

11-12 FEBRUARY 2025

RABAT, MOROCCO

Institut Agronomique et Vétérinaire Hassan II



WEFE NEXUS INTERNATIONAL CONFERENCE

**EXPLORING AND BRIDGING NEXUS FOR
A SUSTAINABLE FUTURE**



These projects are part of the
PRIMA programme supported
by the European Union.

WEFE NEXUS INTERNATIONAL CONFERENCE

Day 2 – 12th February 2025

PILLAR 3: WEFE NEXUS SOLUTIONS

TOOLS AND DECISION SUPPORT SYSTEMS TO SUPPORT WEFE NEXUS IMPLEMENTATION & GOVERNANCE



BONEX methodological framework on Nexus and WEFE 2.0 Decision making tool

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BONEX methodological framework on Nexus

Nora Schütze, Andreas Thiel - University of Kassel



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INTRODUCTION

Status quo of WEF nexus research

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

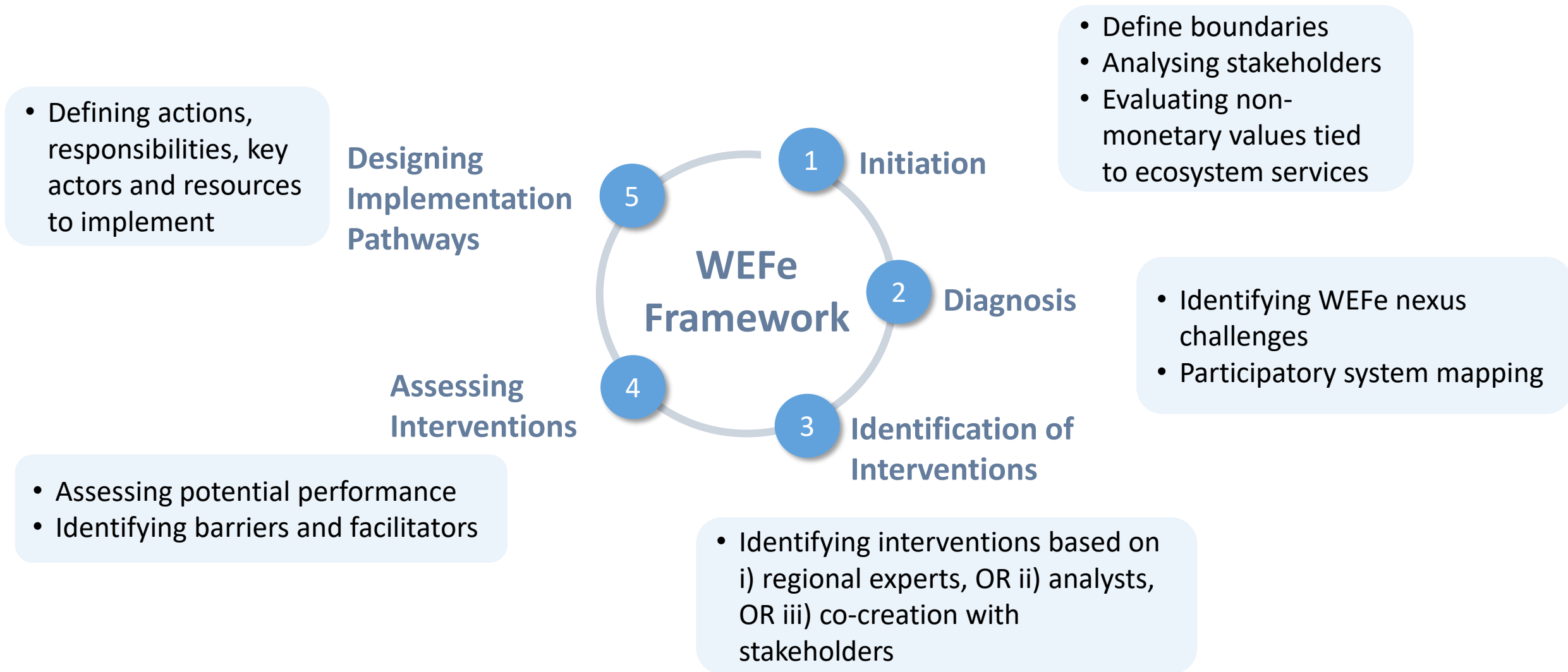


WEFe Framework has been developed to collaboratively **identify and assess interventions** that solve WEF nexus problems and **develop implementation pathways**

