

ICAO EUR/NAT Environment Workshop Hosted by the State Civil Aviation Agency of the Republic of Azerbaijan



ICAO



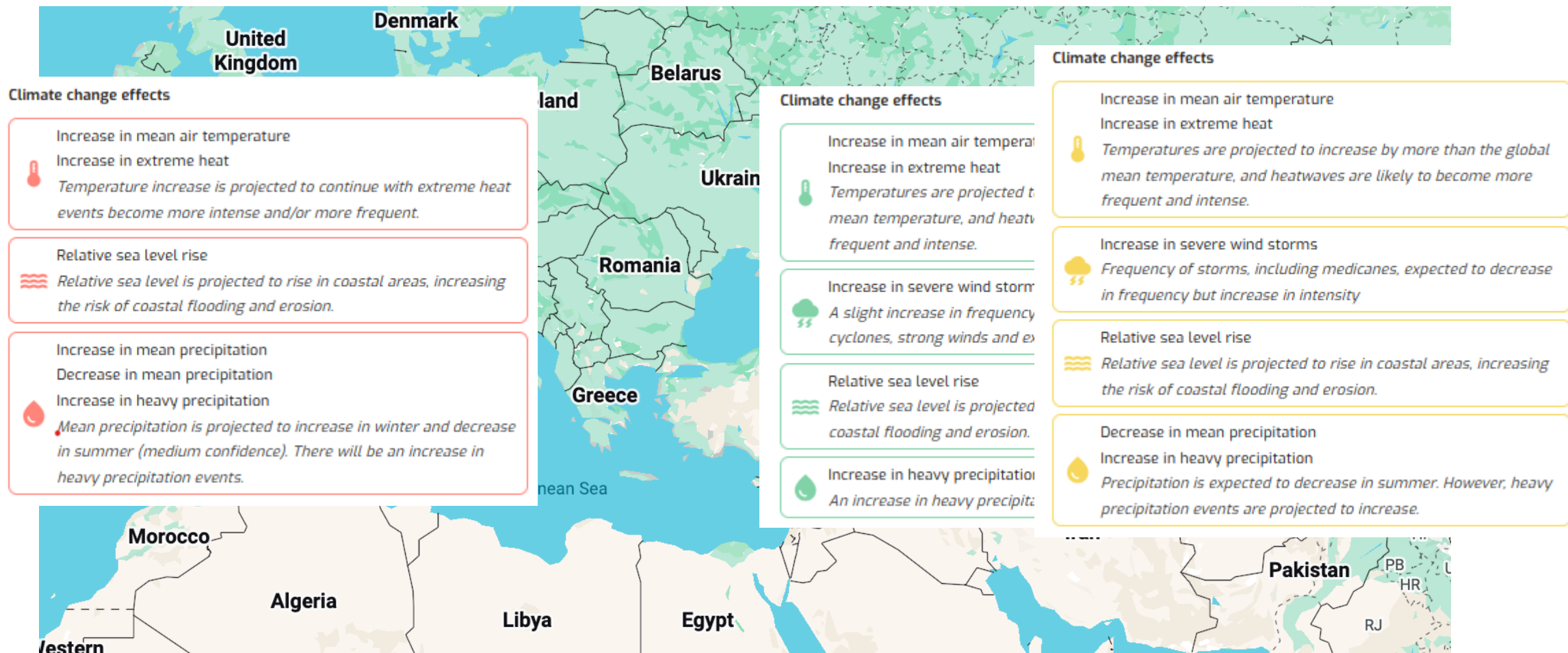
Climate Change Adaptation

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Agenda

- Change effects and impacts for aviation infrastructure and operations
- Key steps in carrying out a climate change risk assessment and implementing a climate adaptation plan.
- How to use FlyingGreen ClimAdapt to support climate change risk assessment and adaptation

Climate effects in the EUR/NAT region



Climate Change impacts for aviation are wide-ranging



Impacts of Storms

- Disruption to operations:
 - delays, re-routings, route extensions, trajectory management, HFE, increased fuel burn and emissions
 - potential en-route capacity loss and congestion
- Larger / more intense convective systems could affect multiple hub airports
- Damage to infrastructure
- Increase in lightning strikes: airport closures



