

Digital Transformation
for advancing Water-Energy-Food-Ecosystems Nexus
in the Mediterranean Source to Sea continuum

2nd Workshop
of the regional consultation process

6-7 February 2025, Malta

[AX ODYCY Hotel](#), Qawra, Malta & ONLINE (Hybrid)

CONCEPT NOTE
DRAFT

1. BACKGROUND

Digital transformation in the context of Water-Energy-Food-Ecosystems (WEFE) Nexus refers to the strategic adoption and integration of conventional and innovative digital policies and technologies across the interconnected systems of water management, energy production and consumption, food supply chains and environmental capital, in the spatial components of the Source-to-Sea (S2S) continuum. It involves, among others, leveraging advanced digital tools, data analytics, innovative technologies and related governance and managerial approaches to optimise the efficiency, sustainability, and resilience of integrated WEFE systems.

Digital transformation is not just a technological upgrade. It is a strategic imperative for creating more sustainable, resilient, and interconnected responses to sectorial challenges in a holistic WEFE Nexus approach applied in the spatial components of the Mediterranean Source-to-Sea continuum. Embracing integrated digital solutions is essential for overcoming current challenges and preparing for the evolving socio-economic demands of the future, particularly as these are shaped by climate change impacts.

Key components of digital transformation include, but are not limited to, data integration, real time monitoring, analytics and decision support, smart infrastructure, inter-connected platforms, automatization and optimisation, innovative tech ecosystems, etc. Digitalization in a WEFE Nexus in a S2S approach can contribute to integrated and data-driven management for informed decision-making, optimising resource allocation, increasing efficiency in operations, promoting innovation, etc., thus enhancing climate resilience.

Currently, a draft 'WEFE Nexus Strategy in the Mediterranean Source to Sea continuum' is under elaboration. The Strategy aims to assist countries and stakeholders in improving the integration of policy and management frameworks and instruments across WEFE sectors and spatial components throughout the Mediterranean. The development of the draft Strategy is a joint initiative of UfM, UNEP-MAP and the EU, technically supported by GWP-Med, EU WES Project and the PRIMA Foundation. Two consultative Regional Roundtables on the Strategy contents have so far taken place, in [Rabat, June 2023](#) as well as in the margins of the [5th Med Water Forum \(Tunis, February 2024\)](#), with key contributions by PRIMA. The draft Strategy, which include references to digital transformation, is aimed to be presented at the next UfM Ministerial Meeting on Water (possibly to take place towards the end of 2025 or in 2026) as well as at the 24th Contracting Partners Meeting of the Barcelona Convention (December 2025, Egypt). Furthermore, the next UfM Ministerial Meeting on Water is suggested having three focus themes: WEFE Nexus; Financing & Investments; Digitalization.

The [PRIMA](#) project [ACQUAOUNT](#) and [TALANOA-WATER](#) as well as the H2020 [TRANSCEND](#) project are at the forefront of digitalization research and innovation for Water and its interlinkages with other sectors for integrated management, including in a WEFE Nexus approach, creating impact on several demo sites across the Mediterranean via the development of actionable data, models and technologies, and their adoption through policy co-creation and co-implementation of novel digitalization tools. Examples of relevant digitalization efforts for advancing integrated approaches in these projects include the incorporation of remote sensing water and land use data into Decision Support Tools; co-creation processes and spaces (including serious games) towards the design of transformational adaptation strategies that mainstream digitalization methods and tools into the Mediterranean and EU policy; implementation of real-time monitoring systems; integrating modelling platforms with IoT technologies to optimize irrigation and water management systems at farm and river basin scale; etc. These innovations are aimed to transcend the demo sites in which they are being implemented, and to be widely replicated across the Mediterranean. Among others, the [Side Event on 'Transformative Water Resources Management: Smart and resilient solutions for climate challenge across the Mediterranean'](#), co-organised by the three PRIMA and H2020 projects (5 February 2024, Tunis, in the margins of the 5th Mediterranean Water Forum), elaborated on related issues.

Based on these, facilitating a regional multi-stakeholder consultation that would link the 'Digitalisation' and 'WEFE Nexus' thematic areas of the aimed UfM Ministerial Meeting, was considered of added value. This should also reflect UNEP-MAP and EU contents on the agenda, while more partners may contribute. Furthermore, UfM is advancing technical work on 'Digital Transformation of Water Sector: Strategic Planning & Capacity Development'.

