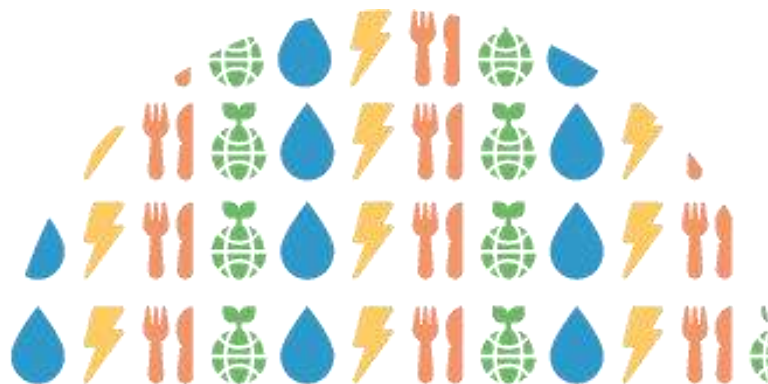




BONEX

**Boosting Nexus Framework
Implementation in the Mediterranean**

**Overview of the BONEX Project –
Approach and Nexus Bridging Plan**

Prof. Serena Sandri

Amman, 02.06.2025

Workshop agenda

9:30 – 10:00	Registration
10:00-10:15	Welcome Note GJU and IUCN speech
10:15-10:45	Overview of the BONEX Project – Approach and Nexus Bridging Plan Dr. Serena Sandri
10:45-11:30	The project BONEX in Jordan – Main Results from the Demonstration Project in Wadi Al Wala Dr. Arwa Abdelhay
	Official Video of BONEX in Jordan
11:30-12:00	COFFEE BREAK
12:00-12:40	Launch of BONEX Policy Brief – Addressing the WEF Nexus in Jordan Dr. Munjed Alsharif
12:40-13:15	BONEX Policy Brief - Feedback and Open Discussion Dr. Luay Juma, moderation
13:15-13:30	Wrap up Dr. Nooh Alshyab
13:30	LUNCH

BONEX: Boosting Nexus Framework Implementation in the Mediterranean

- **Funded by PRIMA for 2022-2025**
- **Type of action:** Innovation Action
- **Nexus Theme:** Water-Energy-Food-Ecosystems 2022 IA
- **Thematic area:** Nexus WEFE
- **Topic:** Predicting and testing options of socio-economic adaptation to declining Water-Energy-Food-Ecosystem (WEFE) resources in the Mediterranean Region



