks.

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- Tourism destinations are on the frontline of the climate crisis. The [World Economic Forum's Global Risks Report 2022](#) ranked climate inaction as the number one threat to the world and the most severe risk, in terms of potential impacts, over the next decade. A climate action plan is an essential first step to accelerate action, reduce risk and ensure that the destination is resilient to change.
- DMO can play a critical role in accelerating climate action within their destination, by supporting the many small and medium enterprises in their sector that are crying out for a simple and streamlined process for reducing GHG emissions.
- It's essential for a thriving tourism economy as there is growing concern amongst customers and an increasing desire to travel sustainably, plus global investors are seeking to invest responsibly and avoid climate-related risks.

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Benefits for DMOs to engage in climate action

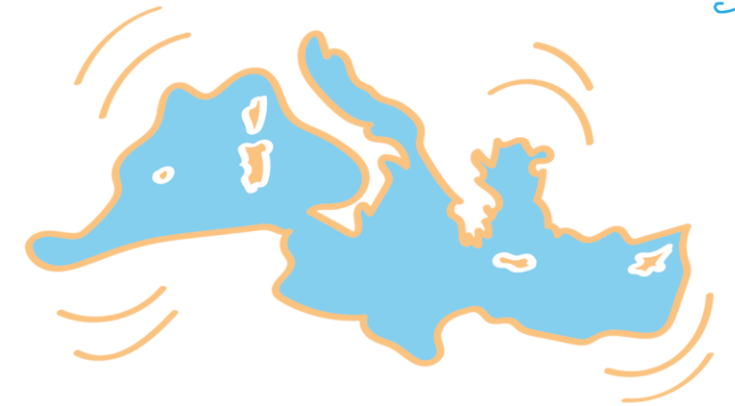
- **Enhanced reputation**
- Ability to **meet consumer expectations** and even create **competitive advantage**
- **Increased resilience and climate preparedness**
- **Protection of destination assets:**
 - Natural habitats and biodiversity
 - Cultural heritage
 - Resident satisfaction
- **Ability to address wider issues** e.g visitor management, economic leakage and seasonality.



Potential for enhanced optimisation of tourism markets

- ✓ **Higher value spend per tourist night:** Attracting visitors who spend more on local services, accommodation, and experiences, boosting economic returns.
- ✓ **Reduced emissions per tourist night:** Promoting low-impact travel, sustainable transport, and eco-certified accommodation to lower carbon footprints.
- ✓ **Improved seasonality:** Spreading visitor flows more evenly throughout the year to reduce pressure on peak periods and support year-round employment and business resilience.

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Climate change and the tourism sector in Cyprus: Perceptions and challenges

Philippos Drousiotis,
George Zittis, Florentios Economou, Evridiki Panayi,
Christos Zoumides



This project has received funding from the European Union's Horizon Research and Innovation Actions, under grant agreement No 101081276



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This project is funded by the European Union's Horizon Europe research and innovation programme under grant agreement no. 101081744.

Climate Change and Tourism Operations: *Survey Overview*

Four Sections

Total of 33 questions

Survey Design

- A. A. General Information
- B. B. Climate change impacts on tourism demand
- C. C. Hotel operations impact on climate and the environment
- D. D. Adaptation measures

- Multiple/Single Choice,
- Scale Ratings (1–5) and
- optional Open-Ended

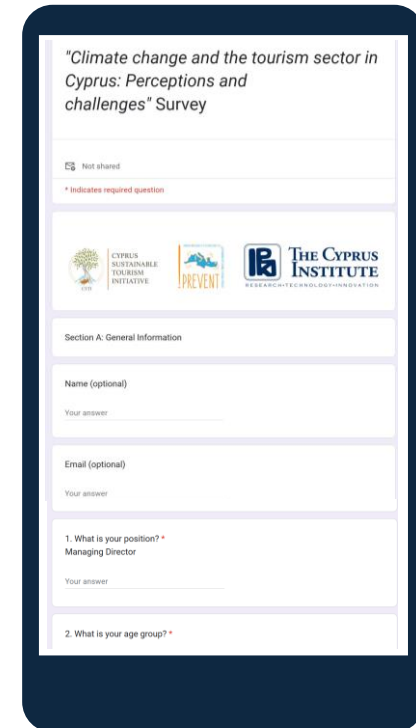
Date of Release

Total of 71 responders

Survey Release

November 15th - December 3rd

- 55 Hotel/General Managers
- 8 Sustainability/ Quality Supervisors
- 3 Operations Managers
- 5 Others



