PRIMA-JORDAN INFODAY 2023

DR. Mohamed Wageih
Project Officer, Agrofood Value Chain

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PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION
IN THE MEDITERRANEAN AREA

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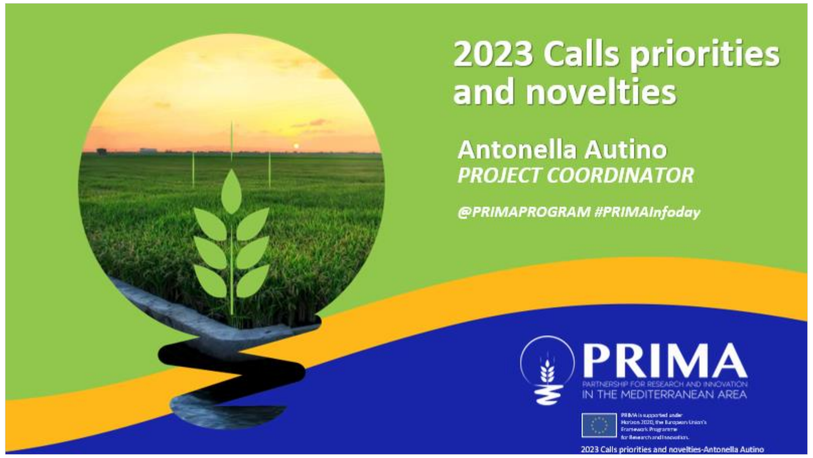
Content



Water management topic – Section 1

Topic 1.1.1 IA

Topic Water management **S1**

TRL 6-8 | 8.2 M€ | PROJECTS 2

Integrated adaptive wastewater management plans in the Mediterranean region

Submission deadline Stage 1: 22/03/2023

Farming systems topic – Section 1

Topic 1.2.1 IA **S1**

In collaboration with EU Mission Soil Deal for Europe

Actions to restore and return degraded lands in the Mediterranean region into productive agroecosystems

8.2 M€ | TRL 6-8 | PROJECTS 2

Submission deadline Stage 1: 22/03/2023

Calls 2023 W.E.F.E Nexus Topics

Topic 1.4.1 (IA)

Accelerate adaptation and mitigation to climate change in the Mediterranean region by deploying WEFE nexus solutions.

8.2 M€ | TRL 6-8 | PROJECTS 2

Submission deadline Stage 1: 22/03/2023

WEFE NEXUS AWARD

Successful implementation of management practices of WEFE resources at the local or regional scale of the Mediterranean Region.

20000€ | 2

Submission deadline : 22/05/2023

SECTION 2 TOPICS

Submission deadline Stage 1: 29/03/2023

Topic 2.1.1 RIA

New governance models to define best practices for sustainable water management and conflict mitigation

> 1.5 M€

Topic 2.2.1 RIA

A step toward carbon-neutral farms: coupling renewable energy sources with circular farming systems.

>1.5 M€

Topic 2.3.1 RIA

Assessing novel antimicrobial food packaging and coating materials to reduce food waste to improve safety in the Mediterranean food supply chain

>1.5 M€

2023 Calls priorities and novelties

Antonella Autino

PROJECT COORDINATOR

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- AWP approval process
- SRIA
- Programme structure

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- Type of Action
- Budget
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PRIMA
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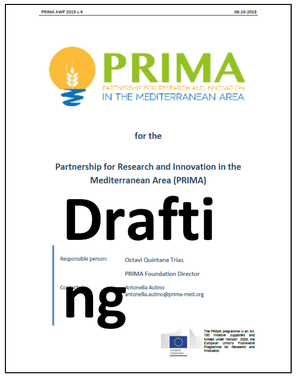
Background
AWP approval process

Strategic level: SRIA
Strategic Innovation and Research Agenda

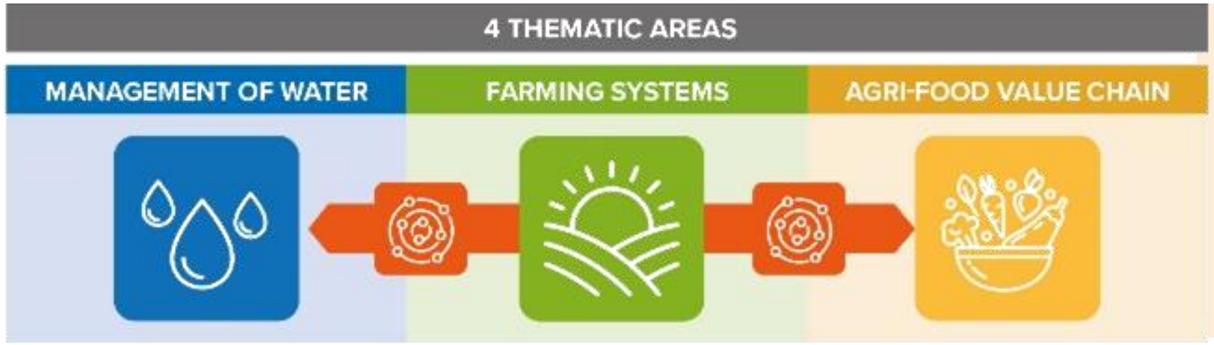
Operational Level
Annual Work Plan

SAC



Call for proposals
(RIAs, IAs, CSAs, Prizes)

Portfolio management



Background
SRIA

MANAGEMENT OF WATER
Integrated and sustainable management of water for arid and semi-arid Mediterranean areas

FARMING SYSTEMS
Sustainable farming systems under Mediterranean environmental constraints

AGRO-FOOD VALUE CHAIN
Sustainable Mediterranean agro-food value chain for regional and local development

NEXUS theme

Background
Programme Structure

	SECTION 1 Transnational calls for proposals	SECTION 2 Transnational calls for proposals	SECTION 3 Participant States Initiated Activities-PSIAs
Call publication	PRIMA-IS	PRIMA-IS	PS (Participating States)
Proposal evaluation and selection	PRIMA-IS	PRIMA-IS	PS
Projects funded by	PRIMA-IS EU	PS	PS
Projects monitored by	PRIMA-IS	PRIMA-IS PS	PS
Rules for participation	HORIZON 2020 derogations set by Decision (EU) 2017/1324*	PS Rules	PS Rules

*PRIMA Decision https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32017D1324&from=EN

PRIMA Derogations* to H2020
rules of participation

minimum participation of at least **three independent legal entities** established **in three different countries considered to be Participating** of which:

(i) at least one is based in a Member State or third country associated to Horizon 2020

(ii) at least one is established in a third country bordering the Mediterranean Sea

Highlights Calls 2023

Fostering South-South cooperation

MINIMUM CONSORTIUM

3 DIFFERENT COUNTRIES

AT LEAST **2** MPCs

AT LEAST **4** LEGAL ENTITIES

1 MPC

The two legal entities could be in a different region of the same Mediterranean Partner Country or two different Mediterranean Partner Countries*

***Algeria, Egypt, Jordan, Israel, Lebanon, Morocco, Tunisia, Turkey**

Highlights Calls 2023

Section 1, four Calls for proposals

THEMATIC AREAS

Management of water

Farming systems

Agro-food value chain

WEFE Nexus

4 Topics

PRIMA WEFE NEXUS AWARDS

one Call for contest

WEFE Nexus Award

Section 2, a single multi-topic Call

THEMATIC AREAS:

Management of water

Farming systems

Agro-food value chain

3 Topics

Highlights Calls 2023-
boosting the innovation potential

Call 2018 | Call 2019 | Call 2020 | Call 2021 | Call 2022 | Call 2023 | 2024

INNOVATION ACTIONS: 3 IAS
«ACTIVITIES DIRECTLY AIMING AT PRODUCING PLANS AND ARRANGEMENTS OR DESIGNS FOR NEW, ALTERED OR IMPROVED PRODUCTS, PROCESSES OR SERVICES”

THE PROPOSAL ARE EXPECTED TO DEVELOP THE ACTIVITIES, PILOTS IN **BIG DEMO SITES INVOLVING A LARGE NUMBER OF STAKEHOLDERS**

HIGHER TRL
STIMULATING SOLUTIONS CLOSER TO MARKET

TO MAKE INNOVATION MORE DEMAND DRIVEN, PRIMA PROMOTES **MULTI-ACTOR APPROACH**

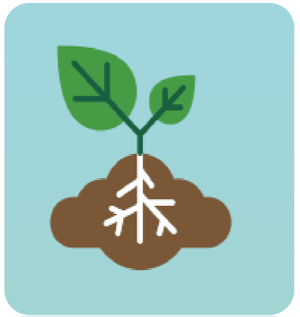
CO-CREATION PROCESS..

Highlights Calls 2023
-fostering collaboration with the EU Missions

Topics drafted in Collaboration with:

EU Mission «A Soil Deal for Europe»

✓ Projects are expected to build links with the Mission "A Soil deal for Europe". Proposals should include dedicated tasks and appropriate resources for coordination measures and joint activities with relevant



projects are expected to build links with the action funded by the Mission under the topic **HORIZON-MISS-2023-SOIL-01-04: Innovations to prevent and combat desertification**

EU Mission "Restore our oceans and waters 2030»

✓ Projects are expected to contribute to the EU Mission "Restore our ocean and waters by 2030" in particular with the Mission lighthouse in the Mediterranean Sea basin, piloting solutions for the prevention and elimination of pollution, including nutrient pollution

projects are expected to build links with the coordination and support actions under the topic **HORIZON-MISS-2021-OCEAN-03-02 : Mediterranean Sea Basin Lighthouse – Coordination Activities**

Highlights Calls 2023-focus on expected outcomes

ACTIVITIES WILL BE KEY TRANSVERSAL COMPONENT OF PROJECT PROPOSALS, ENHANCING RESEARCH AND INNOVATION CAPACITIES

GENDER EQUALITY CONCERNS ALL PARTS OF PRIMA PROGRAMME

Highlights Calls 2023

-to increase impact: fostering networking among projects

FOSTER PROJECTS NETWORKS COLLABORATIONS WITHIN PRIMA

BUILDING ON WHAT HAVE BEEN DONE SO FAR BY PRIMA AND OTHER EURO-MED PROJECTS

i.e. ENI CBC MED, HORIZON 2020, HE

KPIS

Highlights Calls 2023
Type of Actions

SECTION 1

Technology Readiness Level

I
A

TRL 8 FIRST OF A KIND COMMERCIAL SYSTEM

TRL 7 DEMONSTRATION SYSTEM

R
I
A

TRL 6 PROTOTYPE SYSTEM

TRL 5 LARGE SCALE PROTOTYPE

TRL 4 SMALL SCALE PROTOTYPE

TRL 3 NEEDS VALIDATION

Proposals should clearly state the starting and end targeted TRLs

RIA
RESEARCH AND INNOVATION ACTION

IA
INNOVATION ACTION DEMO

TRL 3 TRL 4 TRL 5 TRL 6 TRL 7

Analogous to RIA
Research and Innovation Actions

SECTION 2

Highlights Calls 2023

PRIZES

2 PRIZES

OF 10.000 € EACH

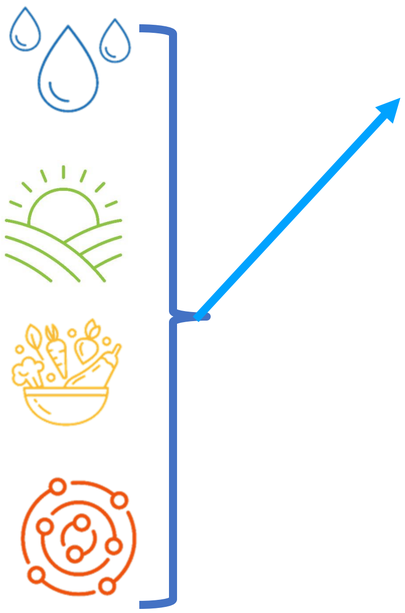
to excellent research teams have demonstrated the successful implementation of combined management practices of Water, Energy, Food, and Ecosystem (WEFE) resources at local or regional scale in the Mediterranean area

Links with the WEFE Community of practice.

PRIMA WEFE NEXUS AWARDS

Highlights Calls 2023
Budget

Section 1 Calls	Indicative EU contribution
Section 1 Call 1	8 200 000
Section 1 Call 2	8 200 000
Section 1 Call 3	8 250 000
Section 1 Call 4	8 200 000



SECTION 1

32.9 M€

BUDGET-/PROJECT

69M EUR

PRIMA

36 M€

BUDGET-/PROJECT

>1.5 M€

SECTION 2

Highlights Calls 2023
Calendar

Section	Call publication and opening	Submission deadline Stage 1	Evaluation results Stage 1	Submission deadline Stage 2	Evaluation results Stage 2
1	25/01/2023	22/03/2023	16/06/2023	06/09/2023	20/11/2023
2	25/01/2023	29/03/2023	23/06/2023	13/09/2023	11/12/2023





- To restore and return **degraded lands** in the Mediterranean region
- Fostering the **circular economy** and **bioeconomy** solutions along food systems value: towards carbon-neutral farms
- To improve **water quality**
- To promote agri-food supply chain (**cereal**) resilience in the Mediterranean region.
- To deploy **WEFE nexus** solutions to accelerate adaptation and mitigation to climate change in the Mediterranean

Highlights Calls 2023
Calls contents-general features

Support the transition towards a circular resilient, green, and socially inclusive economy in the Mediterranean Will contribute to important key priorities and strategies

UN2030 Agenda Sustainable Development

- The key elements of the EGD
- Farm to Fork
- Zero pollution Action Plan
- EU Water Framework Directive (WFD).
- EU Strategy on Adaptation to Climate Change
- Integrated Nutrient Management Action Plan
- EU Communication “Ensuring availability and affordability of fertilisers”

Barcelona Convention and related UfM Action Plan

UfM Roadmaps

Thank you

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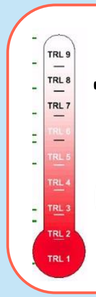
Water management topic – Section 1