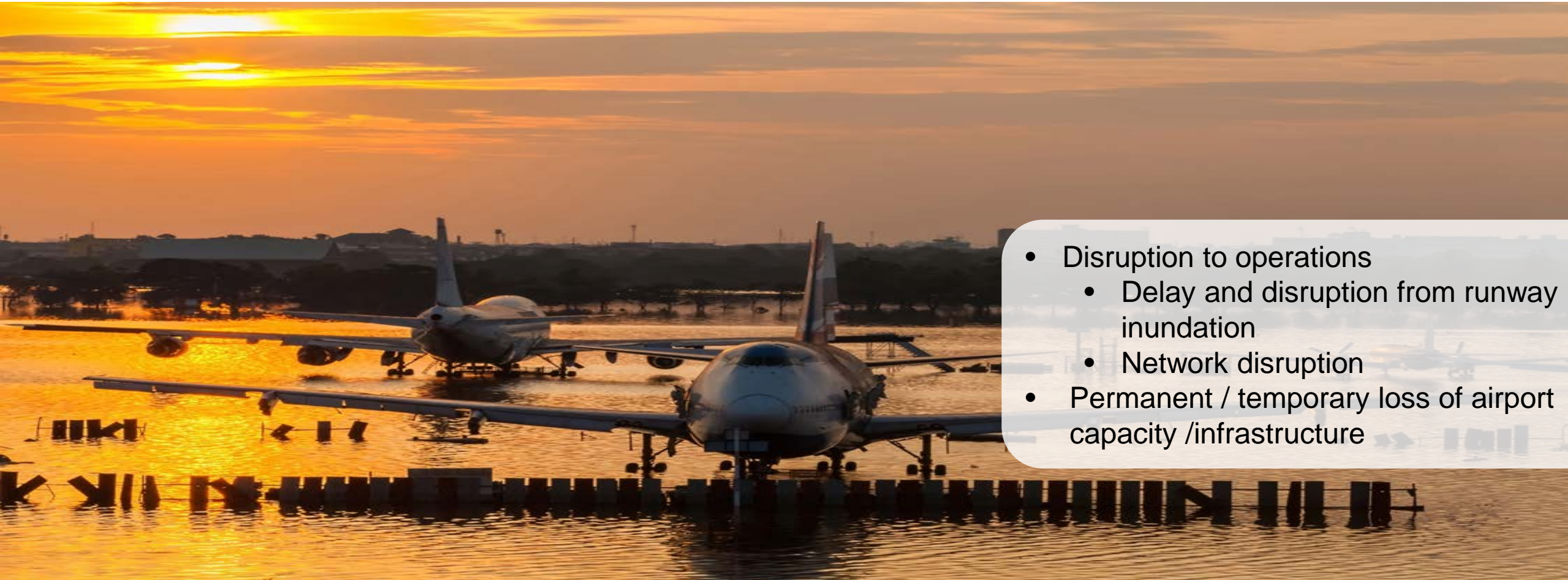
Higher average and extreme temperatures



- Changes to aircraft performance: take-off, payload, runway length, landing speed
 - Phoenix 2017: too hot for some regional jets to take-off (certification)
- Heat damage to airport surface (e.g. runway, taxiway)
- Heat damage to equipment e.g. ATM equipment, electronic equipment

Conditions for passengers, personnel, ground handlers, **ATC**

Sea-level rise & storm surge



- Disruption to operations
 - Delay and disruption from runway inundation
 - Network disruption
- Permanent / temporary loss of airport capacity /infrastructure

Wind



- Changes to trans-Atlantic flight times and routings: airport slot management
- Increase in crosswinds due to shifts in prevailing wind direction
- Changes in procedure due to crosswinds - environmental impact?
- Reduction in capacity at airports with no crosswind runway
- Disruption to operations if winds are too strong to take-off or land for spec aircraft type
- More clear air turbulence: injuries and aircraft damage

Image: Thales
integrated

Summer 2023: the start of a new normal?

Will 'prime fire season' force a change to our summer holidays forever?

According to a recent poll two thirds (67%) of UK holidaymakers said the extreme heat of 2022 has seen them change their travel plans this year.