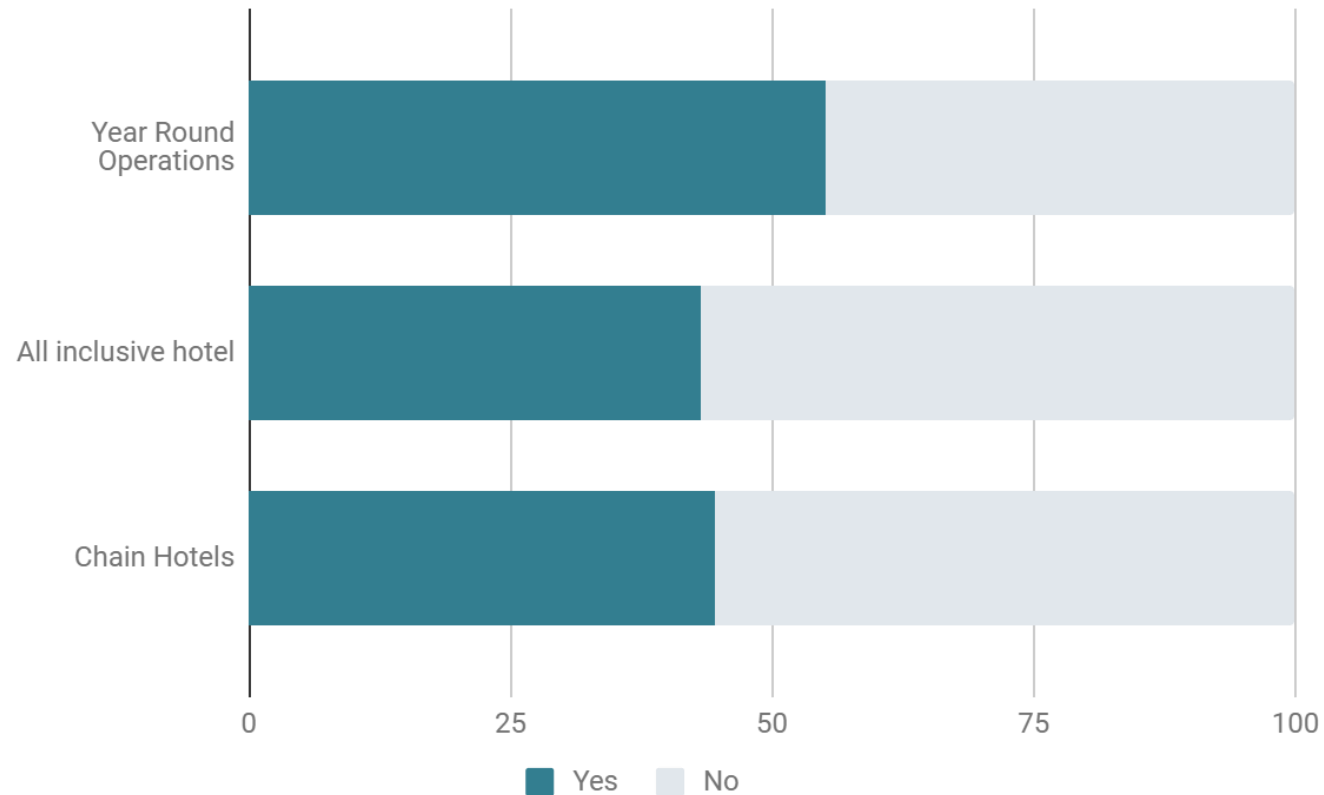
Business Operations Profile



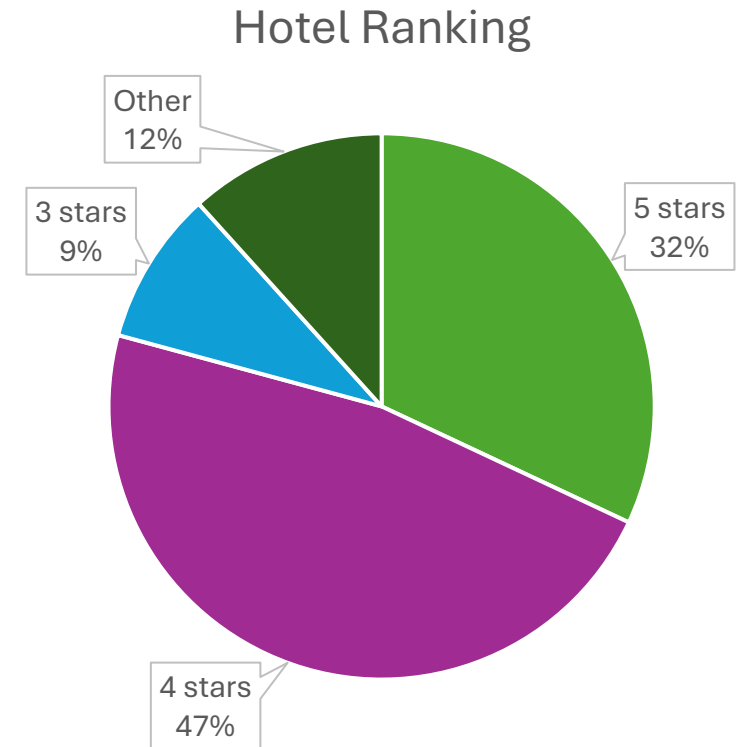
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Locations of respondents are predominantly coastal regions (81.7%), reflecting a significant focus on areas highly vulnerable to climate change impacts



Climate Change Impacts on Tourism Demand



84.5% believe climate change impacts tourists' decisions