Topic 1.1.1 IA

Topic Water management **S1**



TRL 6-8

8.2 M€

2

Integrated adaptive wastewater management plans in the Mediterranean region

Submission deadline Stage 1: 22/03/2023

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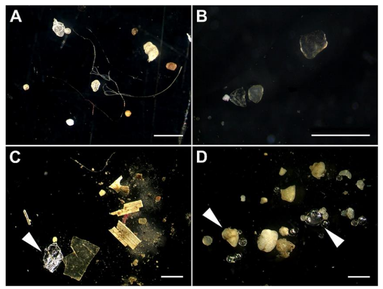
Water management topic – Section 1

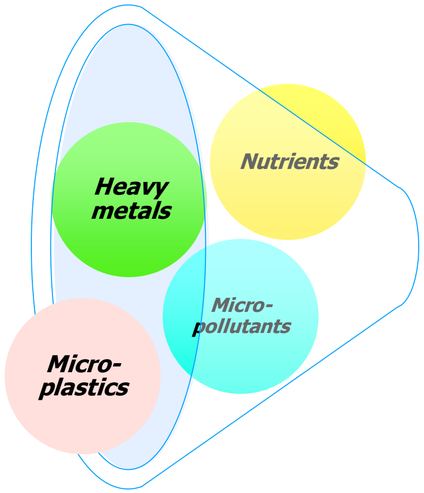
Challenge

Agricultural and industrial sources, urban runoff and improperly treated wastewater discharges are leading to…



By Martin Wagner et al. - Wagner et al.: Microplastics in freshwater ecosystems: what we know and what we need to know. In: Environmental Sciences Europe. 26, 2014, doi:10.1186/s12302-014-0012-7, CC BY 4.0, https://commons.wikimedia.org/w/index.php?curid=39507778

Weerayuth Kanchanacharoen, Tubería de descarga industrial y de fábrica de aguas residuales en el canal y el mar



…**increased pollution** of Med water bodies & related aquatic ecosystems!

Photo: Dr. Jennifer L. Graham | US Geological Survey / eutrophication & hypoxia on Flickr (CC BY-NC-ND)

- eutrophication, destruction of aquatic life, reduction of biodiversity
- impact on ecosystems services, economy (tourism, aquaculture, fisheries) and Med people's livelihoods
- potential threats to human health
- increasing water purification costs for municipal/industrial use

In addition to this, the Med faces issues like **water scarcity and depletion**, the increasing prices of **fertilisers**….

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Water management topic – Section 1

Scope

Issues mentioned should be addressed holistically through **wastewater management plans** based on new *circular economy business models* and integrating *green (incl. NBS) and grey solutions*

Demonstrating the **recovery & recycling of nutrients** from wastewater/sewage sludge	⇨	*prevent nutrient pollution in aquatic environments and lower need for fossil-based fertilisers*
Upgrading WW treatment plants	⇨	*trap micro-pollutants/micro-plastics, increase water reuse and better sewage sludge management*
Optimising **energy consumption**, encouraging uptake of energy efficient tech	⇨	*energy savings and reduction of GHG emissions*
Strengthening uptake of **digital solutions**	⇨	*tracking of potential pollutants at the inlet and outlet of the WW treatment facilities*
Planning **surveillance systems for COVID-19** in large WW treatment plants	⇨	*source of information on the spread of the virus and other emerging pathogens*
Involve national, regional, local **authorities, industry, farmers and consumers**	⇨	*analyse governance options and costs of improved access to sanitation in Med countries*

Proposals to outline links w/ other projects and the EU Mission "Restore our ocean and waters by 2030" (Water Knowledge System, Implementation Support Platform for Coordination and Monitoring, Med Sea Basin Lighthouse)

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Water management topic – Section 1

Expected Impacts

Market opportunities for recovered or recycled nutrients

Improve energy efficiency of wastewater treatment, towards carbon and energy neutrality

Reduction of the eutrophication in water bodies; protection and restoration of affected ecosystems

Changes in practices (society, agriculture, industry) towards more sustainable ones to prevent and reduce nutrient pollution

A farmer applies fertilizer on his rice field. IRRI Photo (Isagani Serrano)
Part of the image collection of the International Rice Research Institute (IRRI).

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Water management topic – Section 1

Key Performance Indicators

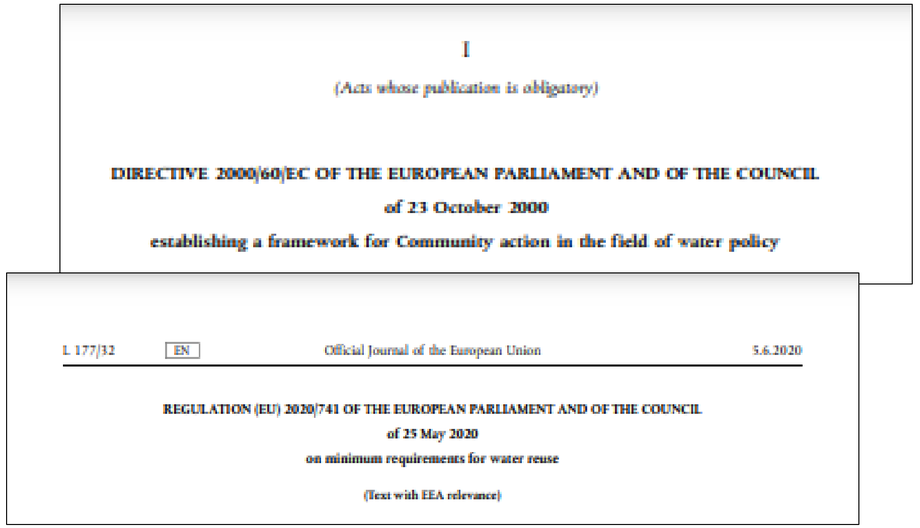
- Contribution of recycled nutrients to the overall nutrients used for agricultural production (%)
- Decrease in inputs of nutrients into soils and aquatic environments (%)

- SDG #6 Indicator 6.3.2 "Proportion of bodies of water with good ambient water quality"

Water management topic – Section 1

Links with national, EU/int'l policies, strategies

- Sustainable Development Agenda 2030
- EU Green Deal
- Zero pollution Action Plan
- Water Framework Directive
- Biodiversity Strategy
- Etc.



I

(Acts whose publication is obligatory)

DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 October 2000
establishing a framework for Community action in the field of water policy

L 177/32 EN Official Journal of the European Union 5.6.2020

REGULATION (EU) 2020/741 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 25 May 2020
on minimum requirements for water reuse

(Text with EEA relevance)

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Farming systems topic – Section 1

Topic 1.2.1 **IA** **S1**

In collaboration with EU Mission Soil Deal for Europe

Actions to restore and return degraded lands in the Mediterranean region into productive agroecosystems