Consortium

16 partners, 8 countries, 5 SMEs



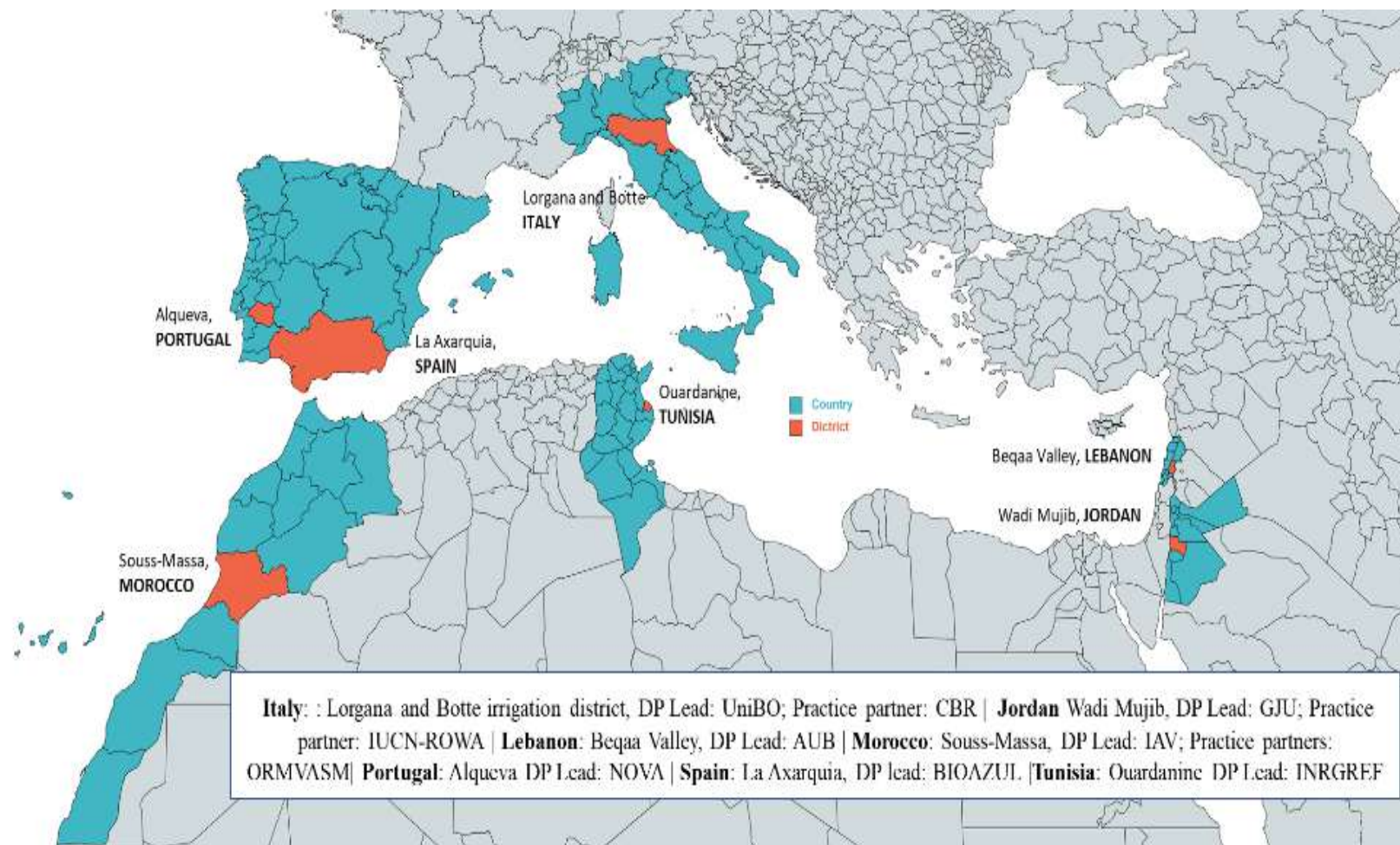
Jordan – Research partners and teams

- **German Jordanian University**
- Serena Sandri, Abdelhay Arwa; Abu Sheikha Ismail; Alshareef Munjed; Alshyab Nooh; Juma Luay
- **International Union for the Conservation of Nature**
- Ali Hayajneh, Mohammad Abu Safi, Amjad Abdelqader

Implementing partners

- **Dhiban Youth Cooperative**

DEMONSTRATION PROJECTS (DPs)



DEMONSTRATION PROJECTS (DPs) IN BONEX



BONEX conceptual background

WEFE Nexus Approach

The **Water-Energy-Food-Ecosystems (WEFE) Nexus** is an approach that:

- It recognizes that water, energy, food, and ecosystems are **closely linked**—what happens in one affects the others
- It highlights the need to **integrated management** of natural resources
- It helps find **balanced solutions** to minimize trade-offs



BONEX MISSION

- **Gap:** Extensive literature focuses on the theoretical nexus concept, but tools to support its implementation in governance and practice are still in early phases of development
- **BONEX** aims to
 1. provide **practical and adapted tools**
 2. examine concrete and **context-adapted technological innovations**
 3. facilitate **WEFe Nexus practical implementation** that balances the social, economic, and ecological trade-offs.

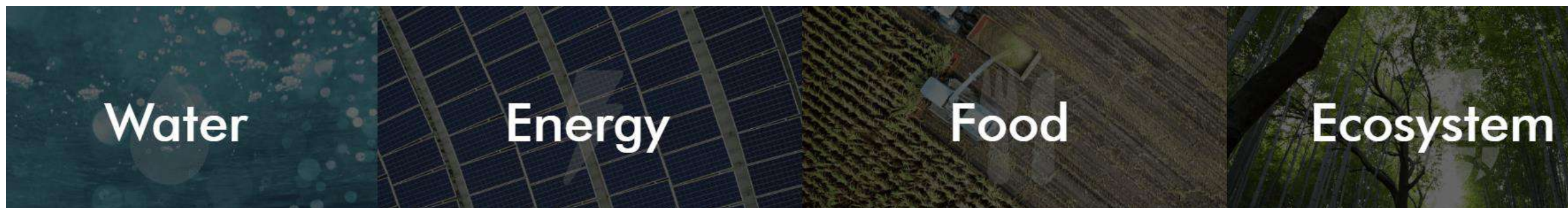


WHAT ARE THE MAIN OUTCOMES OF BONEX?

