



Union for the Mediterranean  
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## 2020 WEF E Nexus Science Advances

First announcement of the Conference on Water-Energy-Food-Ecosystems  
Nexus scientific advances in the Mediterranean region

*Nicosia (Cyprus), 22 – 23 September 2020*

### Rationale

The challenge we face is clear: the burden on natural resources is escalating due to climate change and overexploitation of ecological capacities. Fertile soils worldwide are increasingly suffering from desertification, thus threatening the income base for farmers. There is increased demand for energy for cooling and heating in urban areas, while energy turbines are becoming less efficient, especially during extreme weather conditions. Lack of water and intensive pumping destroys aquifers, causing irreversible environmental damage. Water desalination is expensive and energy intensive.

While this picture applies across the planet, the Mediterranean region is facing an unprecedented combination of changes that are likely to undermine livelihoods. Sustainable development in the region cannot be achieved by considering the management of water, energy, food and ecosystems as separate resources. As these sectors are strongly interlinked, water allocation regimes will have to improve in order to cope with current and future shifts in water availability and demand. Effective and equitable allocation of water across interdependent sectors is indeed a major determinant in achieving social stability and prosperity.

The Water-Energy-Food-Ecosystems (WEFE) Nexus is gaining increasing attention in policymaking and research communities as a means of addressing these interdependencies and as an approach for operationalising the United Nations' 2030 Agenda for Sustainable Development. This is evident in the rapidly growing literature in the field. However, most of the published studies merely debate the need to fully understand the interdependencies between the WEFE sectors, with few examples of successful ground-level WEFE Nexus practices.

Answering the broad range of questions embraced by the Nexus concept is clearly a challenging process. The role of the research community is to support this process by pooling together multi-disciplinary competences to show decision-makers the co-benefits of and trade-offs between future energy, food and ecosystem security plans and water policies. In this way, scientists and stakeholders will not only be able to “speak the same language”, but also to agree on best practices and solutions to be shared and used across country borders. Partnerships are therefore essential to tackle WEFE cross-sectoral challenges.

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## Delivering Conference content

The 2020 WEFE Nexus Science Advances Conference will focus on the role of science as a driver of innovation and its interface with the policymaking process. The Conference will look at the four aspects of the WEFE Nexus from different perspectives (e.g. through the eyes of economists, sociologists and end users) and canvass opinions on how to approach the cross-sectoral management of WEFE resources. Participants will include scientists, business and water practitioners, professional organisations as well as governmental and regional policymakers and NGOs from across the Mediterranean countries, all brought together to:

- Explore capacity for cross-sectoral analyses of the use of natural resources by exchanging knowledge on the development, use and demonstration of Nexus methodologies applicable across scales;
- Promote the collection of best WEFE Nexus practices in the Mediterranean region and the incorporation of lessons learnt into hands-on guidance for the development of innovative and economically viable roll-outs;
- Elaborate on the role of a WEFE Nexus Community of Practice to stimulate cross-organisation collaboration and knowledge sharing in the Mediterranean region.

The Conference is organised by the Joint Research Centre (JRC) of the European Commission, the Union for the Mediterranean (UfM), the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) and the Cyprus Institute (Cyl). The outcomes of the Conference will contribute to the objectives set out in the UfM Water Declaration<sup>1</sup>, the Strategic Research and Innovation Agenda of PRIMA<sup>2</sup> and the actions proposed by the European Commission in the roadmap of the new European Green Deal<sup>3</sup>.

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## Format

The Conference will be highly participatory with discussions at the science-to-policy interface triggered by keynote speakers who will review the state-of-the-art of a particular area. Most of the time will be dedicated to challenging current practices and gathering inspiring evidence of (effective) policy solutions through high-level panels, masterclasses and group work. Poster sessions are also planned.

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## What will we achieve together?

- Mobilise scientific competences to address interdependencies of policy portfolios
- Obtain access to a broad Community of Practice for an exchange of expertise in the management of WEFE resources in the Mediterranean region
- Enhance the use of science-based evidence and foresight in policymaking
- Explore implications for the science and innovation communities of latest developments in the Euro-Mediterranean policy agenda

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<sup>1</sup> <https://ufmsecretariat.org/ufm-water-expert-group-weg/>

<sup>2</sup> <http://prima-med.org/about-us/prima-in-brief/>

<sup>3</sup> [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)

## Practical information

The Conference will take place at the Cyprus Institute in Nicosia (Cyprus). Further information on registration will be made available on the websites of the organising institutions soon after this first announcement. No registration fee is foreseen for participation in the 2-day event.

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### Draft Agenda

Tuesday, 22 September 2020

#### *Opening of the Conference*

- Reflections on the practice and regional challenges to the management of Water–Energy–Food–Ecosystems (WEFE) resources in relation to the Mediterranean water agenda and the global development agenda.
- Introduction of the WEFE Nexus assessment for the Mediterranean region, a collaborative effort of the EC Joint Research Centre, the Union for the Mediterranean, the GWP-Med Global Water Partnership for the Mediterranean and institutions from all shores of the Mediterranean region.