Mallorca tourists run for their lives as terrifying storms send deckchairs flying

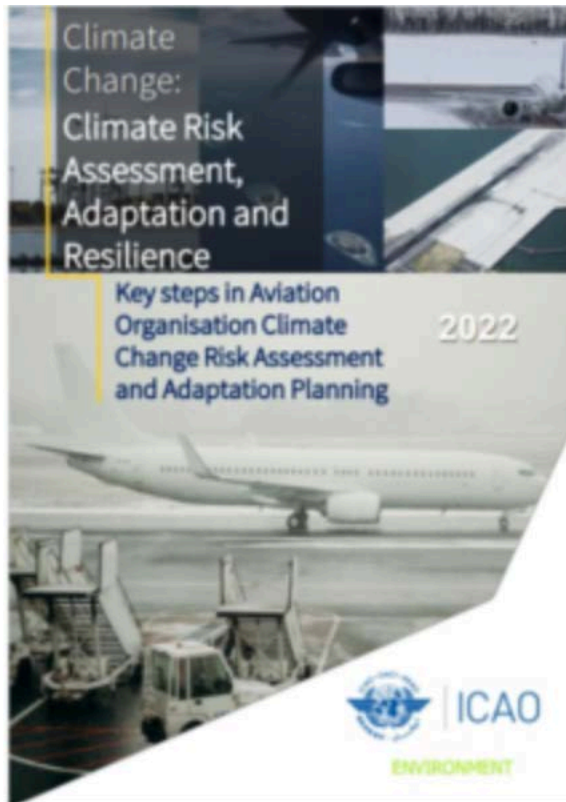
The holiday hotspot has been battered by a vicious storm that caused a cruise ship crash and has turned dream getaways into nightmares for many Brits caught in the chaos

Extreme heat in Europe is becoming the new normal — prompting tourists toward cooler destinations

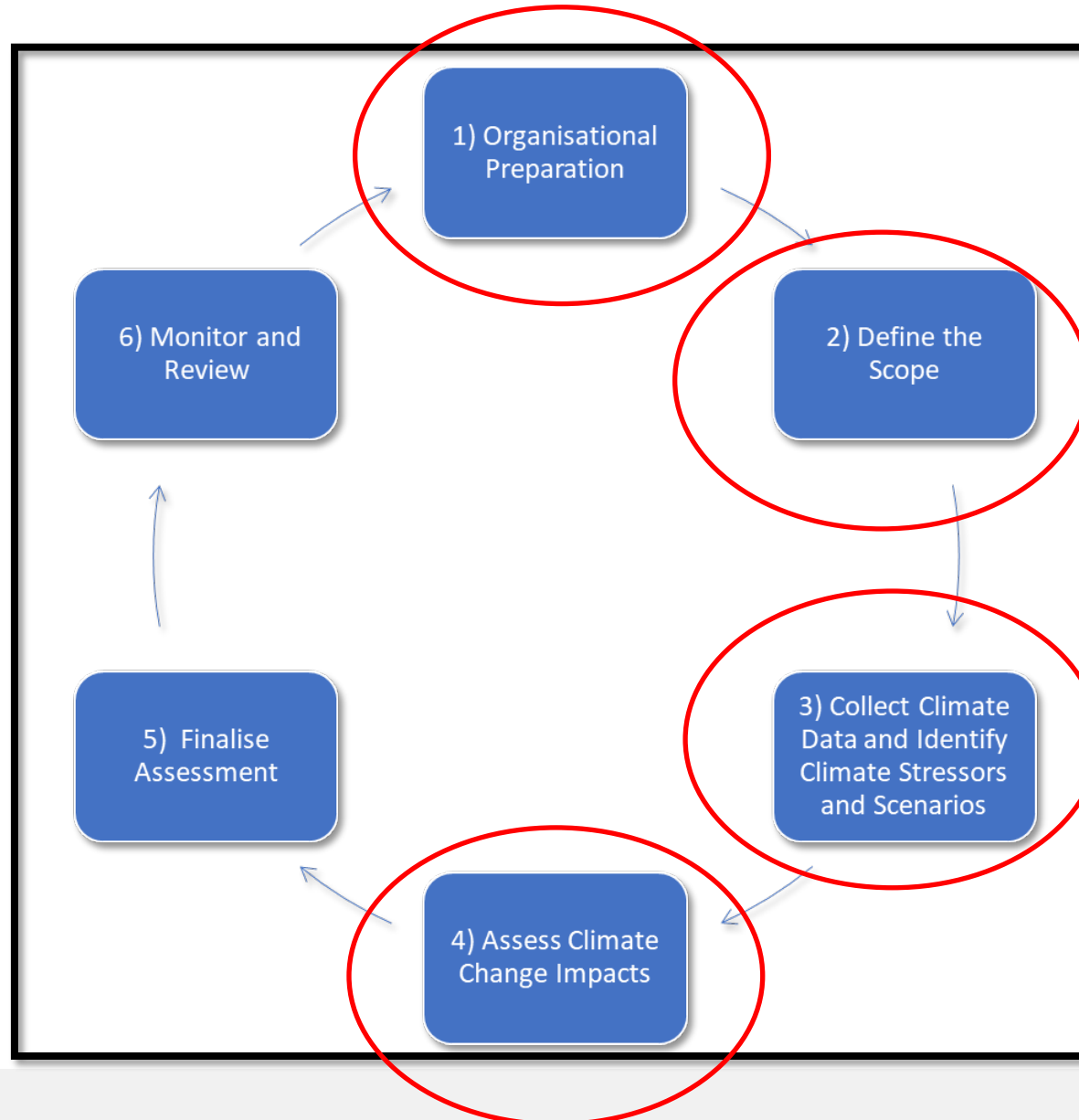
More tourists are thought to be prioritizing milder temperatures or even off-season travel to avoid spending their time away in oppressive heat.



