

La grande sfida del cambiamento climatico

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GOVERNARE IL TERRITORIO NEL TERZO MILLENNIO
Bologna, venerdì 13 marzo 2015



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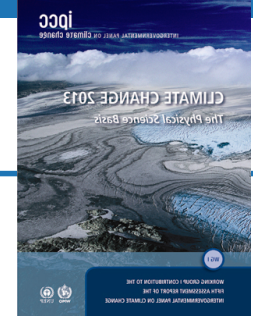
Silvio Gualdi

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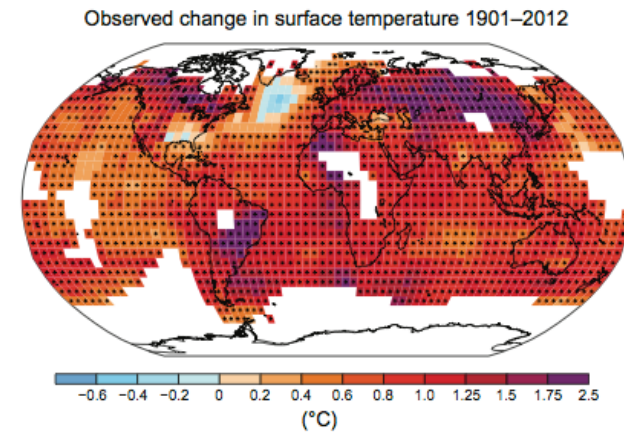
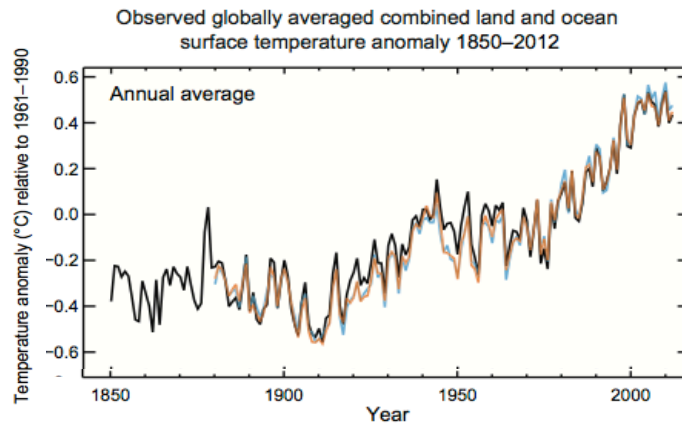
La sfida scientifica: il cambiamento del sistema fisico



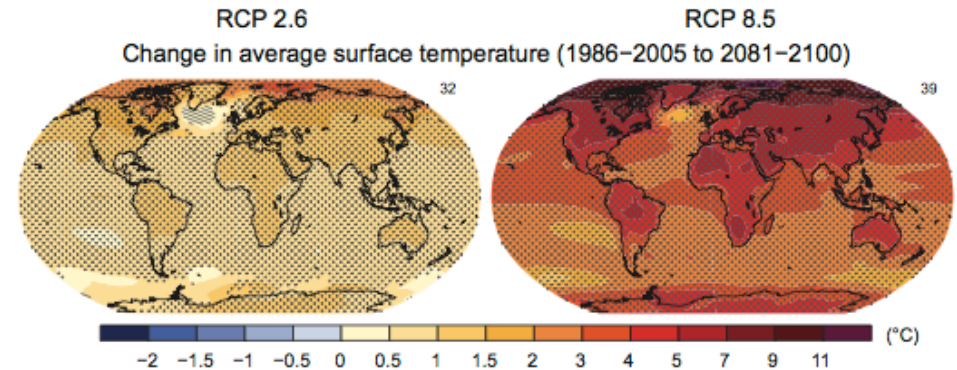
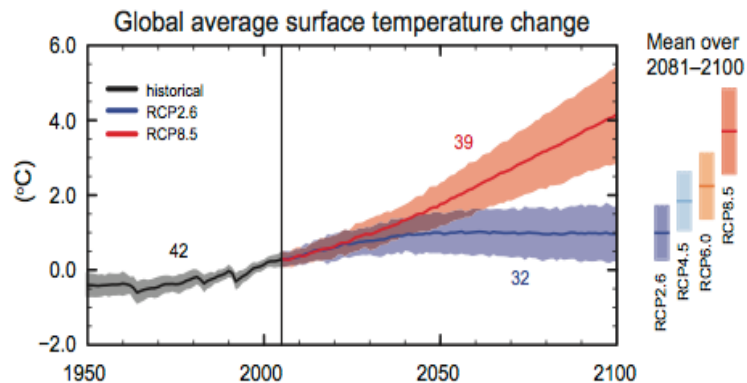
IPCC, 2013