8.2 M€

TRL 6-8

2 PROJECTS

Submission deadline Stage 1: 22/03/2023

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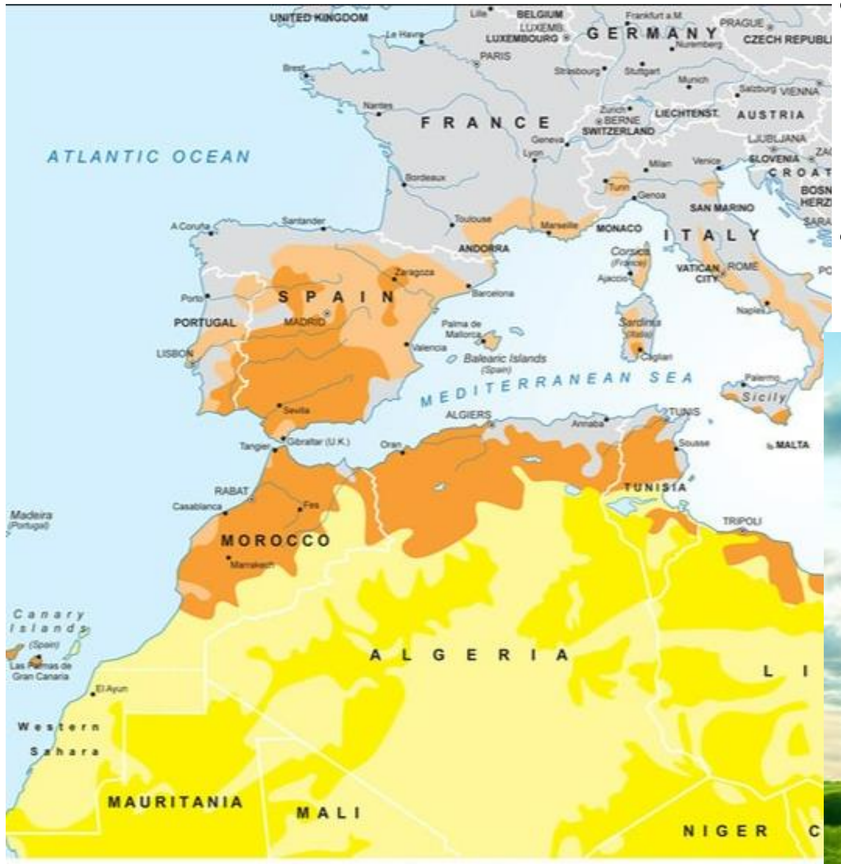
Challenge

MISSION SOIL



Environment and Security in the Mediterranean: D

Desert
Semi-desert
Desertification vulnerability, serious
Desertification vulnerability, moderate

Sources: Natural Resources Conservation Service, Plan Bleu, Times Atlas of the World

- About 25% of land in Southern, Central and Eastern Europe is at high or very high risk of desertification
- More than 1/3 of the Med Drylands are already affected by desertification

DESERTIFICATION

LEADS TO A LOSS OF BIODIVERSITY AND SOIL COVER

COMPROMISES AGRICULTURAL ACTIVITIES

HAS SEVERE SOCIO ECONOMIC CONSEQUENCES ON VULNERABLE POPULATIONS - SMALLHOLDERS

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Scope

RESTORE THE LANDS ALREADY AFFECTED BY DESERTIFICATION AND TURN THEM INTO PRODUCTIVE AGRO-ECOSYSTEMS

Approach

RESTORE BIOLOGICAL-ECOLOGICAL CYCLES USING EXISTING / ALREADY TESTED ECO-FRIENDLY SOLUTIONS (Practices, Technologies, Varieties….) AND SCALE IT/THEM UP

WORK AT A LARGE SCALE TO DEMONSTRATE TO STAKEHOLDERS – LAND MANAGERS – FARMERS- POLICYMAKERS THE BENEFITS OF YOUR SOLUTION **IN REAL LIFE CONDITIONS**

CIRCULAR ECONOMY – RECYCLING – REUSING- **NATURE BASED SOLUTIONS – VALORIZE ECOSYSTEM SERVICES**

ESTIMATE AND ANALYSE THE COST/BENEFITS OF THE PROPOSED SOLUTION

DEVELOP **ORGANIZATIONAL / BUSINESS MODELS** TO SUSTAIN THE ACTION AFTER THE END OF THE PROJECT (creation of new value chains - new market activities- jobs for Young and women …)

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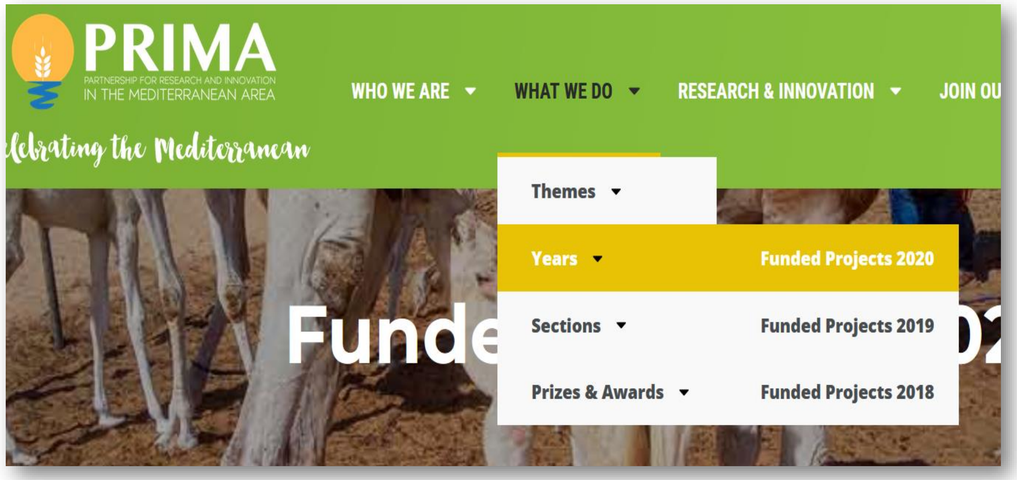
Approach

- **Take advantage of THE RESULTS (AND SITES) of previous Projects and create synergies**

PRIMA projects

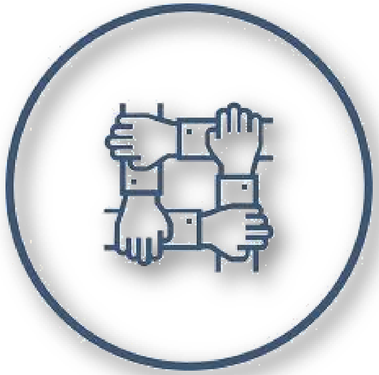
ex: *Call 2021: Sustainable soil and water management for* ***combating land degradation and desertification*** *and promoting ecosystem restoration*

Call 2022 in collaboration with the EU Mission Soil: Developing ***integrated soil data for the Mediterranean Region****: a gateway for sustainable soil management*



H2020 # HORIZON EUROPE

- **Adopt Multi actors approach and co-construction of the proposal** (scientists, land planners, farmers, municipalities, private sector, citizens…)



- **Create links with the #EU MISSION SOIL and the #PRIMA WEFE COMMUNITY OF PRACTICE** by developing common activities, living labs, capacity building, knowledge sharing….