Climate Change Risk Assessment and Adaptation Planning



Stage 1: Key Steps for Aviation Organisation Climate Change Risk Assessment



Key step 4: Assess climate change impacts

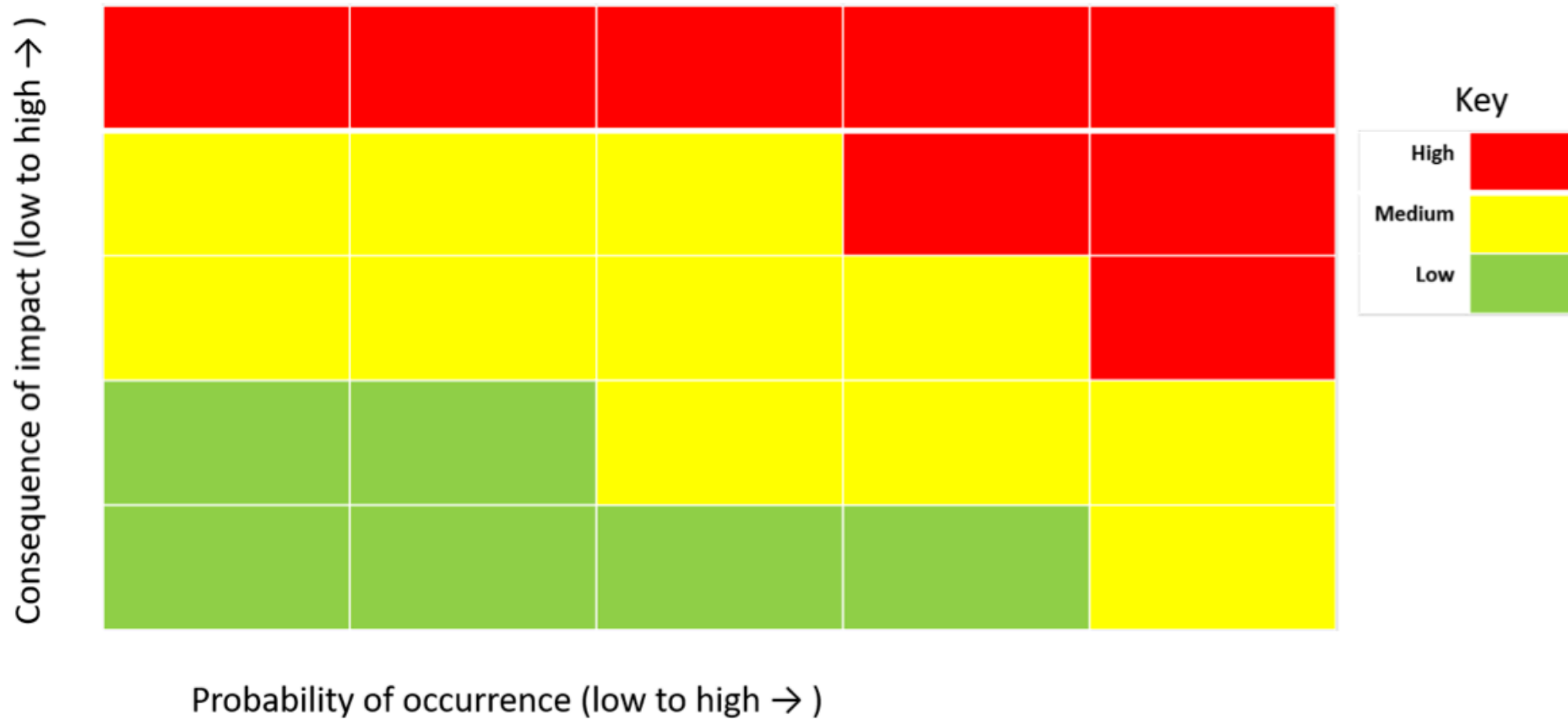