Cambiamento della temperatura

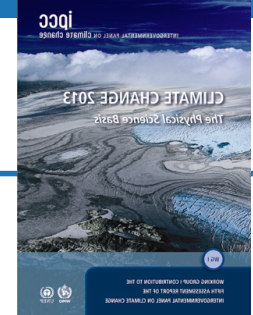
Presente
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Futuro



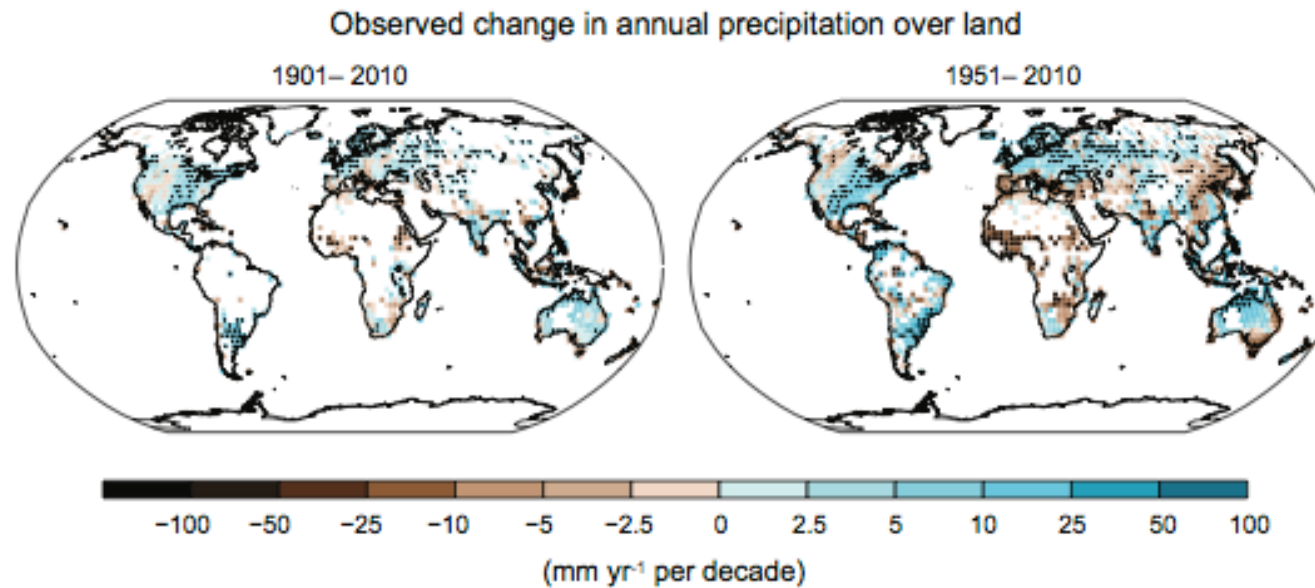
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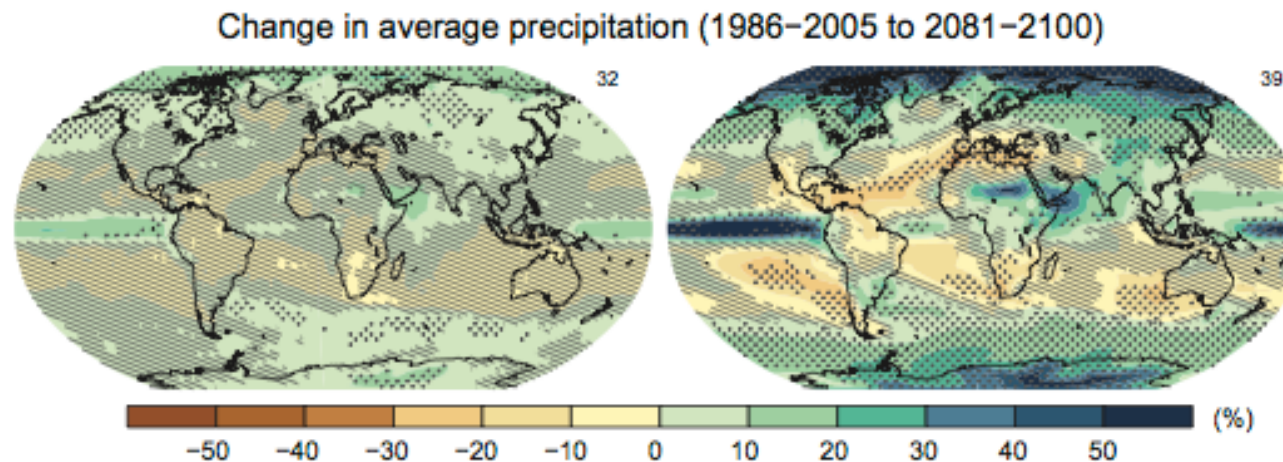
IPCC, 2013