#### *The research agenda for energy-water interdependencies*

The expected impact of climate change on the Mediterranean during the coming decades will lead to an increasing demand for water and energy, two intimately related sectors. This session focuses on prospects for science- and technology-based solutions to this nexus issue. Discussions will address how science can support cross-sectoral negotiations and propose solutions that accommodate the need to supply energy and power while taking into account the decarbonisation of the energy sector and a reduction of impacts on the limited Mediterranean water resources.

#### *Analysing the changing space for water in Mediterranean agriculture*

The aspiration of Mediterranean regions to maintain local agricultural and social traditions is in conflict with security issues deriving from the increasing rate of population growth and the capacity of the water sector to cope with the increasing demand for food. This session focusses on how science can support stakeholders in innovative planning and operation of the water-agriculture nexus, and is expected to yield concepts and ideas for subsequent development.

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Wednesday, 23 September 2020

#### *Mapping options to address trade-offs in water allocation across the four aspects of the WEFE Nexus*

Currently, the cross-sectoral approach to the management of WEFE resources is not systemically incorporated in decision-making. The role of science is to quantify the socio-economic trade-offs between competing water uses, thus demonstrating the benefits of such an approach. This session will highlight scientific findings and analyse the array of options available to design water allocation regimes that contribute to multiple management objectives. It will also address how to integrate a balanced perspective on the social and economic role of ecosystems, which should not pay the price of the intensifying water scarcity.

#### *Designing practical pilots to show economic and socio-ecological benefits*

It is not technical solutions that are lacking, but public acceptance. We need to translate the WEFE Nexus concept into social and economic terms and show the return to stakeholders. Process design is then crucial to support intersectoral dialogues. The task for the working groups will be to offer demonstration cases likely to show the economic and socio-ecological benefits of the WEFE Nexus

approach. Participants will discuss this and make proposals that take into account the feedback received on the questions raised in the previous sessions.

### *Enabling partnerships*

Each group will present the ideas for practical case studies developed during the breakout session. On this basis, discussions will focus on the formation of a Community of Practice designed to engage partners in hands-on WEFE Nexus assessments of selected cases in the Mediterranean region, based on voluntary contributions made by competent partners.

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## About the organisers

*EC JRC: European Commission Joint Research Centre* <https://ec.europa.eu/jrc/>

As the in-house science service of the European Commission, the JRC's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle. In this context, the JRC provides scientific assessments to address societal and economic challenges that derive from the evolving vulnerability of the European and global water environment. In this context, it supports several pieces of water-related legislation, including the Water Framework Directive (WFD) and its associated daughter Directives, develops modelling tools to predict the impacts of climate change on water, assesses water governance in developing countries and carries out studies on the preservation of ecosystems.

*UfM: Union for the Mediterranean* <https://ufmsecretariat.org/>

The UfM's mission is to enhance regional cooperation, dialogue and the implementation of projects and initiatives that have a tangible impact on citizens, with an emphasis on young people and women, in order to address the three strategic objectives of the Mediterranean region: stability, human development and integration. Because of its geographical composition, institutional governance and working methodology, the UfM is the ideal organisation for taking into account the priorities of both the EU – as reflected in the reviewed European Neighbourhood Policy and the Global Strategy on Foreign and Security Policy – and the Southern and Eastern Mediterranean countries.

*PRIMA: Partnership for Research and Innovation in the Mediterranean Area* <http://prima-med.org/>

By funding R&I through competitive calls, PRIMA aims to build research and innovation capacities and to develop knowledge and common innovative solutions for agri-food systems (to make them sustainable) and for integrated water provision and management in the Mediterranean area (to make those systems more climate resilient, efficient, cost-effective and environmentally and socially sustainable), and to contribute to solving water scarcity, food security, nutrition, health, well-being and migration problems upstream. PRIMA consists of European Union Member States, Horizon 2020 Associated Countries and Mediterranean Partner Countries who participate on an equal footing with the European Commission, under the framework of art.185 of the TFEU.

*Cyl: The Cyprus Institute* <https://www.cyi.ac.cy/>

The Cyl is an international science, technology and educational organisation with an overarching mission to strengthen the research community and culture of Cyprus in order to help transform its economy to a knowledge-based one, and to serve as a research and innovation hub for the Eastern Mediterranean region by addressing issues of regional relevance and global significance. Recognising the unique geopolitical location of Cyprus, Cyl aspires to serve as a European Union gateway to research and technology in the Eastern Mediterranean and Middle East (EMME) region and, in this way, advance peace and prosperity and promote cooperation among the peoples of the EMME region for the betterment of their future.