89.7% noticed changes (or partially) in tourism demand due to climate changes

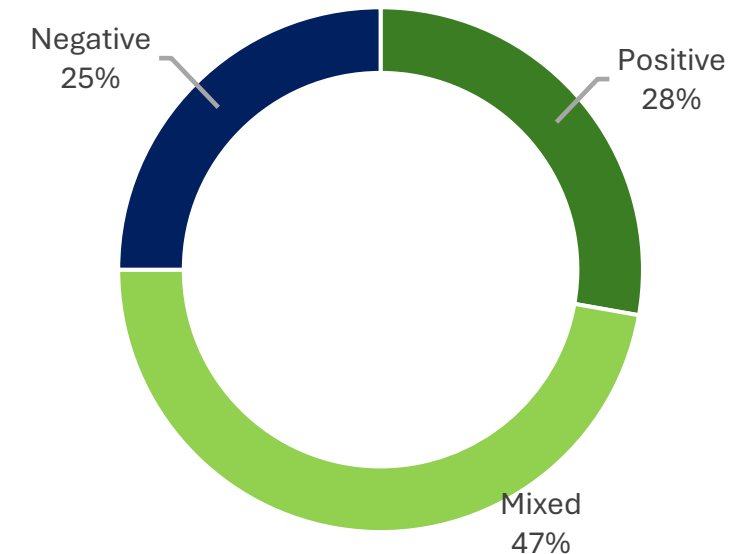


Major Risks Identified:

- Heatwaves and high temperatures (84.5%).
- Increase in extreme heatwaves (46.5%).
- Droughts (water shortages) and extreme weather (floods)

Notably: Sea-level rise or coastal erosion was not considered as a threat for the hotel managers (9.9%).