Cambiamento della precipitazione

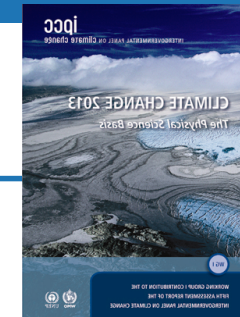
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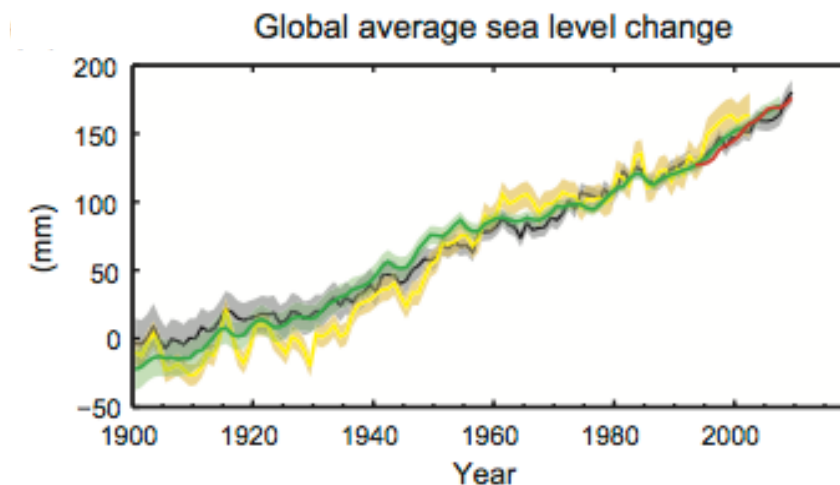
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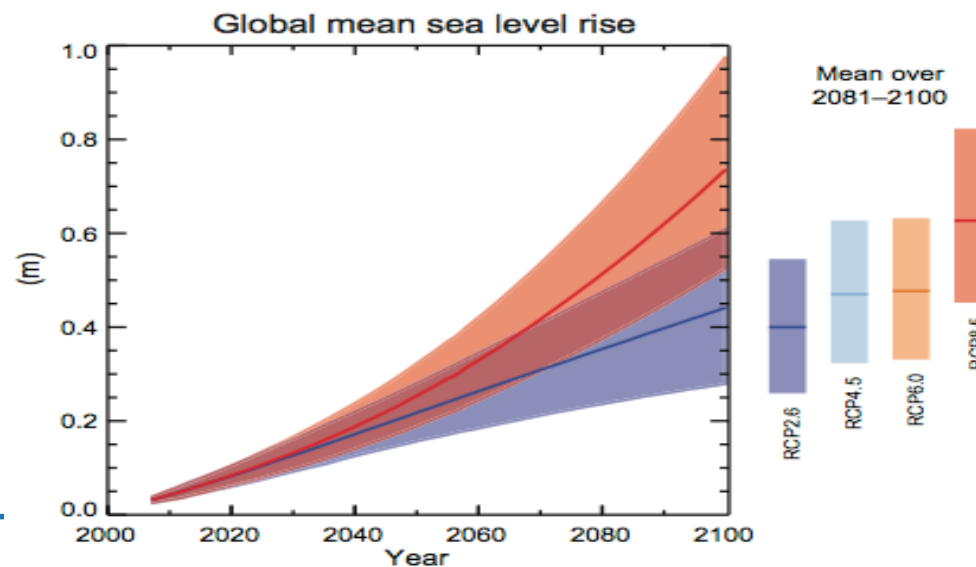
IPCC, 2013

Cambiamento del mean sea-level

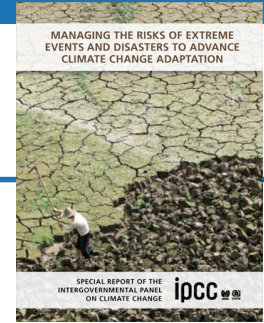
Presente
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Futuro