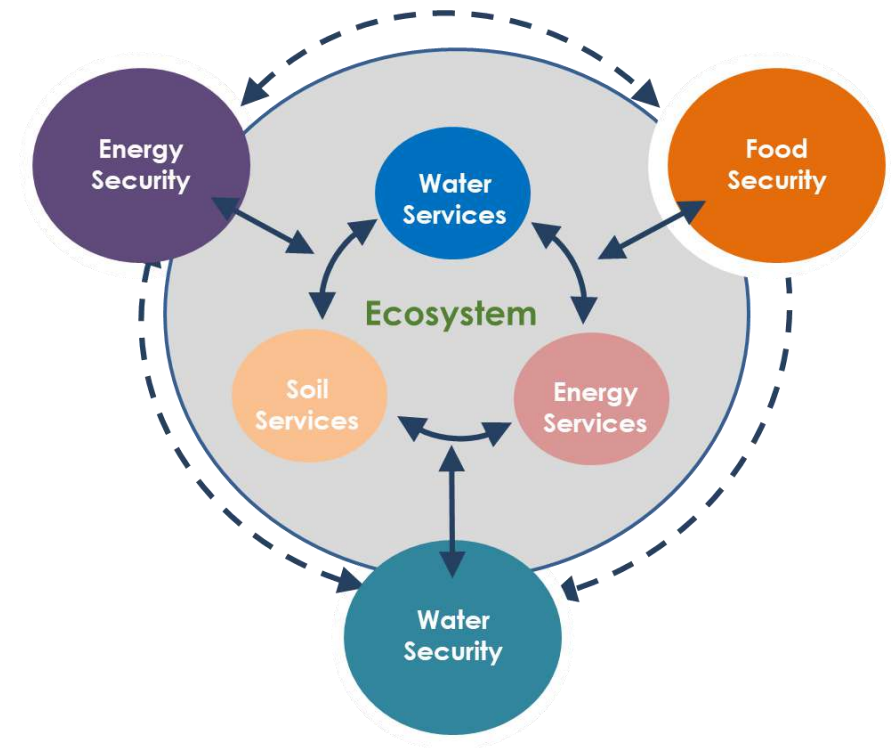


- WEFe FRAMEWORK-HANDBOOK
- Overview
- Questions to be answered:
 - ✓ What are the best local **organizational and/ or technical interventions to improve WEFe performance**, i.e., to reduce trade-offs, and improve synergies of the nexus?
 - ✓ How can these interventions be embedded into an overall solution 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



- 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)



- 1st PHASE: INITIATION

- Initiating the implementation of the WEFe Framework

- **Defining boundaries:**

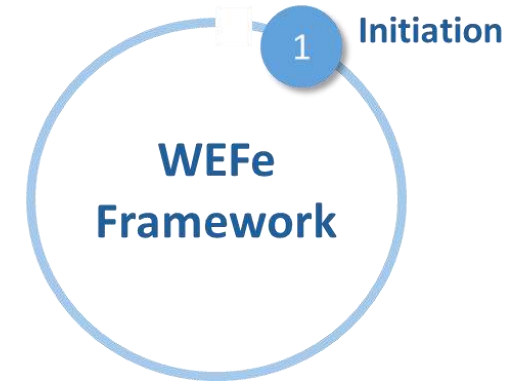
- ✓ Determining the limits within which the study will be conducted
 - ✓ Desk-based decision, reflection within the team

- **Stakeholder analysis:**

- ✓ Identify and classify stakeholders
 - ✓ Snowball-sampling, short interviews

- **Non-monetary analysis**

- ✓ Investigate values that the WEFe nexus can have for people beyond conventional market valuations
 - ✓ Stakeholder interviews

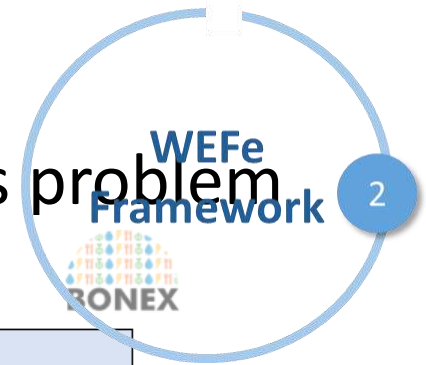


- 2nd PHASE: DIAGNOSIS

- Identifying, describing, and “diagnosing” the WEFe nexus problem

- Understanding the **context**, and WEFe nexus & socio-economic trends

- ✓ Desk-based analysis, key informant interviews



Method protocols

Guiding questions to understand the context of the focal area

Socio-economic context:

