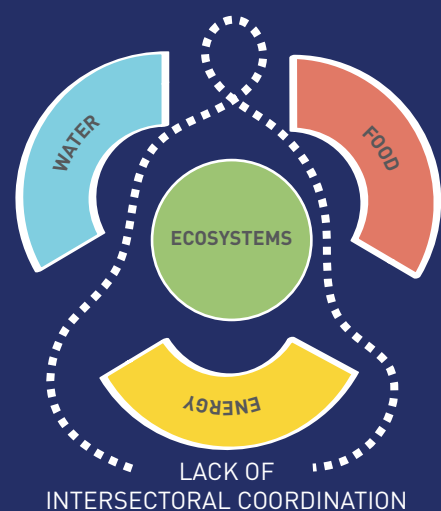


Cradle of ancient civilisations, The Mediterranean Basin encompasses diverse cultures, climates, and ecosystems. The Mediterranean climate, marked by hot, dry summers, and mild, wet winters, supports rich biodiversity and fertile lands.

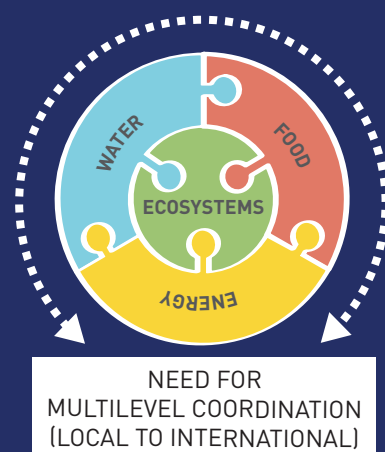
The Mediterranean is a climate change hotspot where both human societies and ecosystems face high exposure and vulnerability. Population and economic growth, agricultural intensification, urbanisation, pollution, and unsustainable resource management impact the level of insecurity for water, energy, food, and ecosystems (WEFE), putting the capacity of Mediterranean countries to reach the Sustainable Development Goals (SDGs) of the 2030 Agenda at risk.

NEXUS (noun): a connection or series of connections linking two or more things.