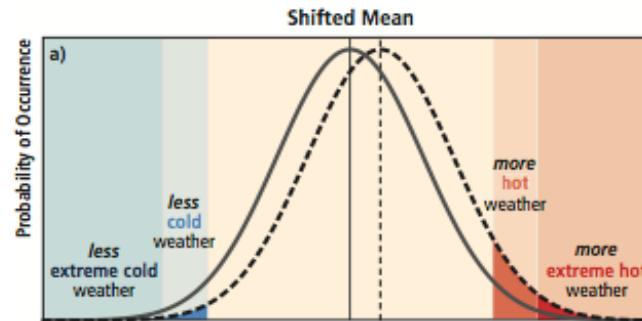
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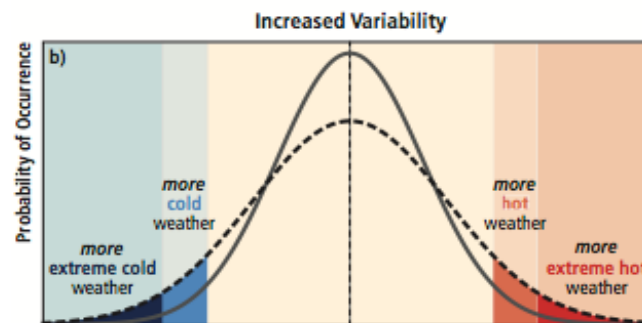
SREX, 2011

The effect of changes in temperature distribution on extremes

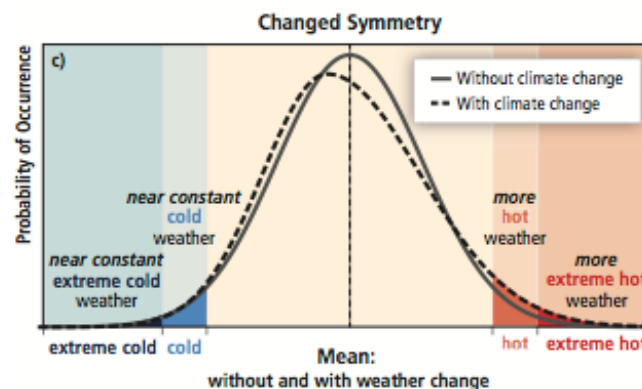
effects of a simple shift of the entire distribution toward a warmer climate



effects of an increase in temperature variability with no shift in the mean



effects of an altered shape of the distribution



Different changes in temperature distributions between present and future climate and their effects on extreme values of the distributions



Climate Change Projections in the Mediterranean region

Athens Case Study: heat-waves

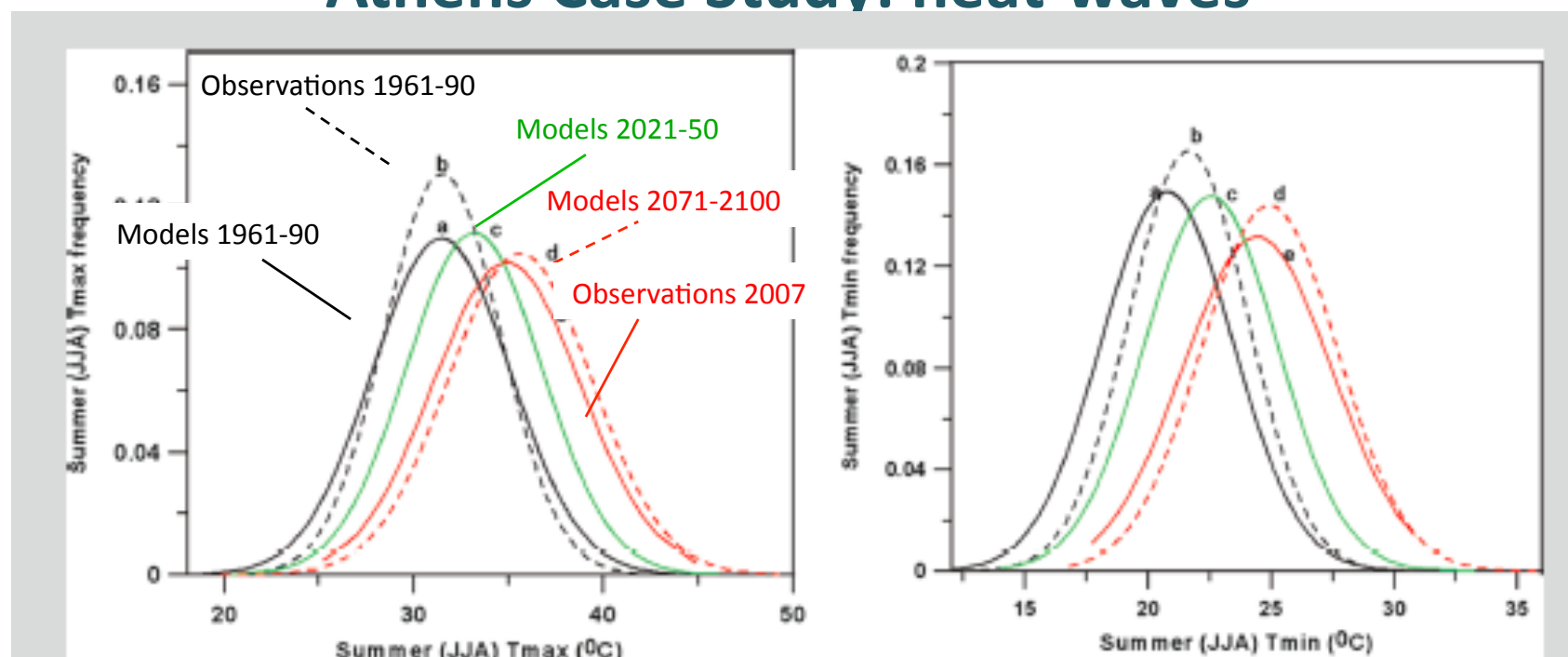
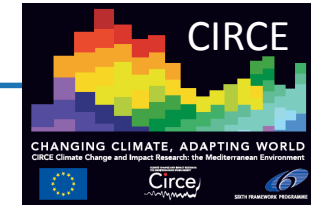