Project objectives	Specific outcomes
1- WEFe Bridging Framework (WEFeF)	• WEFeF methodological framework (WEFe FRAMEWORK-HANDBOOK) • 7 context-specific Nexus Bridging Plans
2- Demonstration Projects (DPs)	• 7 Nexus interventions in Mediterranean
3- Tools and methodological approaches	• WEF 2.0 Decision Support System (DSS) • Diagnostic and assessment tools (e.g. REWAS 2.0, cost benefit analysis)
4- Scale up WEFe Nexus practice	• 7 Regional Working Groups + Steering Groups • 21 Participatory workshops (250 stakeholders) • Community of Practice
5- Inform strategic policy processes	• 7 Policy briefs • 7 Fact-sheets • 7 Policy Exchange workshops
6- Exploitation of results	• 5 Business plans • 5 Replication studies • 1 International workshop

WEFE BRIDGING FRAMEWORK (WEFeF)

*WEFeF is a **methodological framework** to evaluate nexus interventions in the MedRegion*



Critical axes:

1. Practical tool for planners to integrate WEFE dimensions in the analysis and select interventions
2. Integration of ecosystem services
3. Participatory approach: legitimate and transparent decision-making process
4. Holistic WEFe Nexus diagnosis that takes into account specific social-ecological, institutional and governance aspects

WEFeF is being implemented and validated in 7 Demonstration Projects (TRL 3 → 6)

- Broad scientific and political interest on the WEFe nexus, but...
 - ✓ Lack of tools to **develop solutions** to WEFe nexus problems
 - ✓ **Ecosystems** rarely considered (Liu et al. 2018)
 - ✓ Few bottom-up, **context-sensitive studies** (Allouche and Middleton 2015)



WEFe Framework has been developed by BONEX to collaboratively **identify and assess interventions** that solve WEFe nexus problems and **develop implementation pathways**



WEFe FRAMEWORK-HANDBOOK

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- Questions to be answered:
 - ✓ What are the best local **organizational and/ or technical interventions to improve WEFe performance**, i.e., to reduce trade-offs, and improve synergies of the nexus?
 - ✓ How can these interventions be embedded into an overall solution approach to **facilitate their implementation** in a particular **social-ecological context**?
- **Target group:** Policymakers, governmental agencies, businesses, NGOs, and research institutes
- Provision of “method protocols”
 - ✓ Interview templates, surveys, protocol for data collection protocol, etc.
 - ✓ Different pathways for implementation, adaptability
- **Open access**

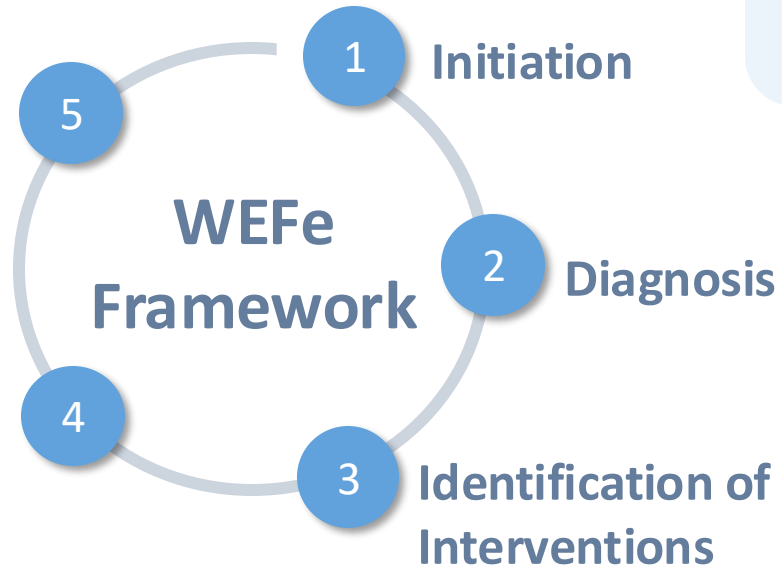
PHASES OF THE WEF_e FRAMEWORK

- Defining actions, responsibilities, key actors and resources to implement

**Designing
Implementation
Pathways**

**Assessing
Interventions**

- Assessing potential performance
- Identifying barriers and facilitators



- Define boundaries
- Analysing stakeholders
- Evaluating non-monetary values tied to ecosystem services

