Gozo

Mediterranean Sea

Comino

Malta

Risk, Hazards and Resilience – Tourism, Climate Change, Malta and the Mediterranean.

Prof Andrew Jones
Director Institute for Tourism Travel and Culture
University of Malta

Mediterranean









THE IDEAL IMAGE









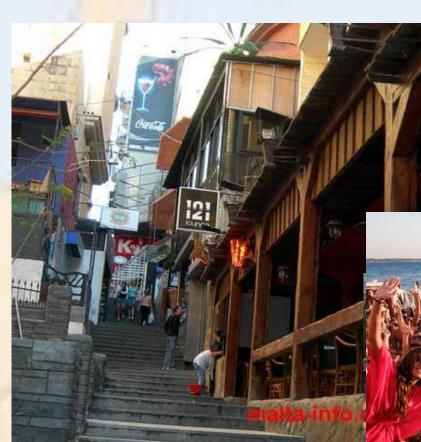








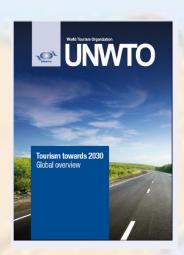
MASS TOURISM







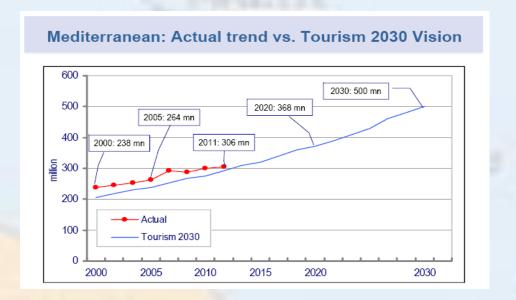




Europe 42% of international tourism

receipts up US\$ 35 billion to US\$ 489 billion.

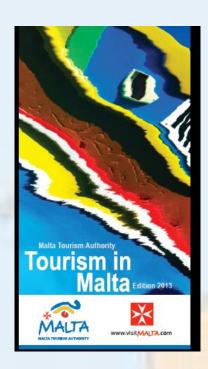
Southern and Mediterranean Europe, 11 million more international arrivals (+6%) in 2013.
UNWTO 2014



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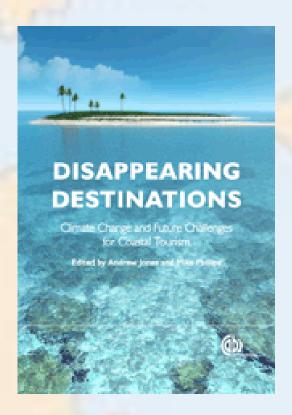
				Change
	2011	2012	2013	2013/12
Inbound Tourists	1,415,018	1,443,414	1,582,153	9.6%
Tourist Guestnights	11,241,472	11,859,521	12,890,268	8.770
Average length of stay	7.9	8.2	8.1	-1.2%
Tourist Expenditure (€ '000s)	1,221,321	1,326,474	1,440,379	8.6%





Current debates Where we are today The Future

2011

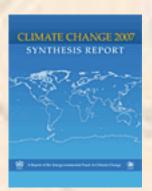


Edited by A L Jones,
University of Wales, Cardiff,
M Phillips, Swansea
Metropolitan University,
Wales

Climate Change Impacts in the Mediterranean basin - IPCC 4th Assessment Report 2007

Mediterranean ecosystems may be among the most impacted by global change drivers.

- increased fires.
- vulnerability to recent trends in heat waves, droughts and floods
- shifts in the kelp forests / macroalgae communities
- groundwater recharge decreases dramatically by more than 70% along the south rim of the Mediterranean Sea
- more pest outbreaks
- long-term sea-level change
- Increased sea temperatures may trigger large scale disease-related mortality events of dolphins in the Mediterranean



'The tourism industry will also be hit by wider problems, including water scarcity, higher insurance premiums in the face of more extreme weather, and a greater threat of conflict as a result of climate change in some parts of the world.'

Guardian Environment Network







Climate change to re-shape tourism

Report warns industry will face dramatic changes over the coming decade as climate change and shifting demographics increase pressure on many resorts.