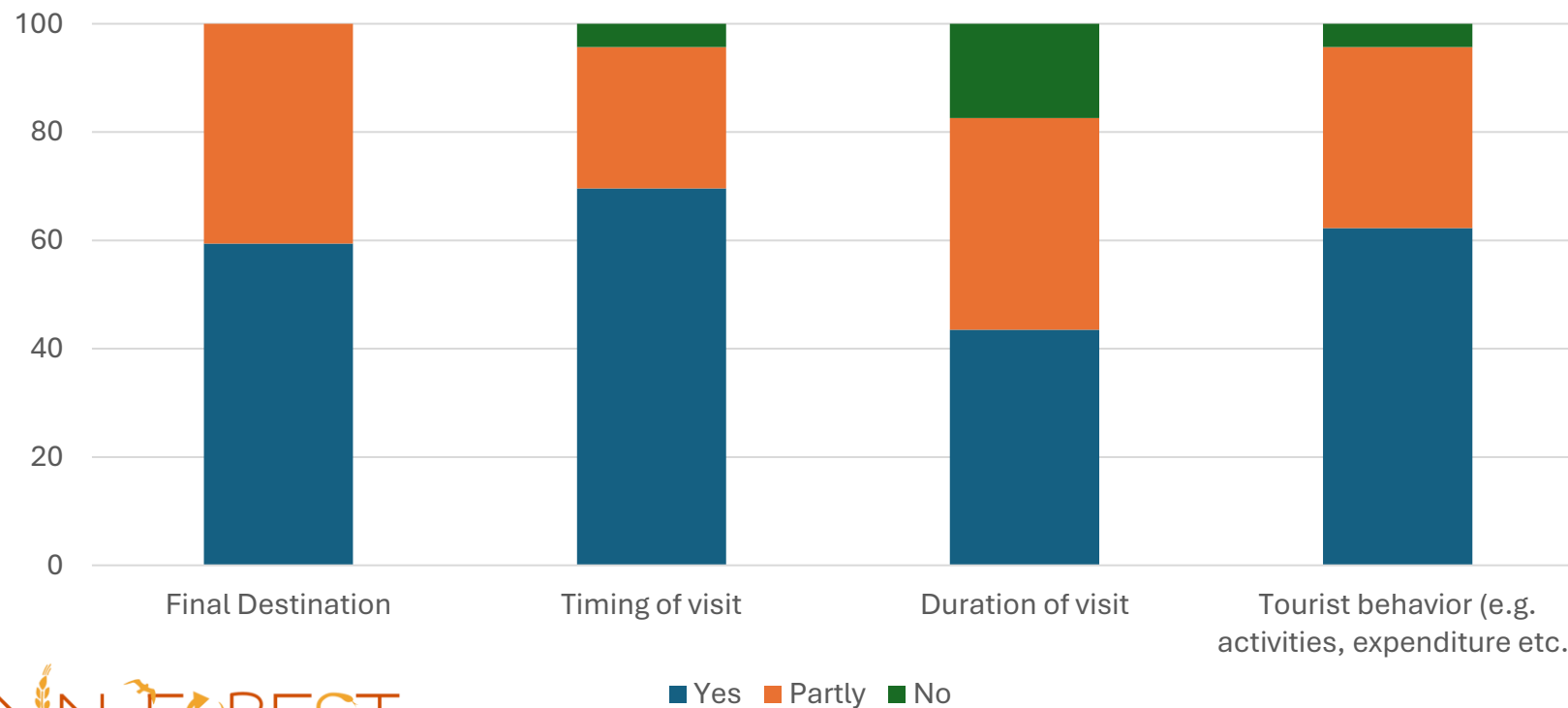
Climate change impact on tourism



Climate Change Impacts on Tourism Demand

Nearly 60% of managers have already noticed changes in demand during the summer season

Effect of changes in climate conditions – **Managers' Perception**



Perception on the Risks of Climate Change

1. Increase operational cost

Climate change can lead to higher operational costs for tourism businesses, driven by:

- increased energy demands (e.g., for cooling during heatwaves),
- infrastructure repairs (e.g., after extreme weather events), and
- adaptation measures (e.g., water conservation systems or flood defenses) (Dogru et. al., 2021).