Expected Impacts

- **LARGE-SCALE DEMO SITES, PREFERABLY LOCATED IN SOUTHERN COUNTRIES**

- **Restored desertified landscapes:** improve the functionality of ecosystems and landscapes to continue providing ecosystem goods and services, and offer proven and **cost-effective solutions for land restoration**

- **Increased biodiversity, soil health, and food production**

- **Decreased land degradation**. Increased /stabilized the surface of lands suitable for cultivation and other related ecosystem services**.**

- **Contribute to improving employment, especially for women and youth**

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KPI: KEY PERFORMANCE INDICATORS

- Hectares of desertified areas restored
- Number of innovative solutions applied for land restoration
- Number of business models deployed
- Number of stakeholders engaged

Contributions to EU policies, HE Mission and Partnerships

- EU Soil Strategy for 2030
- Biodiversity Strategy for 2030
- EU Adaptation Strategy for climate change

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Links with SDGs

SDG 2 (zero hunger), to ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively **improve land and soil quality.**

SDG 3 (good health and well-being), by enhancing **food security** and other livelihood benefits, and by increasing the resilience of the land and the populations depending on it;

SDG 6 (clean water and sanitation), through its contribution to sustainable water management

SDG 13 (climate action), by increasing resilience and creating synergistic actions for climate change adaptation and mitigation, for example, by **increasing soil carbon stocks**;

SDG 15 (life on land) Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, **combat desertification, and halt and reverse land degradation and halt biodiversity loss**..

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Thank you

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SECTION ONE

Call 2023 Food Value Chain Topic

TOPIC 1.3.1-2023 (RIA)

Increasing agri-food supply chain (cereal) resilience in the MENA region.

DEADLINE FOR STAGE 1 : 22/03/2023

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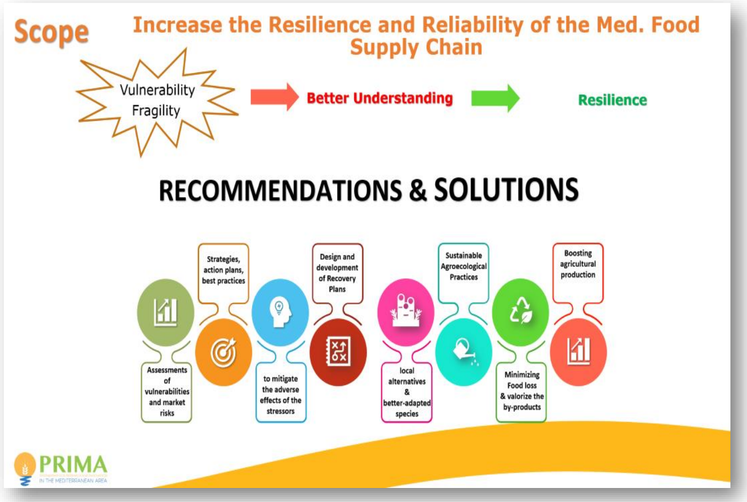
OVERVIEW

CHALLENGES

SCOPE



IMPACTS

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Challenges

World food prices hit a record high in 2022

Environment

Climate Changes

Deforestation

Drought

Desertification

Floods

Geopolitical Conflicts

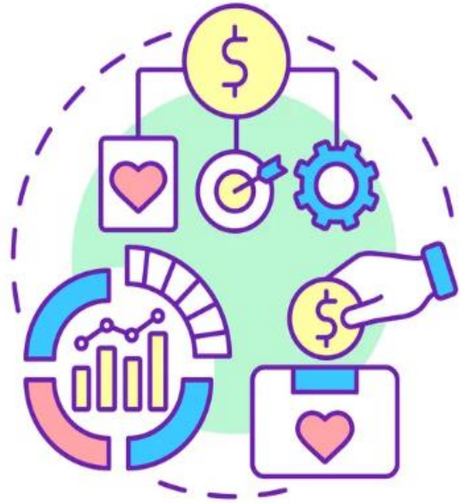
Russia-Ukraine War

Food Export Conflicts

Oil Pricing

Political instability in the Region

& COVID



Socio-Economic

Population Growth

Unemployment

Poverty, Low Income

Immigration

Supply Chain Disturbance

War, Pandemic & Climatic Stresses fuel a sharp rise in GLOBAL HUNGER

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Challenges

Cereals, the key to food security in the Mediterranean

For more about Cereals in the Mediterranean, check PRIMA: https://prima-med.org/cereals-the-key-to-food-security-in-the-mediterranean%EF%BF%BC/

FAO Report “The Importance of Ukraine and the Russian Federation For Global Agricultural Markets and the risks associated with the war in Ukraine”, 2022 (https://www.fao.org/3/cb9013en/cb9013en.pdf)

CEREALS IMPORT DEPENDENCY

Cereals are essential for a large part of the Mediterranean population. They are the basis for dishes such as pasta or couscous, indispensable in Mediterranean cuisine.

Cereals provide the most energy, carbohydrate, and essential source of protein, fiber, lipids, a wide range of minerals, and vitamins.

Due to Cereals’ **nutritional** richness, **cultural** aspects, and **heritage**, the **Southern Mediterranean countries consume the highest wheat per capita, about 128 kg, twice the world average**.

30-50% of their Cereals imports come from **Russia and Ukraine**, one of the world’s major food-exporting regions. The war in the area has disrupted agricultural production and trade. Not only have prices dramatically spiralled, but food scarcity is also a real risk: shelves of some bakeries are beginning to empty.

Climate change has long been **challenging cereal farming** in the Mediterranean area. With rising temperatures and decreasing rainfall, plantations are growing in more stressful environments, leading to a drastic drop in yields if their resilience is not increased.

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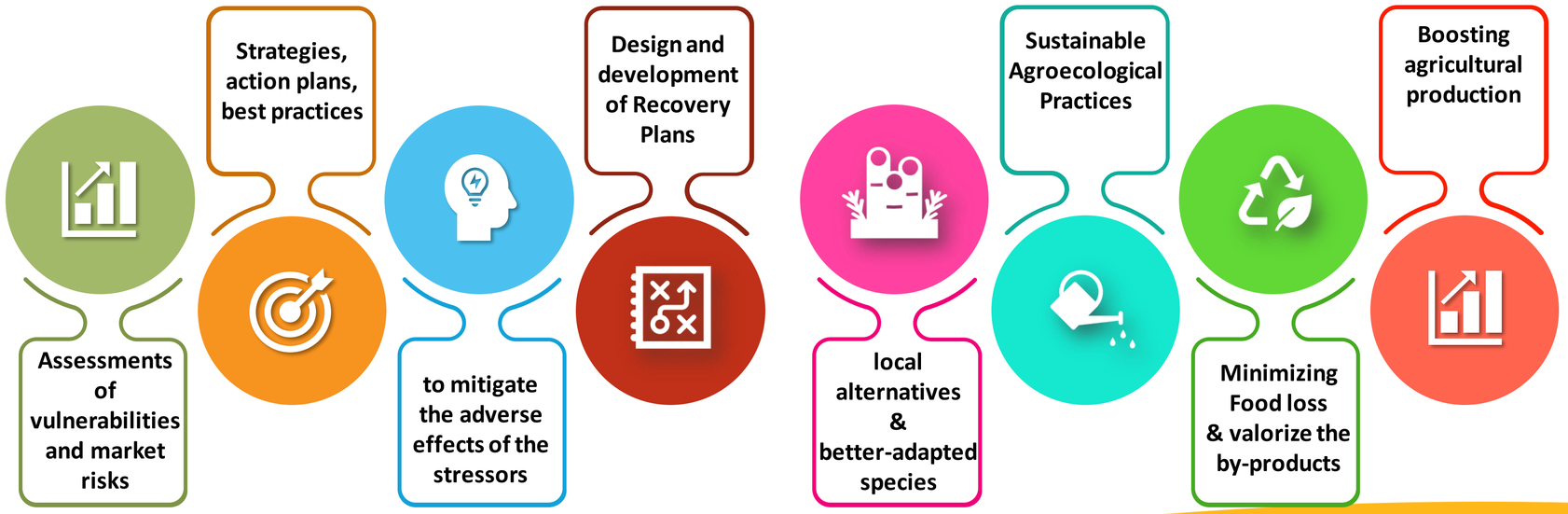
Scope