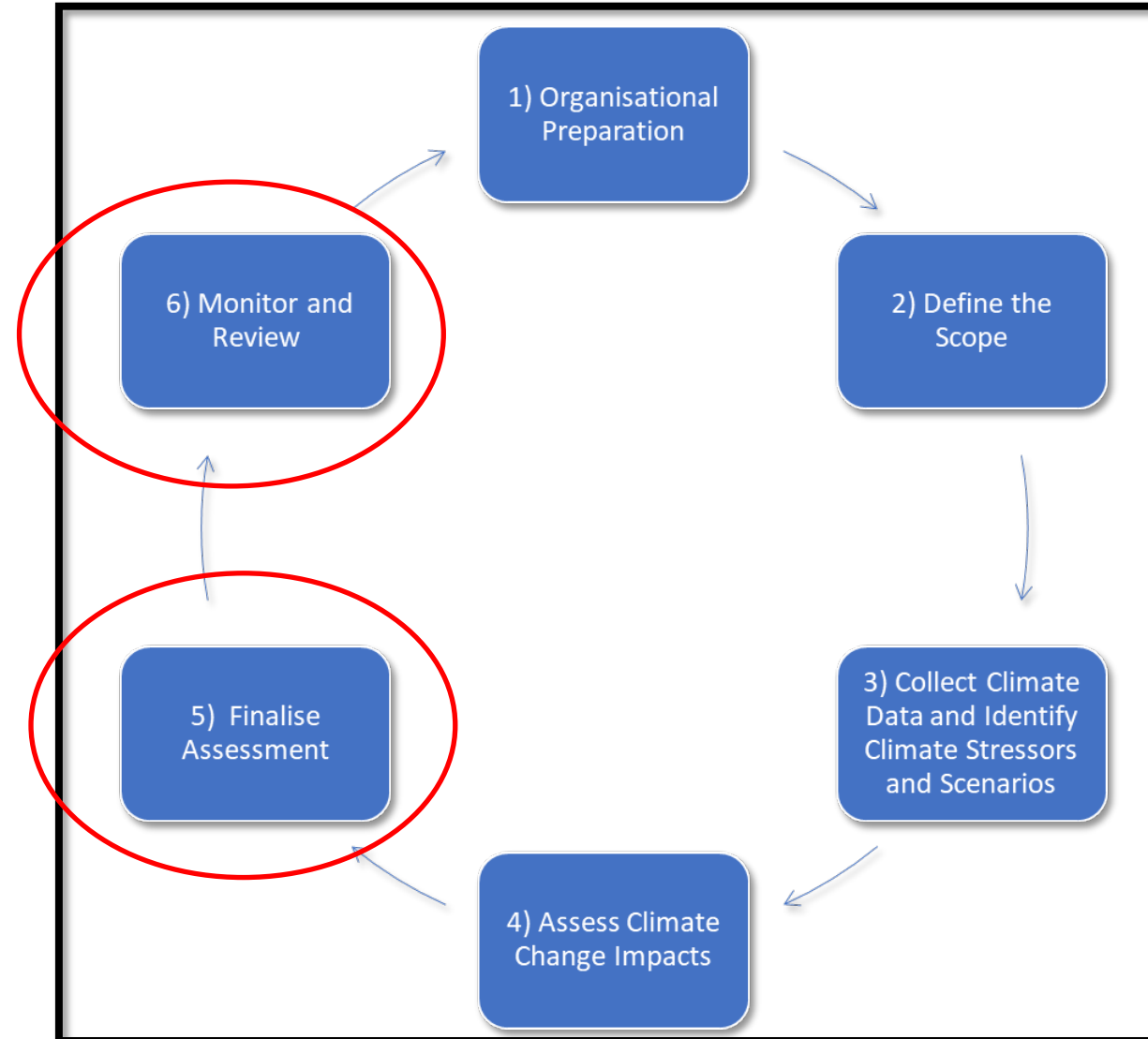
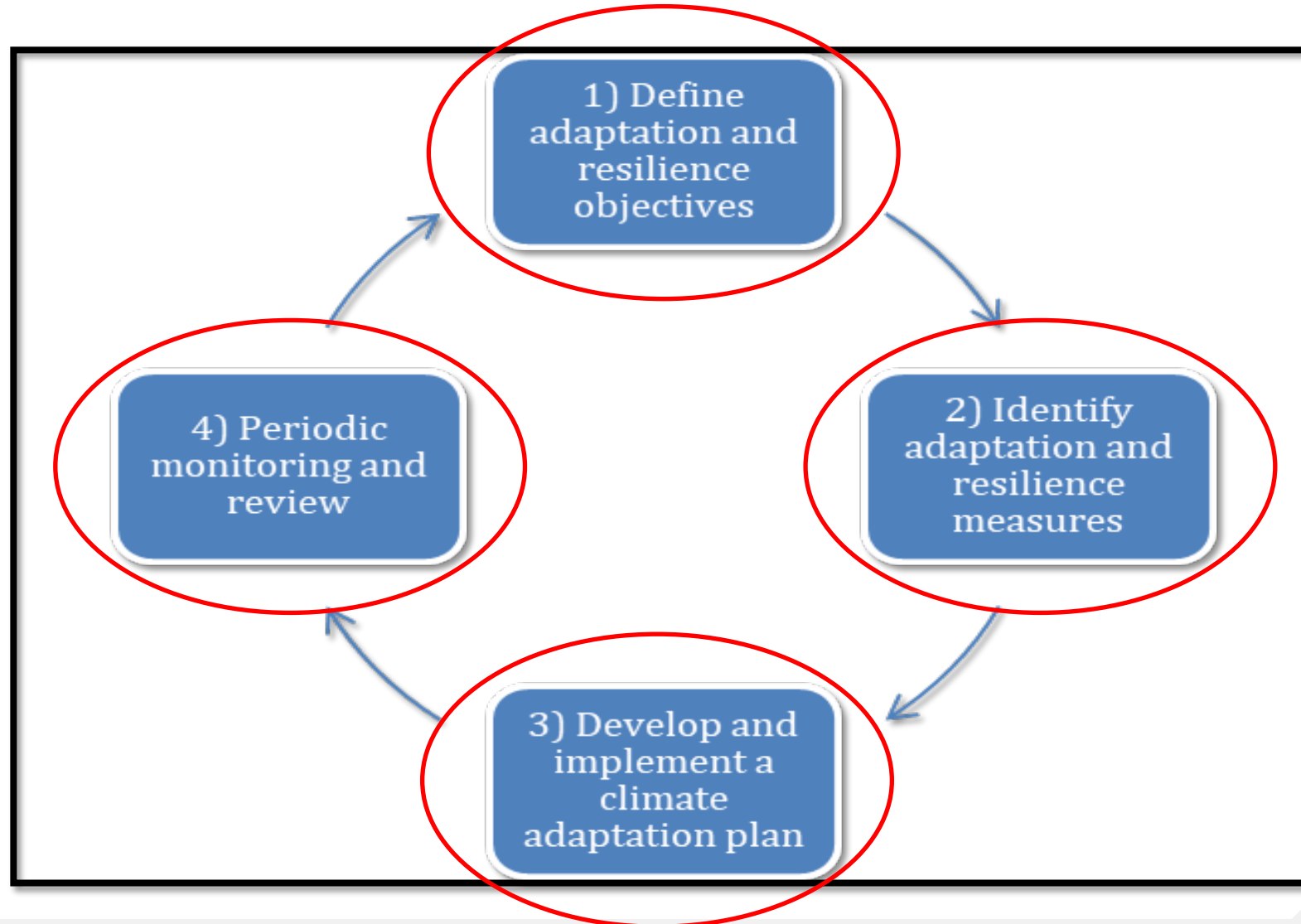