'High energy costs' 'water scarcity' 'drastically change of destinations' 'cost of key resources such as food, building materials and energy to rise' 'divided disquiet' 'carbon clampdown'



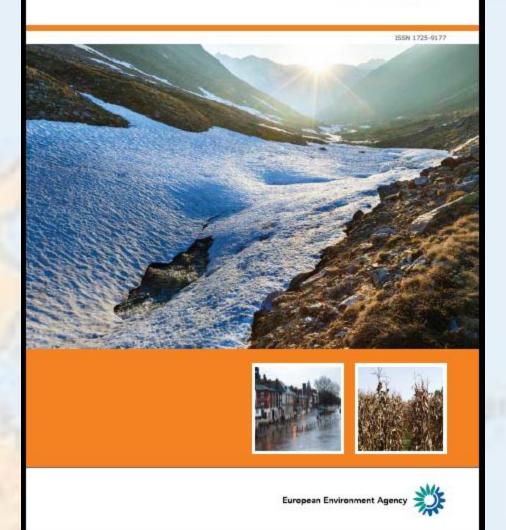




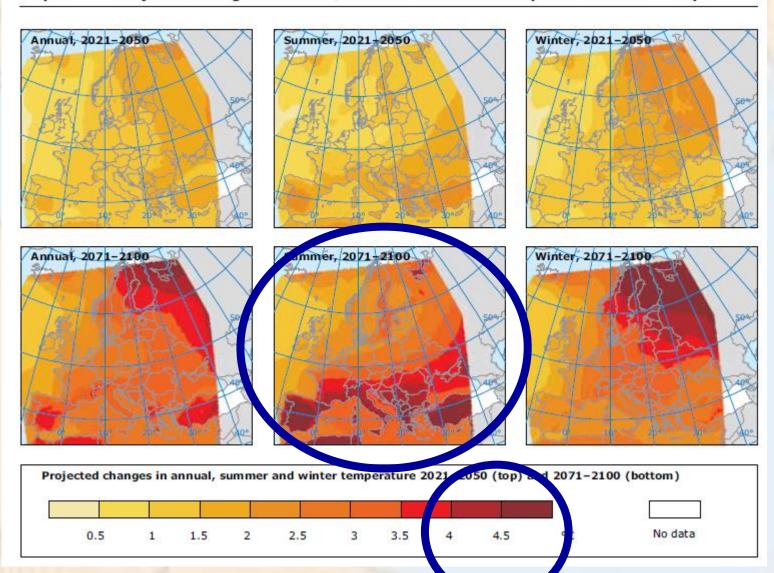




Climate change, impacts and vulnerability in Europe 2012 An indicator-based report