Fig. 5.5 Probability density function (pdf) of Gaussian distributions fitted to Athens JJA maximum (*left*) and minimum (*right*) temperature for the following cases: (*a – solid black*) model output for 1961–1990, (*b – dashed black*) NOA observations for 1961–1990 (*c – green*) 2021–2050 model simulations, (*d – dashed red*) 2071–2100 model simulations and (*e – solid red*) summer 2007 (NOA observations)



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Climate Change Projections in the Mediterranean region

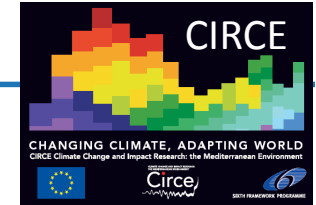
Detection of the climate change signal on specific areas representative of the Mediterranean environment

	Observed			Projected (2021–2050)		
	Mean T	High T	Mean P	Mean T	High T	Mean P
Athens	↑	↑	(↑)	↑	↑	↓
Alexandria	↑	↑	(↑)	↑	↑	↔
Beirut	↑	↑	↔	↑	↑	↓
Tuscany	↑	↑	↓	↑	↑	↓
Apulia	↑	↑	↓	↑	↑	↓
Judean Foothills	↑	↑	↔	↑	↑	(↓)
Tel Hadya	↑	–	↔	↑	↑	↓
Gulf of Valencia	↑	–	↑/↔	↑	↑	↓
Gulf of Oran	↑	–	↓	↑	↑	↓
Gulf of Gabès	↑	↑	↔	↑	↑	↓
West Nile Delta	↑	↑	(↑)	↑	↑	↔

↑: observed/projected increase, ↓: observed/projected decrease, ↔: no trend/change identified. Brackets () indicate very small/uncertain trends/changes. –: not analyzed



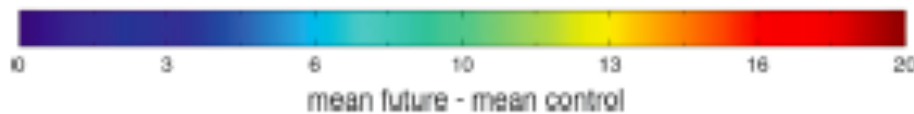
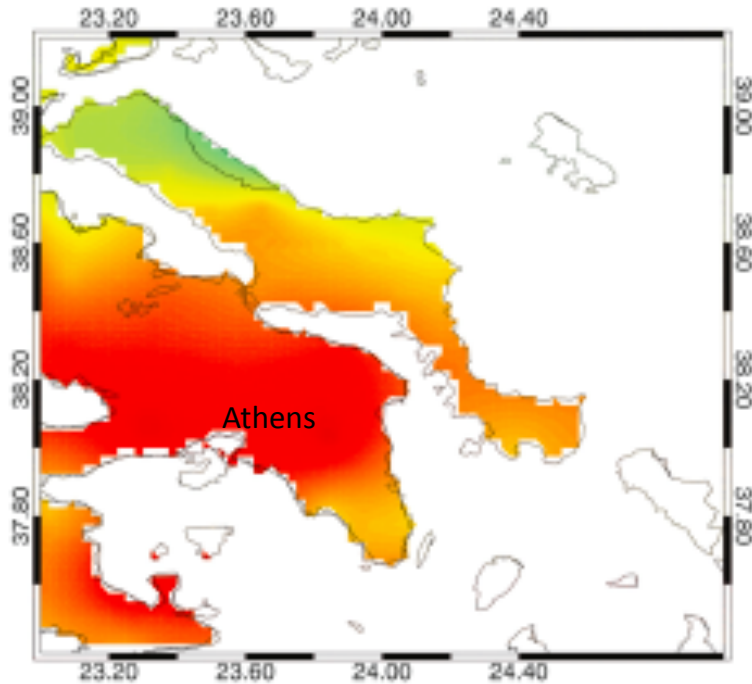
La sfida socio-economica: gli impatti



