



Regional Process Session Description

1. Reference Session Title

RM1. WEFE Nexus (Water/Energy/Food/Environment)

2. Description*

As the effects of Global Change become more intense in the Mediterranean Region, other external factors such as the Covid-19 pandemic and the war in Ukraine are putting the endemic problems of water scarcity under major stress, as well as inflating conflicts in water use. In this complex and challenging context, both the SDGs and the Ecological Transition policies demand specific and immediate actions to reach the globally accepted goals and objectives in terms of decarbonization and clean energy production, universal access to water and sanitation, drastic reduction of poverty and hunger and sustainable use of natural resources. Achieving these objectives requires a holistic and integrated approach, as the interactions between the different sectors are becoming more intense. For this reason, the analysis of the WEFE (Water - Energy - Food - Environment) Nexus is no longer an analytical tool to further understand the complex interconnections, but a mandatory instrument to develop sustainable and efficient solutions that tackle the mentioned global challenges.

The WEFE Nexus is becoming increasingly important in the development of water policies in the Mediterranean region. The Med region is particularly vulnerable to the interrelated challenges of water scarcity, food security and climate change, and the WEFE Nexus approach offers a holistic framework for addressing these challenges. A clear example of this is the importance of the WEFE Nexus in the Union for the Mediterranean's (UfM) Water Agenda, as it recognizes the interdependence of water, energy and food systems and highlights the importance of the WEFE Nexus approach in addressing the region's water challenges.



Regional Process Session Description

1. Reference Session Title

RM2. New Vision of Water supply (mix-hydric) and demand by 2050

2. Description*

This session aims to emphasise the need for the traditional concept of integrated water resource management to evolve in the light of new challenges, by:

- Stressing the obvious, but sometimes forgotten, need for integrated management supported by prior integrated planning.
- Reinforcing the very concept of integration, which affects both the nature of the resources to be taken into account (conventional and non-conventional, surface or underground), and the consideration of other sectoral policies linked to water, such as agriculture, food, energy, preservation of the aquatic environment, health, the socio-economic model, etc., and which are more than ever at risk of being dealt with by various partial and incomplete "nexuses".
- Not forgetting the aspect of water quality, which concerns both the methods of using resources and the need for adequate treatment of effluents before they are discharged - whether point source or diffuse - and for adequate control of the entire cycle of use and discharge.
- Stressing, therefore, the need to establish the best possible inter-administrative coordination between all the competent administrations in these sectors, and according to the different territorial levels involved, from national or international to local.
- Requiring the active participation of all the parties and players concerned, guaranteeing the involvement of all the users concerned, as well as the general public, whether involved or not.
- Emphasising - as is so often repeated - the need for quality data on the resources available and the demands to be met over different time horizons, in which climate change scenarios must be taken into account to formulate plans that are truly adaptive to this new reality that threatens us.
- Revising strategies for allocating resources to the various potential uses, by identifying allocation priorities, but also by promoting policies to economise on demand and consumption and, of course, to eliminate leakages.



Regional Process Session Description

1. Reference Session Title

RM3. Drought and Flood prevention and management

2. Description*

The aim is to bring to the next Mediterranean Water Forum (Tunis, February 5-7, 2024) and then to the World Water Forum in Bali, recommendations from the Mediterranean Basin concerning actions planned by water stakeholders to adapt to climate change.

Given the specific situation of the Mediterranean rim, this will particularly concern the situation of droughts and rapid flooding. This in the new climatic context of the coming decades. These topics should be included in the World Forum's third theme, "Disaster risk reduction and management".

The discussion will focus on the analysis of experiences developed around the Mediterranean, in Europe, North Africa or the Eastern Mediterranean.

Priority will be given to operations that are both innovative and operational. We will be looking for guidelines that can be applied on a large scale in the field of adaptation to extreme phenomena linked to climate change.

Initiatives will focus on solutions to cope with extreme events such as severe flooding or prolonged drought.

The solutions sought concern both soft and hard solutions (warning systems, planning, changes in practices, nature-based solutions, etc.).



Regional Process Session Description

1. Reference Session Title

RM4. Regulation, right to water and water law, conflict prevention & resolution

2. Description*

"Killing for water" is the title of an article published in a magazine that reported that in northeastern Kenya several clans regularly clash over the use of water; but the latest clash was most deadly.

Armed men, the article reported, attacked a rival village to take control of water points, resulting in the deaths of seventy people, mostly women and children.

As pressure on water resources increases, conflicts can arise between individuals, groups of people, institutions and states.

Unfortunately, these conflicts can only become more acute, given that demand for water is only increasing, while water resources are limited, or even decreasing, given the impact of climate change.