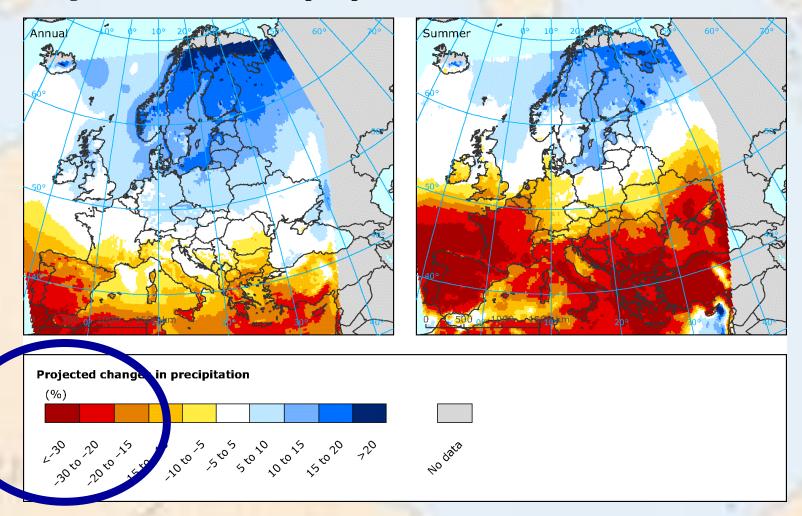


Map 2.2 Projected changes in annual, summer and winter temperature across Europe

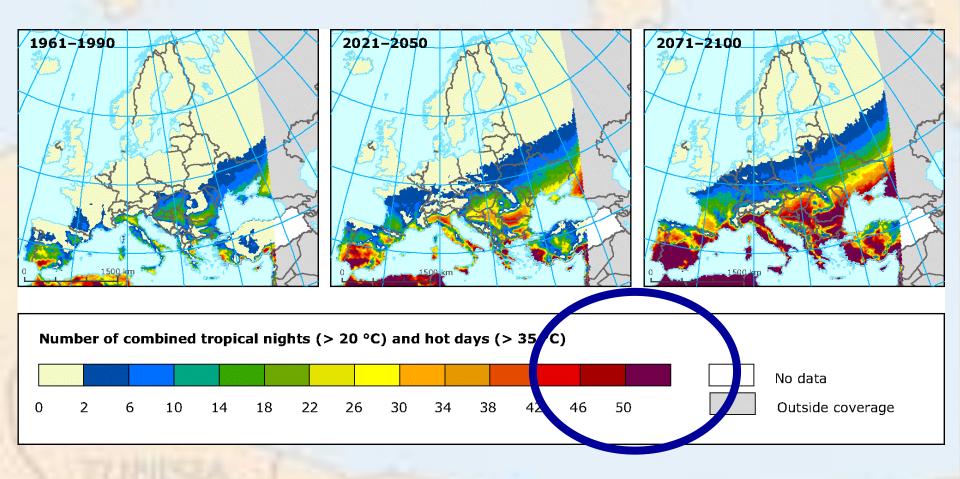


Maps of projected climatic changes in Europe (Based on Climate change, impacts and vulnerability in Europe 2012. European Environment Agency)

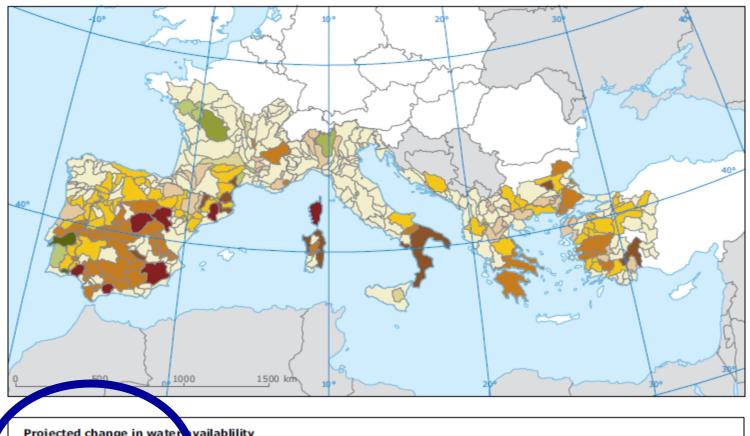
Change in annual and summer precipitation for 2071–2100 vs 1961–1990 (%)

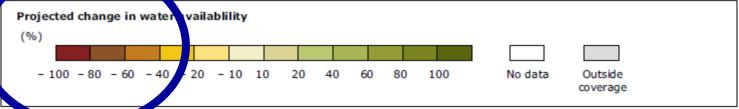


Average number of simultaneous hot days and tropical nights

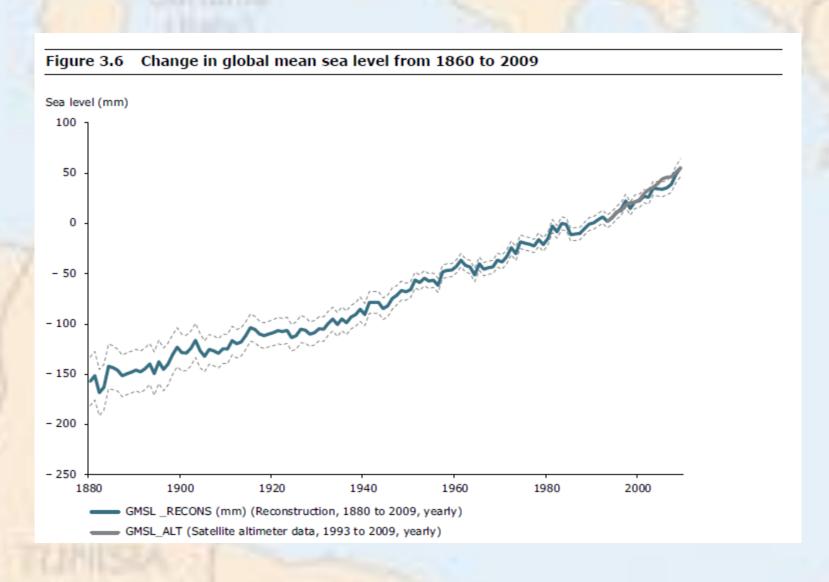


Map 4.8 Projected change in water availability for irrigation in the Mediterranean region by 2071-2100

