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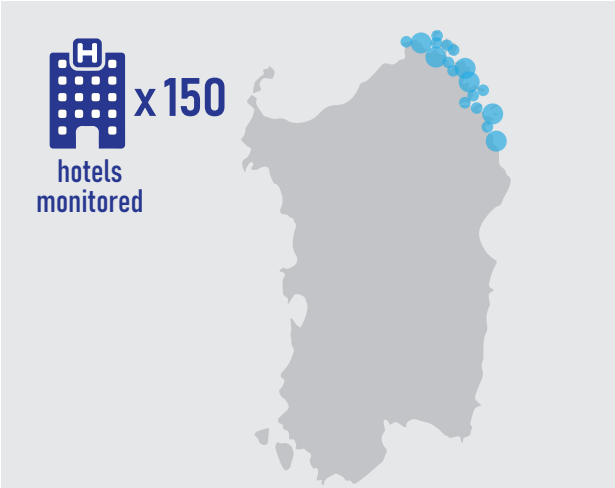
HOW DO INCREASING TEMPERATURES (AND HEAT WAVES) IMPACT HOTELS' PRICES AND REVENUES FOR COASTAL AREAS IN ISLAND DESTINATIONS?

METHODOLOGY

We monitored current weather conditions posted on several weather forecast providers and daily prices posted on Booking.com by hotels. We then estimated the link between daily temperature and daily price, controlling for all the other factors affecting prices.

We finally applied these estimates to the increase in the number of days with excessive temperature projected for the future in two scenarios (RCP2.6 and RCP8.5) and in two time horizons (near future, about 2050; distant future, about 2100).

As thermal stress is delimited in the summer months, and this is when the great majority of tourists arrive in these islands, the whole analysis has been carried out in six months only: from May to October included.



The North-East area of Sardinia
(Costa Smeralda).

Actual share of days in which humidex > 35 degrees	Future scenario considered	Days in the corresponding scenario in which humidex > 35 degrees	Increase in the average price ↑	Increase in the tourism overnight stays ↑	Increase in tourism revenues ↑
27.23%	rcp26near	35.78%	3.3%	0.7%	4.0%
	rcp26far	35.07%	3.0%	0.6%	3.7%
	rcp85near	37.59%	4.0%	0.8%	4.9%
	rcp85far	61.48%	13.3%	2.7%	16.3%

Source: Report D5.3

At present, 27.23% (column 1 of the table below) of "summer" days (days in the period between 1 May and 31 October) have a HUMIDEX higher than 35 Celsius degrees in the area under investigation (Costa Smeralda).
In the future, this share (column 3) will increase to about 35-36% in rcp2.6, to 37.59% in rcp8.5 near, and to 61.48% in rcp8.5, distant. Consequently, demand for holidays in Sardinia will increase and the new equilibrium shows an increase in the average price posted by hotels in the destination (column 4) and an increase in overnight stays (column 5, this is estimated using the past correlation between average prices and occupancy rates in hotels, data provided by STR). The joint impact of price and demand will lead to an increase in hotels revenues (last column of the table) and, assuming that the change in revenues spreads to the other tourism products in a similar way, an increase in tourism revenues for the whole destination will be recorded. Hence, the estimation reported in the last column of the table below can be interpreted as the percentage increase in tourism revenues for the island.