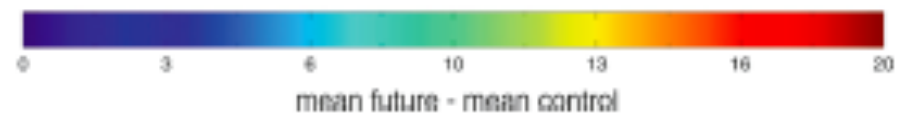
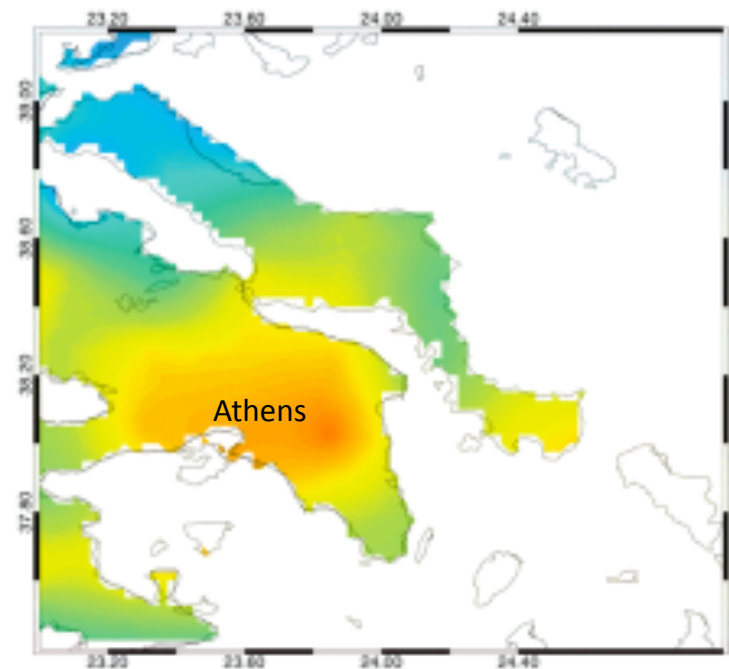
Climate Change Projections in the Mediterranean region

projected changes (2021-2050) – (1961-1990)
in the number of days with fire risk

Num. of days with high fire risk (FWI > 15)