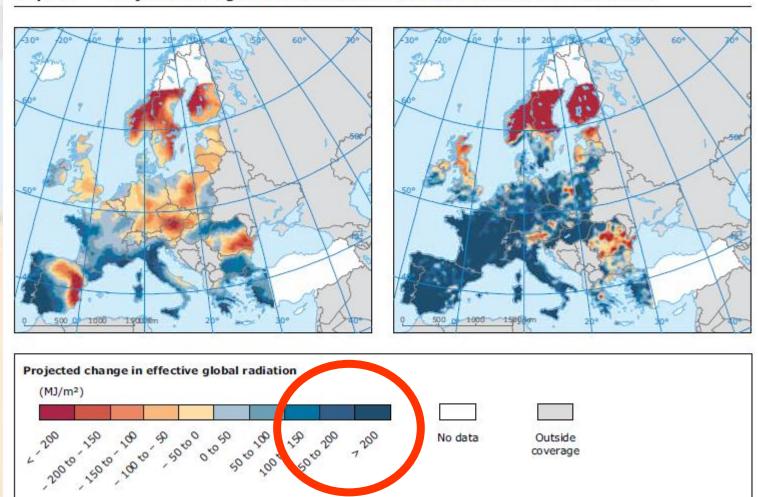




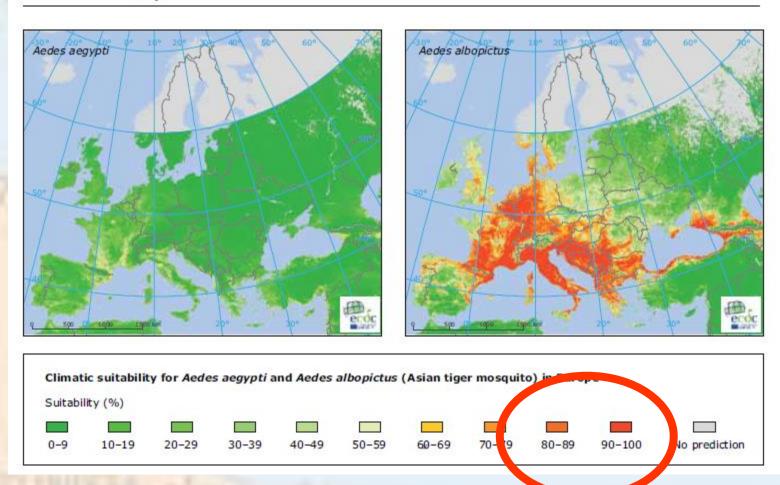
Note: Relative change in water availability for irrigation as projected under the A1B emission scenario by the HIRHAM (DMI) regional climate model for 2071–2100 relative to 1961–1990.



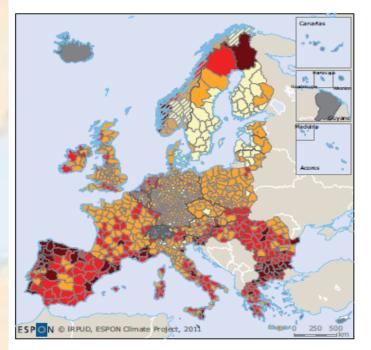
Map 4.4 Projected changes in effective solar radiation from two climate models

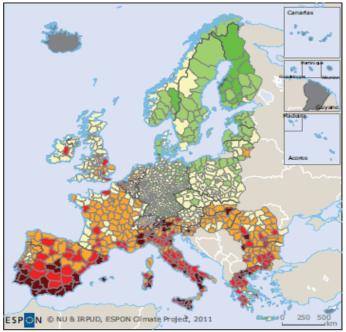


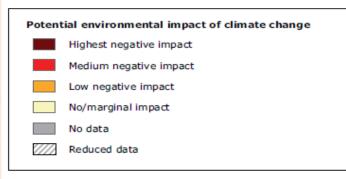
Map 4.15 Climatic suitability for the mosquitos Aedes aegypti and Aedes albopictus in Europe