Increase the Resilience and Reliability of the Med. Food Supply Chain

Vulnerability
Fragility

→ **Better Understanding** → **Resilience**

RECOMMENDATIONS & SOLUTIONS



PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION IN THE MEDITERRANEAN AREA

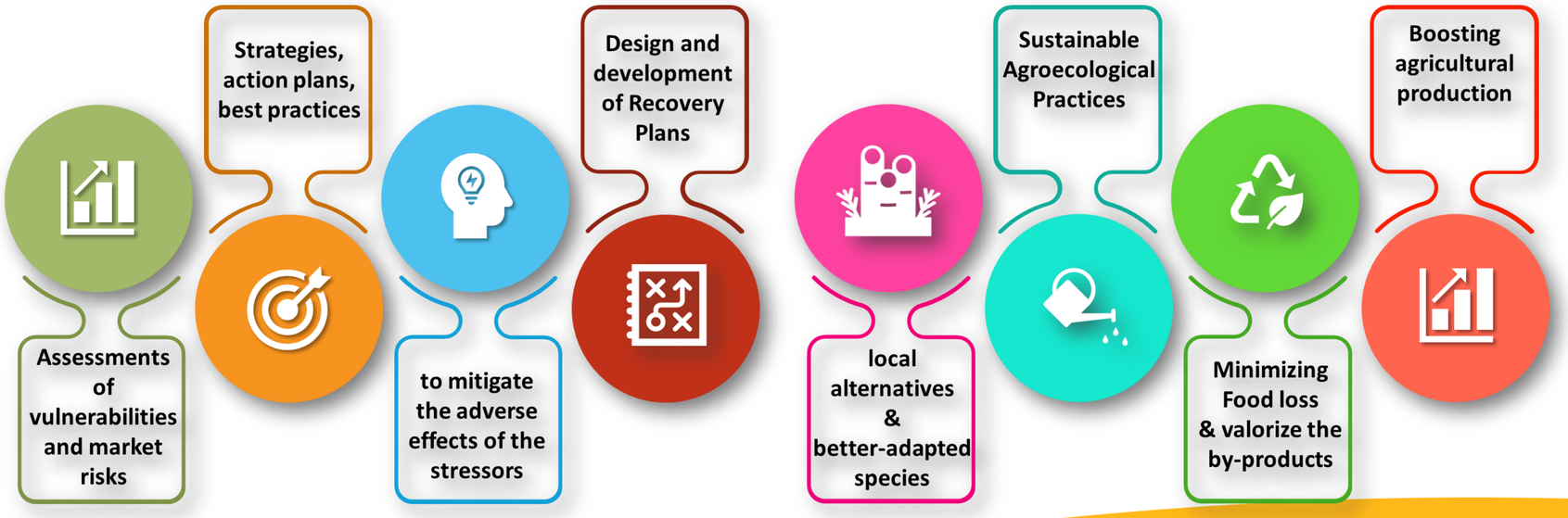
Scope

Increase the Resilience and Reliability of the Med. Food Supply Chain

Vulnerability
Fragility

→ **Better Understanding** → **Resilience**

RECOMMENDATIONS & SOLUTIONS



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Expected Impacts

Definition of the short and long-term drivers

Defining the Vulnerabilities, dependencies, and critical infrastructures of the food systems, and supply chain

Improved preparedness to deal with risks that may threaten the cereals supply chain.

Availability of data and platforms

Streamline local food environments

Diversification of food sourcing also exploiting digital solutions

Risk assessment and Evidence-Based strategies, action plans

Develop innovative solutions


Scientists


Policymakers


Small Farmers


Small Farmers


Companies


SMEs

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Key Performance Indicators

- # of identified drivers of change affecting the cereals supply chain
- # of strategies and action plans to ensure appropriate cereals supply during unforeseen crises
- # of solutions aiming to diversify food
- # of training ironments
- # of Solutions aiming to improve the supply chain of cereals

+ Project-Specific KPIs

Links To SDGs

SDG 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

TARGET 2.1 By 2030, end hunger and ensure access by all people;

TARGET 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production,

SDG 12 Responsible Consumption and Production

TARGET 12.2 By 2030, achieve sustainable management and efficient use of natural resources.

TARGET 12.3 By 2030, halve per capita global food waste at the retail & consumer levels, reduce food losses along production and supply chains, including post-harvest losses

SDG 17 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

TARGET 17.6 Enhance North-South, South-South, and triangular regional and international cooperation on and access to science, technology, and innovation and enhance knowledge sharing

TARGET 17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies

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PRIMA SRIA Priorities

Research Priorities 3: To integrate small producers into formal supply channels and improve supply chain management and reduce post-harvest losses while increasing the adoption of **technological**, **organizational**, and **cultural** innovations, as well as new **strategies** and **business models**, with the final goal of enhancing the **Mediterranean food security**.

OPERATIONAL OBJECTIVES

- /4 SMART AND SUSTAINABLE FARMING

- /8 NEW FOOD BUSINESS MODELS

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The PRIMA programme is an Art. 185 initiative supported and founded under Horizon 2020, the European Union's Framework Programme for Research and Innovation

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Calls 2023 W.E.F.E Nexus Topics

Topic 1.4.1 (IA)

Accelerate adaptation and mitigation to climate change in the Mediterranean region by deploying WEFE nexus solutions.

8.2 M€

TRL 6-8

2

Submission deadline Stage 1: 22/03/2023

WEFE NEXUS AWARD

Successful implementation of management practices of WEFE resources at the local or regional scale of the Mediterranean Region.

20000€

2

Submission deadline : 22/05/2023

Nexus WEFE Calls

Previous Calls

Biophysical state

Socio-economic impact

Call 2023

Nexus WEFE based adaptation and mitigation to Climate change

2019

RIA Assessing social, technical and economic benefits of a cross-sectoral governance of the Water-Ecosystems-Food Nexus.