2. Impact on local resources

Tourism intensifies the strain on local resources like water, food, and energy, leading to resource shortages and higher commodities costs:

- Water requirements for facilities (e.g., golf courses, swimming pools) and food production
- Overuse of local food resources (Gössling et. al., 2021)

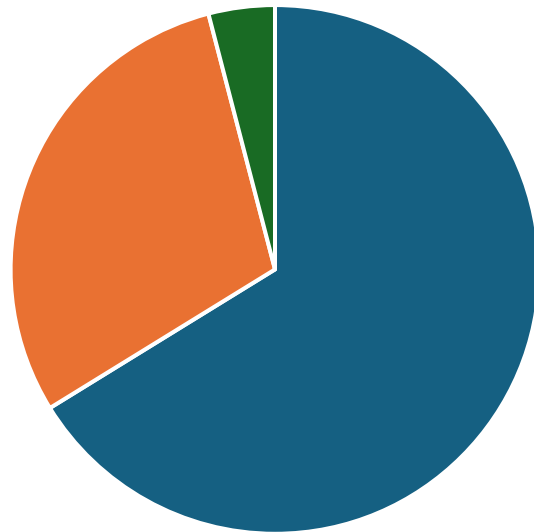
3. Make other destinations more competitive

Climate impacts can make traditional destinations less attractive, shifting tourist demand to alternative destinations with more favorable conditions (e.g., cooler climates, stable weather).

- Mediterranean destinations facing heatwaves and wildfires already lose tourists to Northern Europe (Scott et. al., 2019).

Hotel Managers' Perceptions of Tourism's Impact on Climate

Do you believe your operations have an impact on climate change?



■ Yes ■ Partly ■ No

Perceived Operational Areas Contributing to Climate Change and the Environment

Water Consumption

83%



Electricity Consumption

86%



Use of Plastic

76%



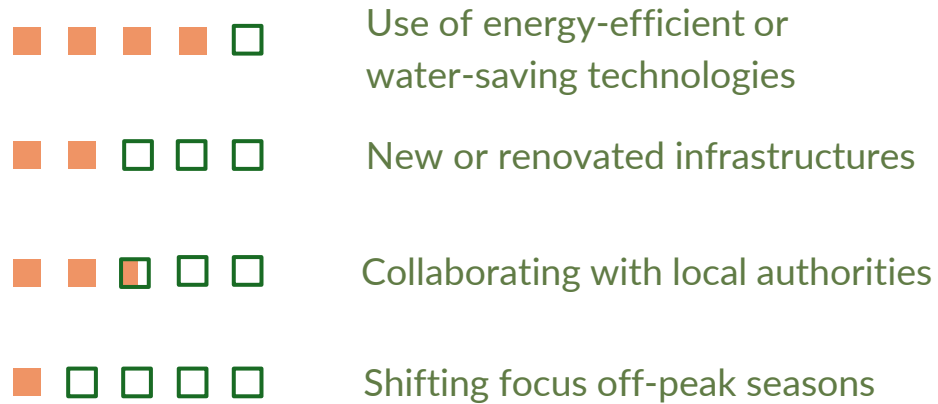
Food Waste

73%



Adaptation Measures in the Tourism Sector

Adopted adaptation strategies



Considered adaptation strategies



Support local food production and eco certified products (76.1%)



Switching to renewable resources (74.6%)



Infrastructure upgrades (64.8%)

Building Climate Resilience in the Tourism Sector



Operational Cost

- (-) High cost of adaptation measures
- Operational cost is only expected to increase



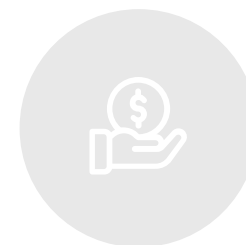
Adapt tourism services

- Shift focus to low-impact activities, such as eco-tourism or cultural tourism
- Shift in seasonal tourists demand



Capacity-building programs

- (+) Examples of best practices from similar business
- (+) Training programs on sustainable practices



Government support

- 7 out of 10 mention Lack of government support or incentives
- 'We need the authorities to follow what other developed countries are doing'



Next Steps

CSTI will develop a questionnaire targeting both international and local tourists to assess their perceptions of the relationship between tourism and climate change — including how tourism contributes to climate change and how climate change impacts tourism.

CSTI will also provide PREVENT with the opportunity to present the outcomes of its project during the European Conference on Sustainable Tourism: Celebrating 20 Years of CSTI Leadership in Sustainability (2006–2026), to be held in 2026. At the same event, CSTI will present the results of the survey, which will be conducted during August and September 2025.

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