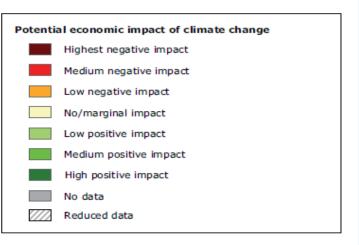


Map 5.4 Potential environmental and economic impact of climate change









Note: Normalised potential impacts aggregated from individual impact indicators on protected natural areas, forest fire-prone forests, soil organic carbon and soil erosion (environmental), and agriculture and forestry, energy production and consumption as well as summer and winter tourism (economic).

Source: ESPON Climate, 2011.









IPPC 5th Assessment Report 2014

Beach resorts, skiing holidays, diving and nature-watching trips will all suffer as the £3.5 trillion global tourism trade is hit by climate change, a report warns. The tourism industry, which provides livelihoods for 255 million people worldwide, faces profound impacts of rising temperatures and more extreme weather

WHERE ARE WE TODAY?



Contemporary narratives and anecdotes

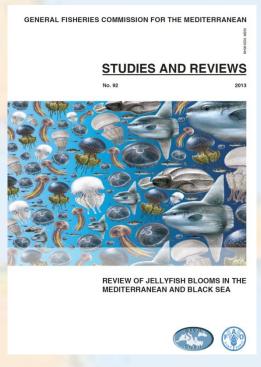
Water Scarcity?

Sunday, April 1, 2012, by Franco Mercieca Averting the imminent water crisis

- The Malta Water Association points out that Malta is among the 10 poorest countries globally in terms of water resources per inhabitant. (No. 172 of 180 countries in the UN's latest study of water resources)
- only some 60 cubic metres per inhabitant:
 Nowhere in Europe is water such an acutely scarce
 resource (European minimum 1000 cubic metres)



Changing Ecology and Eco-Systems?





Sunday, May 30,
2010, by Alan
Deidun
'Tis the season to be
jelly



The mauve stinger is arguably the most common jellyfish species in the Mediterranean

Giles Tremlett - the Guardian. Guardian 3 June 2013



Jellyfish surge in Mediterranean threatens environment – and tourists

A project is tracking the phenomenon as global warming and overfishing boost numbers of the venomous sea creature



"There are now beaches on the island of Lampedusa, which receives 300,000 tourists a year, where people can only swim for a week in the summer.

Other badly hit coastlines include Sardinia, Sicily, Malta and the eastern Mediterranean beaches of Israel and the Lebanon.

150,000 people were treated for jellyfish stings around the Mediterranean each summer.

The socio-economic impact on tourist areas is huge, We are losing millions of Euros"

Professor Stefano Piraino of Salento University



Jellyfish taking over oceans, experts warn By Karla Cripps, CNN



November 7, 2013

"Jellyfish and tourism are not happy bedfellows," says Dr. Lisa-Ann Gershwin, author of the recently published book, 'Stung! On jellyfish blooms and the future of the Ocean'

This past summer, southern Europe experienced one of its worst jellyfish infestations ever.

"Review of Jellyfish Blooms in the Mediterranean and Black Sea," by Fernando Borea for the General Fisheries Commission for the Mediterranean and the United Nations, scientists are catching up to what travellers in the Med have been experiencing for years.

The situation in the Mediterranean was dire enough to prompt Britain's foreign office to issue a warning to its citizens vacationing along Europe's southern coast to watch out for jellyfish.

Friday, July 13, 2012, by **Kurt Sansone It's officially a heatwave**



- temperatures have soared more than five degrees higher than the mean maximum temperature for July, 31.6°C
- The combination of wind, humidity and heat, however, gave the impression that temperatures were as high as 45°C.
- Enemalta confirmed the heat created more demand and put its distribution system under stress causing power cuts in several localities.

Tuesday, October 12, 2010, by Nikki Abela Mercieca 'More fall victim to Asian mosquito'

'Doctors reported an increase in patients coming forward with mosquito bites this summer, according to the Health Department, which attributes this to the Asian Tiger mosquito'.