2020

IA. Demonstrating benefits of the Water-Ecosystem-Food Nexus approach in delivering optimal economic development, achieving high level of environmental protection and ensuring fair access to natural resource

2021

IA Leveraging knowledge on the Nexus management of Water-Energy Food-Ecosystems resources in the Mediterranean region: from **concepts to practical solutions**

2022

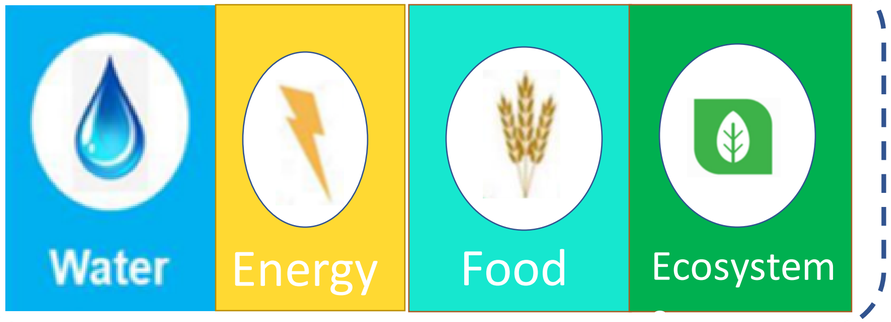
IA Predicting and testing options of **socio-economic adaptation** to declining Water-Energy-Food-Ecosystem (WEFE) resources in the Mediterranean Region

CHALLENGE

Climate Change

Reduce vulnerability of Climate Change

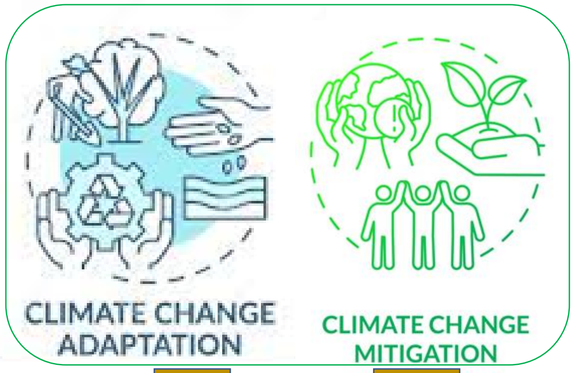
Extreme weather events (IPCC, 2022)



Mal-adaptation

Land degradation

migration



Increase vulnerabity

Sectoral adaptation strategies

- Climate Change adaptation strategies
- Policies, Governance

Integrated Management of Resources

+

Governance of Resources

SCOPE

NEXUS WEFE

Climate Adaptation and Mitigation strategies

Impact of CC on Nexus WEFE

Tools for assessing tipping points beyond which climate change impacts on WEFE

Climate models

WEFE Solutions

Co-deploy WEFE Nexus-based adaptation and mitigation solutions

- Changes in production and management practices
- Nature based Solutions

Impact of Nexus WEFE Solutions

Impact of Nexus-based adaptation and mitigation solutions

- Resources efficiency
- overall environment and societal well-being

Business Models

Business models targeting the Nexus-based adaptation and mitigation solutions

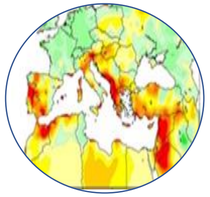
Roll out of the solutions at large scale

Cross-sectoral policies

Integrating adaptation and mitigation solutions into cross-sectoral policies

Feedback to policy-makers to revise their sectoral policies

SCOPE: Particular attention

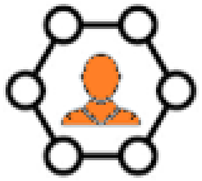


Large scale demonstrations sites

Ovoid small scale demonstration sites/Pilots

Funded Projects

Lessons learned from the Nexus projects by developing a close partnership during the implementation



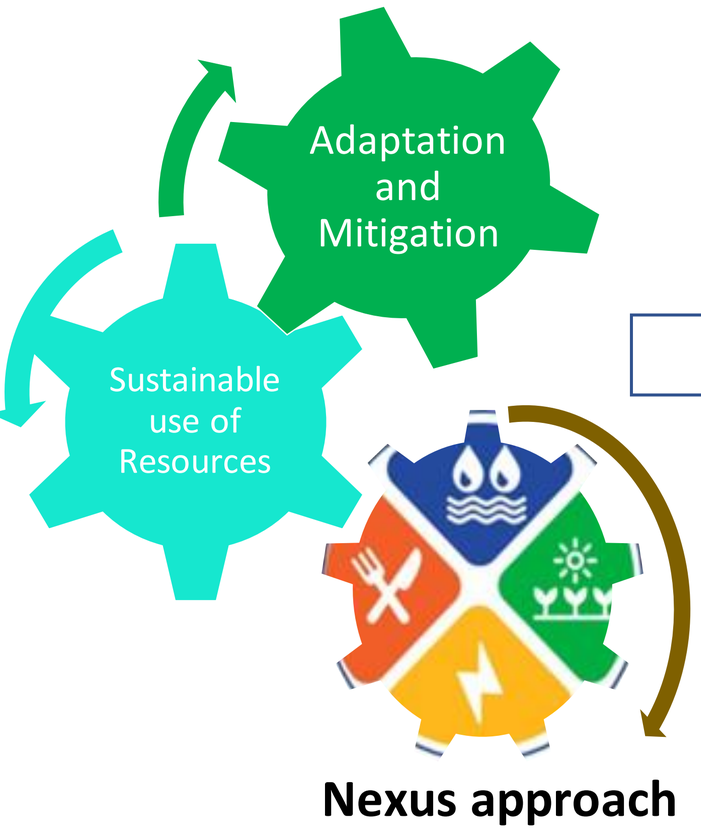
Stakeholders engagement

Encourage participation of stakeholders in the planning, implementation, and monitoring of WEFE nexus solutions

Links with PRIMA WEFE Community of Practice

Cross-organization collaboration and knowledge sharing

Expected Impacts



Nexus approach

Integration of Nexus perspectives

- Adaptation Plans
- Climate Policy

Economy efficiency

- Produce more with Less
- Improve the livelihood

Social equity

- 3 Securities (Water, Energy, food)

Environmental sustainability

- Sustainable Ecosystems services

Poverty reduction

Sustainable adaptation

Vulnerability reduction

SUSTAINABLE DEVELOPMENT GOALS

Key Performance Indicators

Number of Nexus-based adaptation and mitigation solutions able to minimize shock, risks, and vulnerability and address impacts and risks associated with climate change

Number of engaged stakeholders and end-users

Number of business models of Nexus-based adaptation and mitigation solutions developed

Links with SDGs

6 CLEAN WATER AND SANITATION

6.4. substantially increase water-use efficiency across all sectors

7 AFFORDABLE AND CLEAN ENERGY

7.2. increase substantially the share of renewable energy in the global energy mix
7.3. improvement in energy efficiency

2 ZERO HUNGER

2.1. End hunger and ensure access by all people
2.4. ensure sustainable food production systems and implement resilient agricultural practices

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

12.2. sustainable management and efficient use of natural resources
12.5. Reduce waste generation through prevention, reduction, recycling and reuse

13 CLIMATE ACTION

13.1. Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters
13.2. Integrate climate change measures into national policies, strategies and planning

15 LIFE ON LAND

15.1. conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services
15.3. combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods

LINKS WITH EU POLICIES, HE MISSION AND PARTNERSHIPS

- European Climate Law
- EU Adaptation Strategy
- Farm to Fork Strategy

Water Framework Directive

H. Mission Adaptation to Climate Change

WEFE NEXUS AWARD

Demonstrate the socio-economic benefits of the proposed WEFE solutions

Demonstrate that the proposed WEFE solutions have been adopted by the end-users
(in particular policy makers)

Demonstrate the replication and upscaling of the proposed WEFE solutions

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Thank you…

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SECTION 2 TOPICS

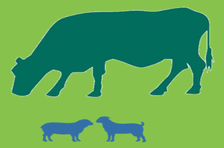
Submission deadline Stage 1: 29/03/2023

Topic 2.1.1 RIA

New governance models to define best practices for sustainable water management and conflict mitigation

> 1.5 M€

Topic 2.2.1 RIA



A step toward carbon-neutral farms: coupling renewable energy sources with circular farming systems.