- What is the broader socio-economic context and related challenges of the region and/ or state that could influence the WEFe Nexus and the implementation of WEFe nexus solutions? (e.g., economic situation, population growth, unemployment, corruption, perception of the severity of the WEFe nexus problems, ...)
- What are the main **economic activities** in the focal area in general, and the main agricultural activities in particular? What is the level of employment?
- What are the levels of **education and income** among different social groups? What are the levels of poverty and inequality in the region?
- Could these indicators influence the implementation of an intervention, and if so, how (e.g., high levels of poverty and low levels of education could hinder the implementation of an intervention that is very costly and requires high technical skills)?

Ecological setting:

- What are the **most pressing issues** in the focal area with regard to water resources, energy resources, food production, soil resources as well as ecosystems? Are there any significant environmental issues or challenges in the focal area (e.g., water scarcity, water pollution, soil degradation, deforestation, climate change, etc.)?
- What are the main **trade-offs and interdependencies** of the WEFe nexus in the focal area? (e.g. between water scarcity and food production; or water resources and CO2 consumption?)

Governance context:

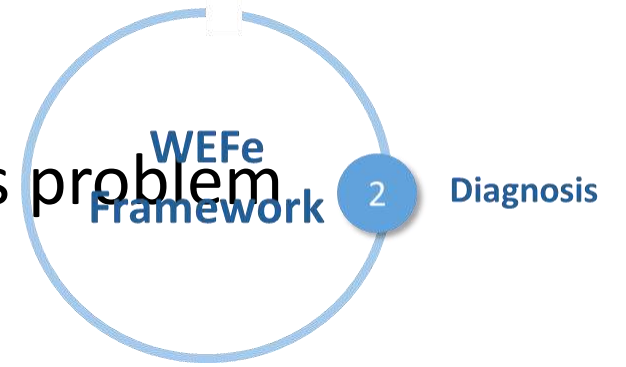
- What is the broader formal and informal **governance and political context** of the region or state that needs to be considered when implementing WEFe nexus solutions (e.g., state capacities, political stability, human security, political importance of addressing WEFe nexus problems, compliance with environmental regulations, etc.)?
- What are the existing **policies** related to the WEFe nexus problems reported above?



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- 2nd PHASE: DIAGNOSIS – cont'd

- Identifying, describing, and “diagnosing” the WEFe nexus problem

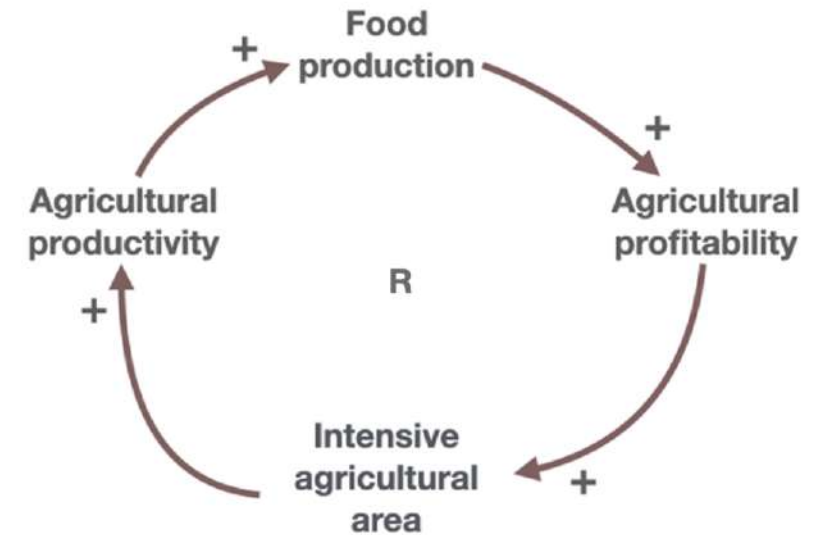


- **Ecosystem services assessment**

- ✓ Survey on values that people associate to ecosystem services (online or face to face)

- **Stakeholder workshop: Participatory system mapping**

- ✓ Visioning exercise
- ✓ Systems thinking: Developing a **Causal Loop Diagram** with stakeholders