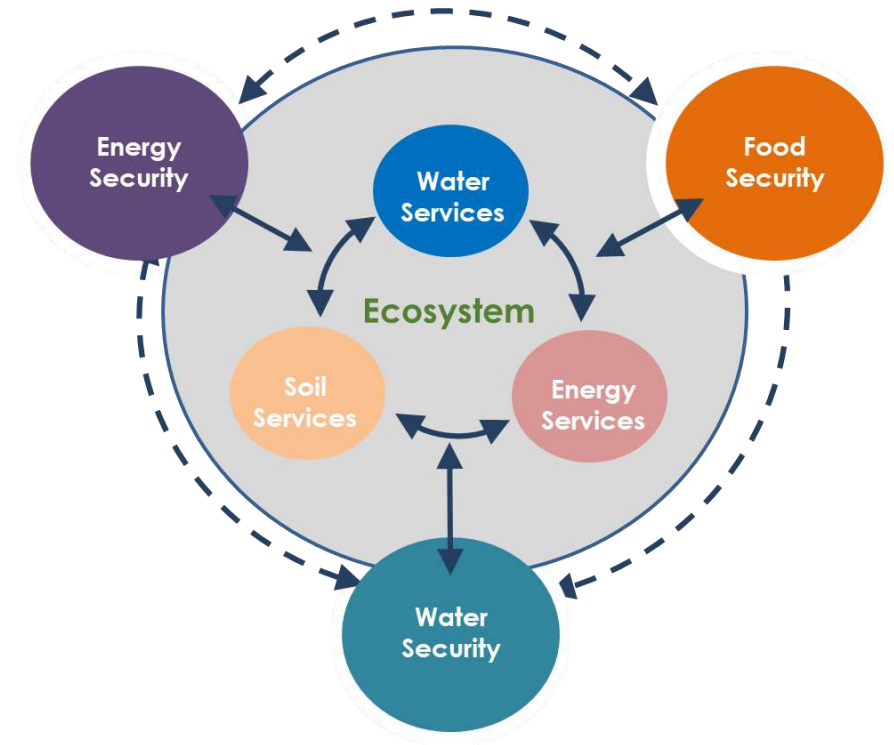
- Identifying WEF_e nexus challenges
- Participatory system mapping

- Identifying interventions based on i) regional experts, OR ii) analysts, OR iii) co-creation with stakeholders

CONCEPTUAL BACKGROUND

Core principles

- **Social-ecological-technical systems** approach (Ostrom 2007, Ostrom and Cox 2010)
- **Systems thinking** (Meadows 2009, Antunes et al. 2015)
- **Diagnostic** approach (Young 2011)
- **Transdisciplinary** research principles (Lang et al. 2012)



NEXUS BRIDGING PLANS

Definition

*Concise and practical **context-specific plans** (strategies) guiding the transdisciplinary implementation of the proposed WEFe solution approaches*

- Include: Specific objectives and measures (e.g. policy adaptations), tasks, milestones, roles for different actors throughout the implementation, assessment of risks, economic viability of the proposed WEFe solution approaches.
- NBPs will be built in a participatory way with the active involvement of local actors that will be engaged in **Regional Working Groups (RWG) -> Participatory workshops**
- NBPs will be produced in 7 selected DPs -> Lighthouse WEFe solutions in the MedRegion

Jordan Nexus Bridging plan - Hydroponic agriculture

- Strategic framework to tackle Water-Energy-Food-Ecosystem (WEFE) challenges in Jordan and comparable regions.
- Focusing on **Wadi Al Wala**, the plan evaluates a **solar-powered hydroponic pilot** as a sustainable solution to water scarcity, food insecurity, and energy constraints.
- Suggesting a replicable model for water-food-energy resilience
- Focus on technical feasibility and socio-economic impact of intervention
- Strategic document and a call for action towards decentralized context adapted nexus solutions