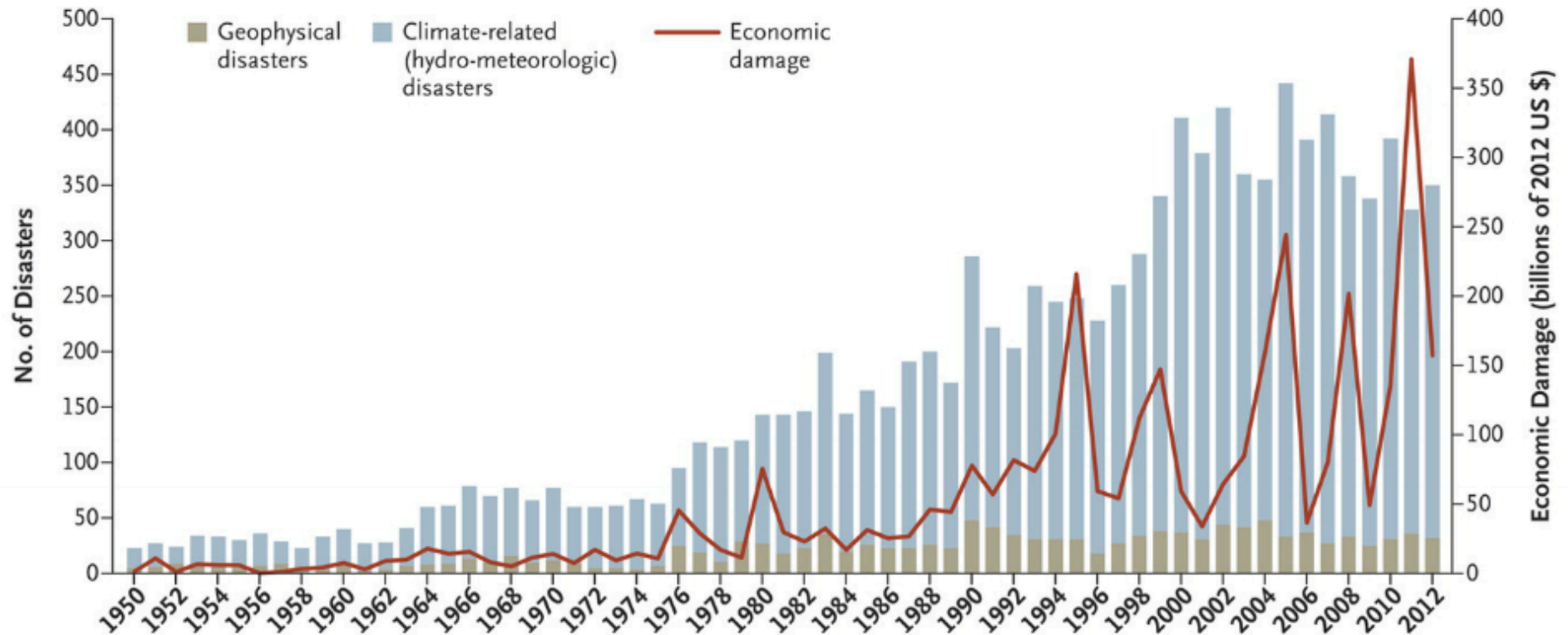


Num. of days with extreme fire risk (FWI > 30)



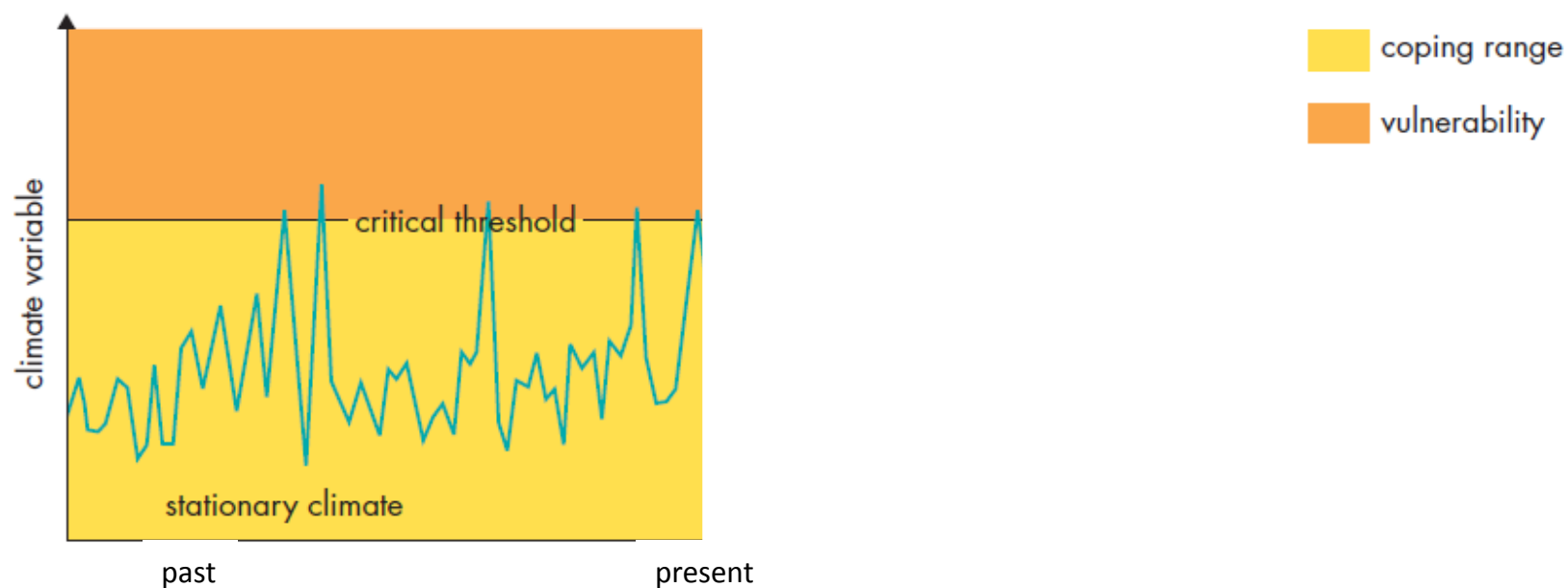
La sfida socio-economica: gli impatti

Andamento dei disastri naturali e relativi costi negli ultimi 60 anni



La sfida dei decisori della politica e dell'impresa: l'adattamento

Gestione dei rischi ambientali connessi alla variabilità ed ai cambiamenti climatici