Figure 4 - Example risk matrix (note: this will vary according to the specific risks and consequences an organisation faces.)

Stage 1: Key Steps for Aviation Organisation Climate Change Risk Assessment



Stage 2: Key Steps for Aviation Organisation Climate Change Adaptation Planning



EACCA-WG Briefing on Adapting Aviation to a Changing Climate



Adapting European Aviation to a Changing Climate: Guidance on Risk Assessment and Adaptation



European Aviation Climate Change Adaptation Working Group





Toolkit for Climate Change adaptation

A **centralised source** of information for Climate Change impacts and adaptation measures

High level screening tool

Is your operation climate-proof? Run a quick assessment to evaluate whether you know how climate change impacts could affect your aviation operations. Find out if further detailed analysis is advised.

Evaluate impacts



Economic Assessment tool

Plan for the financial implications of climate change impacts. Assess the likelihood of climate change events and evaluate potential impacts across key financial criteria. View a tailored cost projection to guide your strategic decision-making.

Run cost assessment



Repository of Climate Change Impacts and Adaptation Measures

Effectively manage the risks of climate change by identifying potential impacts and adaptation measures. This database helps you identify targeted solutions based on your stakeholder group, the climate effects you're facing, and the specific risks to your organisation.

Explore risks & solutions



Climate Change Adaptation Planning Checklist

Use our checklist to identify the key steps to evaluate the impacts of climate change on aviation infrastructure and operations and develop an adaptation plan, ensuring that your national aviation sector is prepared for potential climate impacts.

Review checklist





Toolkit for Climate Change adaptation



<https://flying-green.eurocontrol.int/#/clim-adapt>



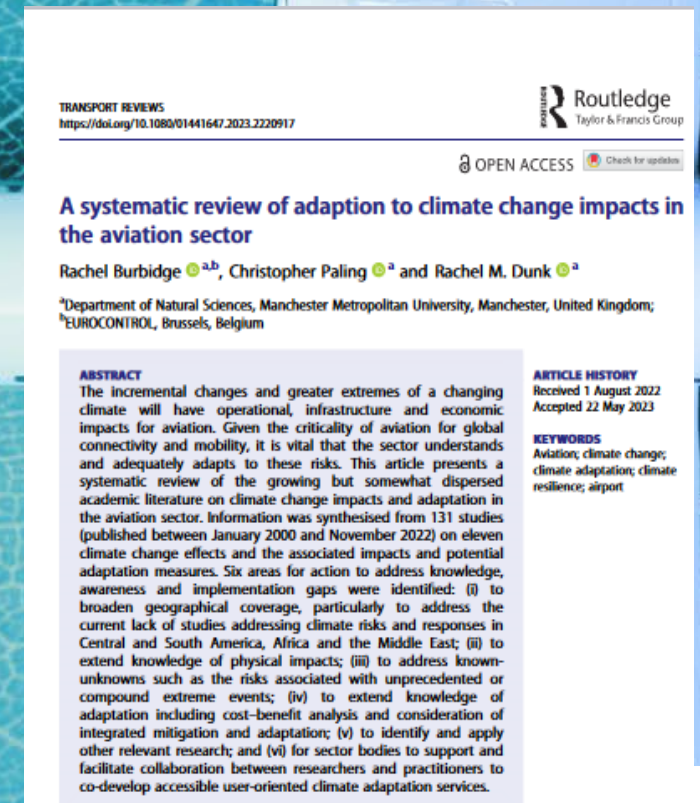
Thank you for your attention

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Supporting
European
Aviation



Find more information here:



Thank You