Conflicts over the use of water can have their origins in :

- the distribution of water resources,
- degraded water quality, due to damage caused by polluters to individuals, the community or the environment,
- the effects of drought or flooding,
- procedures for applying laws and regulations, which are misunderstood by or restrictive for users,
- tariffs

Mechanisms are applied at various levels to resolve conflicts, either by the users themselves according to age-old practices or instituted by local authorities, or by government authorities, and sometimes even by intergovernmental authorities in the case of water resources shared between states.



Regional Process Session Description

1. Reference Session Title

RM5. New water financing partners and performance monitoring

2. Description*

"With recurring droughts across the World in general and the Mediterranean in particular increasingly worrying companies and their major investors, Wall Street is paying more and more attention to the risks posed by Water to business, global trade and corporate performance."

From the grain companies that rely on farmers, to GAFAs such as Microsoft or Amazon who need a reliable supply of fresh water to cool their datacenters, not to mention the food, energy, mining and clothing sectors, all economic activities are particularly vulnerable to the risks of water shortages, but no business sector is immune.

Major investors are taking note. In recent years, sovereign wealth funds and major financial institutions have been working to incorporate corporate water risks into their valuation models and investment decisions.

"The economy of the 20th century was based on an abundance of fresh water, and we have less and less of it," says the head of one such fund... "We've really fallen behind on water. We've really fallen behind on water, and as an investment community, we really need to worry about it and do more."

Water is intensely local. Flooding, drought, depletion of aquifers or water quality problems can lead to plant closures (beverage companies) or stifled supply chains (agribusiness). Water use rights will become increasingly restrictive.

Over the past two years, the Institut Méditerranéen de l'Eau has organized a number of conferences on the subject of water finance. This has led to meetings with international groups who have already invested in dealing with this new "Water Risk" to maintain their activity.

These include the OCP Group (Office Chérifien des Phosphates) in Morocco for the mining industry, Groupe DANONE in the food industry and the AXA insurance company. For these three global groups, the challenge is not simply to take commendable CSR action and/or measure their water footprint, but to integrate water risk into their strategy, even to the extent of creating dedicated subsidiaries for OCP (OCP green Water) and AXA (AXA Climate).

Regional Process Session Description

1. Reference Session Title

RM6. Digitalization and new solutions for rational water use

2. Description*

The problem of managing conventional and non-conventional water resources is a vital issue for mankind and the environment, but above all it is particularly complex to tackle because of (i) the specific nature of each territory, (ii) the qualitative and quantitative needs of each use, whether domestic, urban, agricultural, industrial, leisure or recreational, (iii) the spatio-temporal variability, often sudden, of the availability of resources, which often contradicts the needs of the various uses, particularly during periods of drought, (iii) the spatio-temporal variability, often involuntary, in the availability of resources, which often contradicts the needs of the various uses, especially during periods of drought, and (iv) the absolute need to preserve and restore all ecosystems, if only to preserve the ecosystem services they provide.

This sustainable management is made more complex by population growth, rapid urbanisation, the impact of climate change and pollution. To meet these challenges, it is clear that innovative solutions such as digitisation, AI, new technological solutions and the contribution of human and behavioural sciences will play an essential role in the rational management and preservation of water resources.

As we follow the water diagonal, we can see every day how innovative solutions are providing relevant answers to the challenges facing project owners and decision-makers:

- Solutions for monitoring water resources and their evolution over time or geographically are developing. They now offer predictive models, often quantitative, and more recently qualitative. The impact of climate change on the flow of a body of surface water, on the level of a body of groundwater and on changes in water quality at decadal intervals will be an integral part of the range of solutions that catchment managers will need to take on board;
- Solutions for monitoring the efficient transport of water have been mastered in urban areas, and will become more widespread in rural areas. The development of sensors and inspection robots will facilitate the management of multi-use rural networks, just as they are changing the management of intra-city networks;
- Mastering the knowledge of water uses, their temporality and seasonality, is absolutely essential if we are to achieve the virtuous objectives of saving water resources. In rural areas, or on the scale of a catchment area, mastery of a 2-dimensional vision is vital. In this respect, the contribution of remote sensing will become a major tool for monitoring water use in a catchment area, and for providing decision-making aids to the various players involved.
- Finally, we are all seeing the emergence of solutions for analysing the overall impact of our water schemes, often based on multidisciplinary approaches. The development of Life Cycle Analysis, which has been perfectly mastered in the building industry and in the management of the water cycle, is proof of this. To feed such an analysis, it will be necessary to master the data, both in time and space.