To this end, the PRIMA ACQUAOUNT, TALANOA-WATER and H2020 TRANSCEND projects, in service of and with the support of UfM and other institutional partners, initiated and technically facilitate a science-driven regional consultation on the digitalization agenda for WEFE Nexus in the S2S continuum, involving regional and national players, including decision makers and other relevant stakeholders.

2. PURPOSE

The aim of the **regional consultation process** is to promote digital transformation for advancing Water-Energy-Food-Ecosystems (WEFE) Nexus in the Mediterranean within the spatial components of its Source-to-Sea (S2S) continuum, particularly under evolving climate change impacts.

The objectives of the regional consultation process are to:

- identify related Strengths, Weaknesses, Opportunities, and Threats (SWOT) and present a related analysis;
- highlight advancements made;
- craft recommendations for promoting digital transformation contributing to the draft 'WEFE Nexus Strategy in the Mediterranean Source to Sea continuum' as well as provide technical input to key regional political fora like the possible UfM Ministerial on Water, CoP of the Barcelona Convention, etc.
- help the PRIMA projects to adapt their research agenda towards transformational and actionable science that builds resilience to water scarcity and other natural resources management challenges under climate change impacts.

At the same time, the outcomes from this regional consultation process and the political fora that will be addressed by its results, will help the PRIMA ACQUAOUNT, TALANOA-WATER and H2020 TRANSCEND projects to adapt their research agenda to ensure they produce transformational, actionable science that builds resilience to water scarcity and other natural resources management challenges under climate change impacts.

3. PROCESS

Utilising combined resources of the synergising PRIMA and H2020 Projects, and capitalising on UfM’s as well as other institutional and technical partners’ scheduled events and capacities, *the regional consultation process unfold in the form of a Living Lab*. This is expected to provide related technical background and recommendations to the UfM Ministerial Meeting and other upcoming political fora addressing the subject, and could sustain its function beyond these assisting the implementation of the Mediterranean Strategy on WEFE Nexus in the S2S continuum on related topics as well as contributing to sustaining PRIMA, H2020 and other projects’ results. Synergies are also made with the [PRIMA WEFE4Med Project](#) and the enlarging [WEFE Nexus Community of Practice in the Mediterranean](#).

The regional consultation was launched at the [1st Consultation Workshop on ‘Digital Transformation for advancing Water-Energy-Food-Ecosystems \(WEFE\) Nexus in the Mediterranean Source to Sea \(S2S\) continuum’ \(4-5 June 2024, Lisbon\)](#), that was organised back-to-back with the [14th Meeting of the UfM Regional Platform on Water \(5-6 June 2024\)](#). Through setting-the-stage presentations, interactive discussions in working groups and in plenary, and multi-stakeholder discussion panels, the 1st Workshop launched the regional consultation process and elaborated on elements of a SWOT Analysis on the subject.

The 2nd Workshop of the regional consultation will take place on 6-7 February 2025, in Malta & On-line (Hybrid), aiming to advance the SWOT Analysis, and to set the basis for Recommendations on the subject. The Workshop will be conducted in English.

The 2nd Workshop is organised in conjunction with the **UfM Ad-hoc Meeting of the Drafting Group of the Ministerial Declaration on Water in the Mediterranean**, taking place on the same dates in Malta, aiming to kick-start the related drafting process. The **Malta Energy & Water Agency (EWA)** is hosting and supporting the UfM Ad-hoc Meeting and the 2nd Workshop of the regional consultation.

The following table presents the setting of the two events:

Time	6 February 2025		7 February 2025
Morning	UfM Ad-hoc Meeting of the Drafting Group of the Ministerial Declaration on Water in the Mediterranean <i>[by invitation; UfM Member States]</i>	2nd Consultation Workshop on ‘Digital Transformation for advancing WEFE Nexus in the Med Source to Sea continuum’ <i>[open event]</i>	UfM Ad-hoc Meeting of the Drafting Group of the Ministerial Declaration on Water in the Mediterranean <i>[all participants; presentation of results of the UfM Ad-hoc Meeting]</i>
Afternoon	UfM Ad-hoc Meeting of the Drafting Group of the Ministerial Declaration on Water in the Mediterranean	2nd PRIMA Workshop on ‘Digital Transformation for advancing WEFE Nexus in the Med	2nd Consultation Workshop on ‘Digital Transformation for advancing WEFE Nexus in the Med Source to Sea continuum’