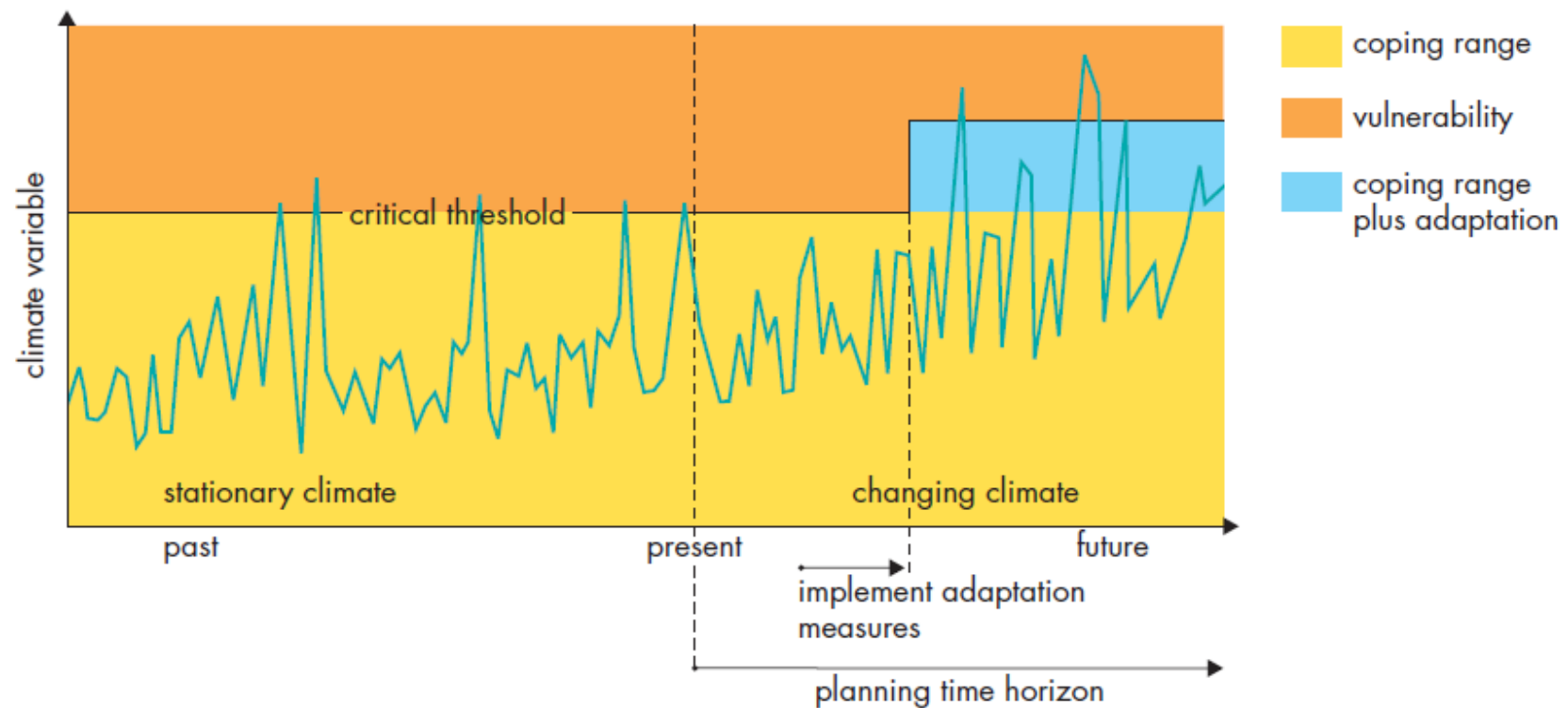


Fonte: Willows, R.I. and Connell, R.K. (2003) Technical Report UKCIP



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Gestione dei rischi ambientali connessi alla variabilità ed ai cambiamenti climatici



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Grazie