SILO APPROACH



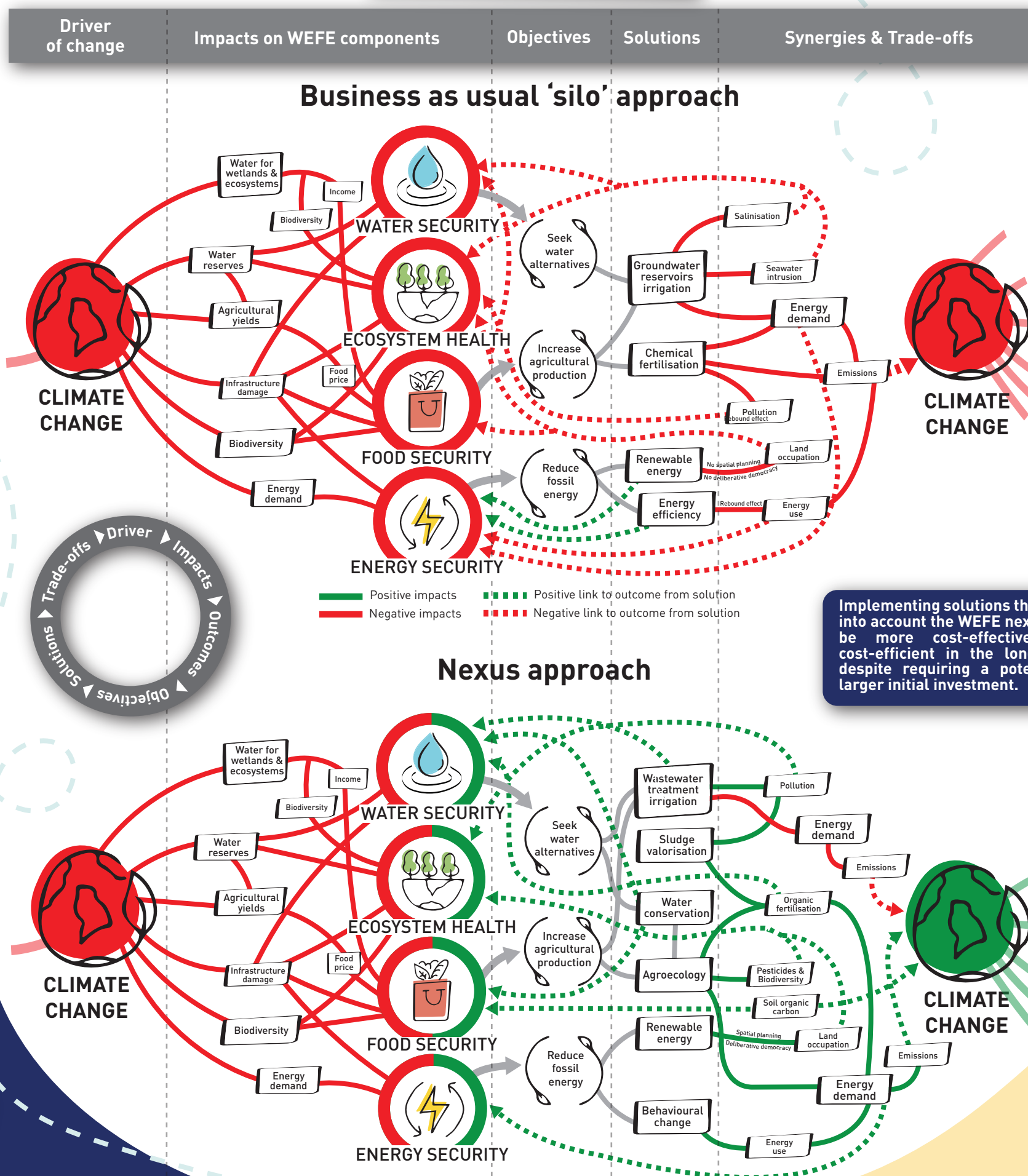
NEXUS APPROACH



The **WEFE nexus approach** provides a comprehensive framework to address challenges in the development of sustainable solutions and the prevention of detrimental cascading effects that could further harm the region's communities and ecosystems.

CLIMATE CHANGE AND THE WATER-ENERGY-FOOD-ECOSYSTEMS (WEFE) NEXUS

in the Mediterranean Basin



Implementing solutions that take into account the WEFE nexus can be more cost-effective and cost-efficient in the long run, despite requiring a potentially larger initial investment.

Exploring solutions for sustainable management

A nexus approach to adaptation and mitigation actions promotes synergies between the WEFE components and minimises potential trade-offs.

Integrated resource management

Improved irrigation could save up to 35% of water. With 2°C warming, agricultural droughts may become 150–200% more frequent in southern countries.

Integrated management links water, energy, food, and ecosystems. Adaptation actions like planting drought-resistant crops reduce water use and enhance food security. Using renewable energy in agriculture is a successful mitigation measure.

Technological innovation

Renewables made up only 11% of total energy consumption in 2020. Projected streamflow declines could reduce hydropower and thermoelectric output by up to 7% and 15% respectively by the 2050s.

Solar-powered desalination and agrivoltaics can optimize energy use if supported by spatial planning and public consultation. Renewable energy in the Mediterranean supports water, ecosystems, food, and energy—when it avoids high environmental costs and resource degradation.

Nature-based solutions

Between 2002 and 2009, average fertiliser consumption in 21 Mediterranean countries, mainly in the Euro area, was 188 kg.ha⁻¹, higher than the worldwide average (116 kg.ha⁻¹ of arable land).

Agroecological practices in the Mediterranean involve biodiversity and crop diversity management, increasing soil organic matter, reducing fossil fuel dependence, managing extensive herds, using local breeds, and pasture and forage management. These practices enhance adaptation to climate change and ecosystem services, while reducing GHG emissions.

Social innovation & behavioural change

Western-style industrialised diets have been identified as drivers of the region's ecological deficit, including increased GHG emissions, changes in land use, energy use, and water use. On average, the ecological footprint of food production in the Mediterranean has increased by 47.4% while the biocapacity has decreased by 36.4%.

Greater adherence to the Mediterranean diet could cut GHG emissions by 72%, land use by 58%, energy use by 52%, and water use by 33%.