	<i>[by invitation; UfM Member States]</i>	Source to Sea continuum' <i>[open event]</i>	<i>[all participants; further discussions, and conclusion of the 2nd Workshop]</i>
--	---	---	---

Further regional consultation events (online and through physical meetings) will follow, in the form of a Living Lab until the UfM Ministerial Meeting on Water. Based on the process's outcomes as well as on interest to continue and on mobilisation of necessary capacities, the Living Lab may expand its works, for example contributing to the implementation and/or monitoring process on related aspects of the Mediterranean Strategy on WEFE Nexus in an S2S Continuum.

4. CONTENTS

The regional consultation process would be articulated around a set of key aspects of digital transformation for advancing the WEFE Nexus in the S2S continuum in the Mediterranean. These would be identified through a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis, and evolve by formulating policy recommendations based on sound technical background and understanding of the socio-economic and developmental realities in the countries of the region.

5. Draft AGENDA of the 2nd Consultation Workshop (Hybrid)

[Some speakers to be confirmed]

[Time indicated in Central European Time]

Day 1: Thursday, 6 February 2025

9.00-9.30	Welcome and scope of the 2nd Consultation Workshop - Marta Debolini, Euro-Mediterranean Centre on Climate Change (CMCC) & Mediterranean Experts on Climate and Environmental Change (MedECC) - Representative of the PRIMA Foundation - Frederic de Dinechin, Senior Policy Advisor, WEBE Division, Union for the Mediterranean (UfM) - Manuel Sapiano, CEO, Energy & Water Agency of Malta
Setting the stage: Elements of the Digital Transformation for advancing Water-Energy-Food-Ecosystems Nexus in the Mediterranean Source to Sea continuum <i>Facilitator: Representative of the PRIMA Foundation</i>	
9.30-9.45	The regional consultation process on Digital Transformation for advancing WEFE Nexus in the Mediterranean Source to Sea continuum <i>Marta Debolini, CMCC & MedECC</i>
9.45-10.00	The Role of the Green Climate Fund to advance Water-Energy-Food-Ecosystems Nexus <i>Amgad Elmahdi, Regional Manager for MENA, Green Climate Fund (online)</i>

10.00-10.15	UfM work on Digital Transformation of Water Sector: Strategic Planning & Capacity Development <i>Georg Petersen, Technical Assistance Consultant, UfM</i>
10.15-10.30	Q&A to speakers / facilitated discussion
10.30-11.00	Coffee Break
Setting the stage: Elements of the Digital Transformation for advancing WEF E Nexus in the Mediterranean Source to Sea continuum (cont.) <i>Facilitator: Alain Meyssonier, President, Institute Méditerranéen de l'Eau (IME)</i>	
11.00-11.20	Digital technical tools for WEF E Nexus <i>Edgar Rubión, Head of Water and Climate Change AI Solutions Applied AI Unit Digital Technologies, Eurecat</i>
11.20-11.40	WEF E Nexus Digital Transformation: Considerations related to Nature-based Solutions <i>Mario Balzan, H2020 ReNature Project Coordinator</i>
11.40-12.00	Q&A to speakers / facilitated discussion
12.00-12.20	WEF E Nexus Digital Transformation: Considerations related to Policy Making and Financing <i>Jaroslav Mysiak, Director of the Research Division 'Risk assessment and adaptation strategies', CMCC</i>
12.20-12.40	WEF E Nexus Digital Transformation: Considerations related to Ecosystems Assessment <i>Donatela Spano, CMCC, Agrometeorology and Ecophysiology of Agricultural and Forestry Ecosystems at University of Sassari</i>
12.40-13.00	Q&A to speakers / facilitated discussion
13.00-14.00	Lunch Break
14.00-16.00	Discussion: Taking stock towards a technical SWOT Analysis on Digital Transformation for WEF E Nexus in the Mediterranean S2S continuum, and related Policy Recommendations - Key outcomes of the 1 st Consultation Workshop (June 2024, Lisbon), and setting of today's discussion: Vangelis Constantianos, GWP-Med - Split in three Break Out Discussion Groups elaborating on SWOT elements of the following topics (tentative) on Digital Transformation for WEF E Nexus: * Technical tools – Facilitator: Edgar Rubión, Eurecat * Policy making & Financing – Facilitator: Jaroslav Mysiak, CMCC * Nature-based Solutions & Ecosystems: Donatela Spano, CMCC - Presentation in plenary and debate

