

# Sardinia's adaptation to climate change



## Sustained socio-economic development in Sardinia requires sustainable use and optimal allocation of limited resources

### Key achievements

- The development of a System Dynamics Model for Sardinia with a strong focus on energy-water resources analysing possible future pathways
- Development of methane deployment and distribution across the island appears as a must to reduce energy costs, but its implementation is controversial in terms of reaching carbon neutrality
- Water management rules must be re-elaborated and distribution systems restructured to adapt to climate change and the strong climate variability.
- Coordination at the governance level requires implementation of a Nexus approach and policies.

### Findings

Reaching resource efficiency, carbon neutrality and water sustainability under Climate Change scenarios in Sardinia faces challenges by a fast-decreasing population and a relatively low income per capita. The assessment revealed that sustainable use of water resources can be reached, also under climate change projections, by implementing relatively few technological and governance solutions.

Investing in the development of the forestry sector will be beneficial for reaching carbon neutrality. However, present national and regional policies need to be deeply re-elaborated as they pose severe restrictions to the sector. To reach carbon neutrality, Sardinia must increase the energy efficiency of buildings and accelerate power generation from renewable resources.

### Key publications

[Masia S., J. Sušnik, S. Marras, S. Mereu, D. Spano, A. Trabucco \(2018\) Assessment of irrigated agriculture vulnerability under climate change in Southern Italy. \*Water\*, 10\(2\), 209.](#)

[Sušnik J., C. Chew, X. Domingo, S. Mereu, A. Trabucco, B. Evans, L. Vamvakieridou-Lyroudia, D. Savić, C. Lapidou, F. Brouwer \(2018\) Multi-stakeholder development of a serious game to explore the water-energy-food-land-climate Nexus: the SIM4NEXUS approach. \*Water\*, 10\(2\), 139.](#)

[Regional Strategy of Adaptation to Climate Change—Sardinia Regional Ministry of Environment](#)



**Donatella SPANO**  
UNISS/CMCC  
✉ [spano@uniss.it](mailto:spano@uniss.it)

**Simone MEREU**  
UNISS  
✉ [smereu@uniss.it](mailto:smereu@uniss.it)

**Antonio TRABUCCO**  
CMCC  
✉ [antonio.trabucco@cmcc.it](mailto:antonio.trabucco@cmcc.it)