• 3rd PHASE: IDENTIFYING INTERVENTIONS

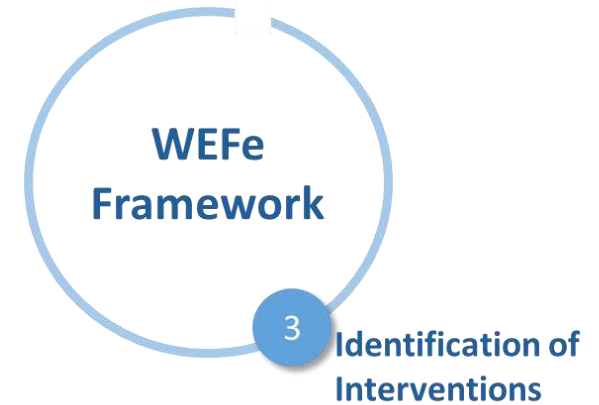
- Identifying complementary or alternative interventions (2-4) to address the WEFe nexus problem

a) **Co-creation of interventions by stakeholders:** Participatory workshop

b) **Identifying interventions by local experts**

c) **Identification of interventions by analysts**

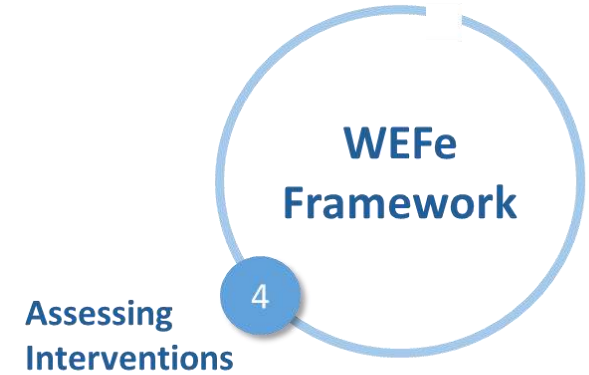
➤ Systemic perspective, social-ecological context, trade-offs and synergies



- 4th PHASE: ASSESSING INTERVENTIONS

- Desk-based performance assessment

- Can the intervention help to reduce the use of water, energy or land and protect ecosystems, while ensuring that food production and local livelihoods are maintained or improved?

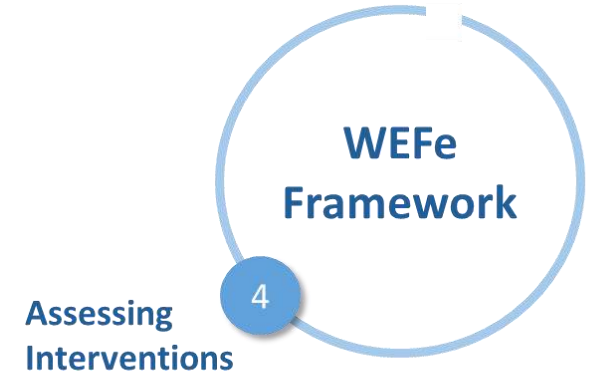


- **REWEF Nexus Assessment Tool**

- **Cost-Benefit Analysis**

- ✓ Estimation of costs and benefits associated with the intervention
- ✓ Desk-based

- 4th PHASE: ASSESSING INTERVENTIONS – cont'd
- Performance assessment in **stakeholder workshop**
- Causal Loop Diagram (CLD)
 - Include interventions in the CLD to analyze feedback loops and long-term system effects
- Assessment of **barriers** and **facilitators** to the intervention
 - Physical implementation, financial, social, political and administrative dimensions
 - Implications of barriers and facilitators
- **Stakeholders' perception** on the **benefits or threats** on the WEFe nexus



- 5th PHASE: DESIGNING IMPLEMENTATION PATHWAY

- Developing Nexus Bridging Plans

- **3rd Stakeholder workshop**

- ✓ Present results to stakeholders
- ✓ Discuss measures to support the intervention's implementation

- **Nexus Bridging Plan**

- Description of intervention and implementation pathways
- Discuss policy measures

Designing
Implementation
Pathways

5

WEFe
Framework

- Outlook
- Publication of WEFe Framework Handbook
 - **Open access**, easy to use
 - Launch: June 2025
 - <https://bonex-prima.eu/>





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THANK YOU FOR YOUR ATTENTION

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**SURE
NEXUS**



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