16.00-16.15	Coffee Break
16.15-17.15	<p>Discussion Panel - Digital Transformation for WEFE Nexus in the Mediterranean S2S continuum: Reflections from regional stakeholders <i>(Some panellists to be confirmed)</i> <i>Facilitator: Khaled Abu Zeid, Regional Director for Water Resources, Center for Environment & Development for Arab Region and Europe (CEDARE)</i></p> <ul style="list-style-type: none"> - Roula Khadra, Science Coordinator, CIHEAM Bari - Fadi Comair, PRIMA WEFE4MED Project/Cyl (online) - Tarek El Samman, Senior Technical Advisor, Arab Water Council (online) - Ali Abdou, Water Science & Research Officer, EcoPeace (tbc) - Mohammed Bany Mustafa, Permanent Technical Secretary, Arab Women Water Energy Environment Association - Q/A
17.15	<p>Closing remarks of Day 1: Marta Debolini, CMCC & MedECC, PRIMA ACQUAOUNT Project Coordinator</p>

Day 2: Friday, 7 February 2025 (afternoon only)

14.00-14.15	<p>Summary from Day 1 - Marta Debolini, CMCC & MedECC</p>
14.15-15.15	<p>Policy Panel Discussion – Taking stock towards a technical SWOT Analysis on Digital Transformation for WEFE Nexus in the Mediterranean S2S continuum, and related Policy Recommendations <i>(Some panellists to be confirmed)</i> <i>Facilitator: Vangelis Constantianos, Regional Coordinator, GWP-Med</i></p> <ul style="list-style-type: none"> - Enas Ahmed, Director General of Regional Organisations, Ministry of Water Resources & Irrigation, Egypt - Mohamed Al Dwari, Secretary General Assistant for Strategic Planning, Ministry of Water & Irrigation, Jordan (tbc) - Mona Fakhri, Water Director, Ministry of Energy & Water, Lebanon - Michael Schembri, Chief Policy Officer Energy & Water Agency, Malta - Siham Laraichi, Directorate for Research & Planning, Ministry of Equipment & Water, Morocco -Q/A
15.15-15.45	<p>Q&A to speakers / facilitated discussion</p>
15.45-16.00	<p>Reflections and suggestions</p> <ul style="list-style-type: none"> - Ayman Ayad, Water & Social Infrastructure Programme Manager, EU Delegation in Egypt (tbc) - Michael Scoullou, Team Leader, EU Water and Environment Support (WES) in the ENI Southern Neighbourhood region Project

16.00-16.15	<p>Conclusions and outlook – what’s next?</p> <ul style="list-style-type: none"> - Representative of the PRIMA Foundation - Representative of the Union for the Mediterranean - Manuel Sapiano, CEO, Energy & Water Agency of Malta - Marta Debolini, CMCC & MedECC - Vangelis Constantianos, GWP-Med
-------------	---

6. CO-ORGANIZERS

The regional consultation is co-organised by the [PRIMA](#) and [H2020](#) Projects ACQUAOUNT, TALANOA WATER and TRANSCEND in partnership with the [Union for the Mediterranean](#). The 2nd Consultation Workshop is graciously hosted and supported by the [Energy & Water Agency of Malta](#).

[ACQUAOUNT](#) project improves water resource allocation, IWRM, and sustainable irrigation using innovative tools like IoT monitoring, interoperability, and smart visualisation. It includes pilot demonstrations in Italy, Jordan, Lebanon, and Tunisia, addressing climate-induced water scarcity.

[TALANOA- WATER](#) project addresses the global water crisis through robust, transformative adaptation strategies for climate-induced water scarcity. It emphasises economic efficiency, environmental sustainability, and consists of three pillars: Talanoa Water Dialogue, socio-hydrology science, and Water laboratories. This innovative approach targets a critical global challenge.

[TRANSCEND](#) project catalyses the adoption of Transformational Adaptation Policies (TAPs) to combat water scarcity. It involves 50+ researchers from 15 institutions globally, focusing on efficient water management policies with seven pilot case studies on three continents. Over four years, it fosters knowledge and tools for sustainable growth under uncertainty and climate change.



Union for the Mediterranean
Union pour la Méditerranée
الاتحاد من أجل المتوسط