Wednesday, October 3, 2012, by Kristina Chetcuti
Malta under attack from mosquitoes
'Several people contacted The Times concerned that vicious mosquito attacks were not normal for this time of the year'.





"Shame about the mosquito problems" Reviewed January 2, 2009

• it was very difficult to sleep at all due to the mosquito problem, not only in my room, but after discussing matter with other guests in their rooms too!

tripadvisor®

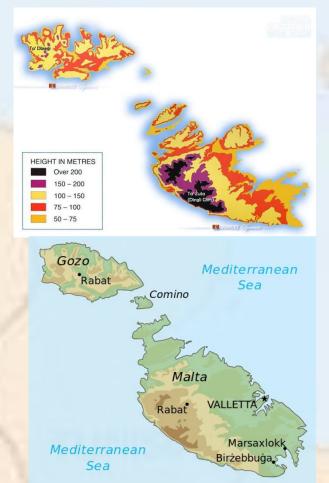
Sunday, June 8, 2014, by Caroline Muscat Predicted sea level rise 'will hit whole of Malta' Climate change expert's warning after NASA publishes gloomy report

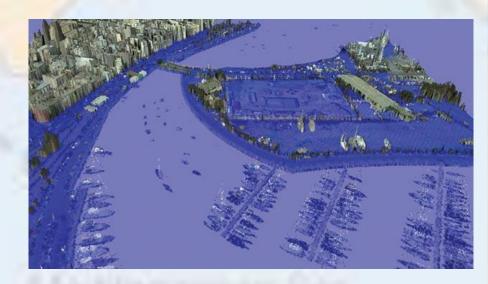
sea levels could rise by more than one metre would likely impact Malta, according to a climate change expert.

International Maritime Law Institute director David Attard believes the findings are a cause for concern: "The increase is considerable and could wipe out huge coastal areas and certainly some island states... sea level rise will have a particular effect on the ecology of the coasts, and in the case of Malta, likely impact the whole country."

This is what the Maltese islands will look like if the sea level rises by 50 metres.. Gozo will have less impact as its topographical average is higher than Malta.

September 2013 by Ari

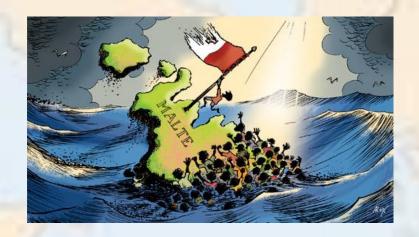




A projection of how Manoel Island and The Strand, Sliema, would look with a 0.5m sea level rise. Artwork: Saviour Formosa, University of Malta

immigration







Tuesday, December 10, 2013, 00:02 Malta's moment of truth on immigration

Malta receives the highest number of asylum applications in the world in relation to its population.

The migrants, mainly from sub-Saharan Africa, are hard to miss in a nation that previously saw very few foreigners.

Concerns about a "cultural invasion" have been expressed; anecdotes abound of rising crime in areas populated by migrants, though there is no evidence to support this; and racist assaults have begun to occur.

A sustainable recipe for tourism?

- ADVERSE CLIMATE CHANGE PREDICTIONS
- TOURISM GROWTH 9%+ pa
- CHANGING PATTERNS OF TOURISM
- RESOURCE AND SPATIAL LIMITATIONS & SHORTAGES
- ECONOMIC-POLITICAL UNCERTAINTY
- 97% DEPENDENCY ON AIR TRANSPORT
- NEGATIVE ENVIRONMENTAL IMPACT
- CHANGING MARINE AND LAND ECOLOGIES

THE FUTURE?



CLIMATE DISTURBANCE **GOVERNANCE** and **FINANCE**



LOCAL RESOURCES

DYNAMIC FORCES

1. Validity of climate change?

2.Unpredictable Tourist Socio-Economic- Political Factors

3.Increased need for future management responses

4. Ongoing research

ECONOMIC
DEVELOPMENT
& GROWTH

MEDIA

LEGAL HEALTH AND SAFETY

THE TOURISM INDUSTRIES



VISITORS

ENVIRONMENTAL & MITIGATION LOBBY