>1.5 M€

Topic 2.3.1 RIA

Assessing novel antimicrobial food packaging and coating materials to reduce food waste to improve safety in the Mediterranean food supply chain

>1.5 M€

Water Management topic – Section 2

Topic 2.1.1 RIA

New governance models to define best practices for sustainable water management and conflict mitigation

> 1.5 M€

Submission deadline Stage 1: 29/03/2023

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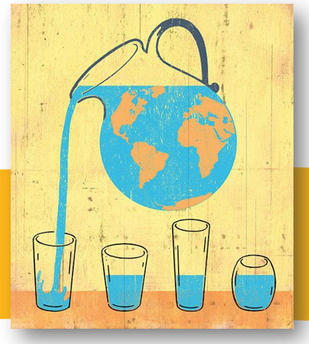
Water Management topic – Section 2

Challenge

Climate change → **Water stress**
Drought & Flooding → **Food Insecurity**

- Risk of conflict when no common agreement exists on sharing water resources
- Need for new governance models based on data
- Involvement of all relevant stakeholders at the local, national or transboundary levels



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Water Management topic Scope

Contribute to water sustainability & security in the MED:

Bring together;

- Stakeholders
- Administrations
- Non-state actors
- Innovative technologies

- Optimise water use
- Avoid depletion
- Create knowledgeable action
- Change dynamics of water demand & supply

- Map water resources
- Establish methodologies based on monitoring & modelling
- Technical solutions for information gaps
- Response to climate-induces risks
- Optimise water storage
- Preserve water in a circular economy context

- Examine governance solutions
- Analyse water tariff systems & prices
- Identify inefficiencies
- Identify impact on environment & water security
- Propose alternative models & instruments:
  - -affordability
  - -cost recovery
  - -willingness to pay

- Review legal frameworks & agreements
- Propose measures that guarantee fair & sustainable access
- Balance conflicting interests
- Minimise future conflict
- Enhance stakeholder participation
- Scale-up of existing practices

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Water Management topic – Section 2

Expected Impacts

Mitigation and prevention of current and future water conflicts under climate change conditions through

-developing necessary governance solutions

-fair allocation of water resources

Basin level

Elaboration of participation and governance models resulting in improved coordination of water users & stakeholders

Transboundary waters level

Adopt multilateral management agreements for strengthened cooperation among countries

Increased **water security** and strengthened protection of depleted water bodies & water-related ecosystems, stemming from adopting **innovative technical solutions** with appropriate legal, economic and governance instruments

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Water Management topic – Section 2

Key Performance Indicators

Provide specific KPIs to measure the outcomes of your project:

Number of newly developed water rights systems ensuring the right allocations for water users

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Water Management topic – Section 2

Links with EU Policies and Missions

Proposals should indicate their contribution to relevant EU policies and objectives in the context of the **European Green Deal**, **Water Framework Directive** (WFD), and relevant EU Missions and Partnerships.

Links with SDGs

Proposals should indicate their contribution to relevant SDGs and methodology to contribute to reporting SDG indicators.

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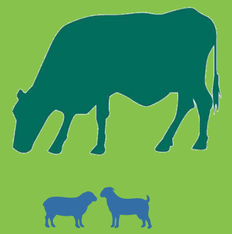
Farming Systems topic – Section 2

Topic 2.2.1 RIA



A step toward carbon-neutral farms: coupling renewable energy sources with circular farming systems.

>1.5 M€

Submission deadline Stage 1: 29/03/2023

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Farming Systems Topic – Section 2
Challenge

Non-sustainable agricultural practices

Increase in water and inputs used for irrigation and fertilisation

Increase in cost of production

Decrease in farmers income

Increase in GHG emissions

Harm adaptive capacity of agro ecosystems to climate change

External factors

-COVID-19

-Ukranian war

Increase in energy & inputs prices

Unbearable production costs for smallholders

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Farming Systems Topic – Section 2

Scope

Develop integrated farming systems

-Using renewable energy

-Decrease GHG emissions

-Maximise use/reuse of waste and inputs

Reusing treated wastewater & sewage sludge

Open field or protected farming systems

-Innovative, actionable and affordable

-Minimize costly use of external inputs

-Optimize resource use

-Greehouses, aeroponic, hydroponic, aquaponic and cascade systems

Open fields

-Eco-friendly practices

-Enhance integrated utilization of farm waste or agro-food by-products

Greenhouse conditions

-Improve passive accumulation of heat

-Carbon dioxide enrichment

Closed soilless farming systems

Ensure sustainability

-Hydroponics

-Aquaponics

-Vertical farming

Farming Systems Topic – Section 2

Scope

Ensure more carbon-neutral farming operations

Limit the impact of high energy prices on smallholders

coupled w/ renewable energy

.solar, .geothermal, .wind, .biomass/waste

<u>Estimate farm's energy consumption & CO2 emissions</u>

-ICT

-IoT

-nano-technologies

-sensor devices

<u>Demonstrate socioeconomic feasibility</u>

-Consider complexity of new integrated farming operations

-Consider need for specific skills related to simultaneous farming of diversified products

Involve stakeholders/**multi-actor approach** (policymakers, public authorities, farmers)

Living lab - test proposed solutions

Policy makers - scale up, disseminate, replicate at larger scale

Facilitate farmers' adoption - guarantees, concessional loans, subsidies

Capacity building

Awareness raising

Farming Systems Topic – Section 2

Expected Impacts

- Decrease in CO_2 equivalent emissions by using alternative sources of local and renewable energy
- Improving the overall efficient use of water, fertilizers, and nutrients in Med. farming systems by adopting a circular bio-economy approach
- Reduce the dependency on conventional energy suppliers
- Improve the overall land productivity by integrating different cropping systems
- Use of local energy from renewable sources
- Reducing the impacts of climate change on Med. farming systems

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Farming Systems Topic – Section 2

Key Performance Indicators

- Number of sustainable practices applied
- Reduction of external use of entrants
- Number of business models
- Reduction of food costs production costs
- Reduction of GHG

Links with EU Policies and Missions

Proposals should indicate linkages to relevant EU policies and objectives in the context of the **European Green Deal** and relevant EU Missions and Partnerships

- European Green Deal
- EU 2030 Energy Strategy
- Circular Economy Action Plan
- Water Reuse Regulation
- Methane Strategy

Links with SDGs

Proposals should indicate their contribution to relevant SDGs and methodology to contribute to reporting SDG indicators.

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Agro-Food Value Chain topic – Section 2

Topic 2.3.1 RIA

Assessing novel antimicrobial food packaging and coating materials to reduce food waste to improve safety in the Mediterranean food supply chain

>1.5 M€

Submission deadline Stage 1: 29/03/2023

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Agro-Food Value Chain topic – Section 2

Challenge

Inadequate facilities

Poor maintenance of proper conditions

-Food contamination & spoilage

-Loss of nutrients

Environmental concerns

<u>Biodegradable</u> packaging materials

-Sustainable, env. friendly, cost-effective

-Prevent food deterioration

-Preserve/prolong food quality & shelf-life

New food packaging technologies

-Minimise hazards of foodborne pathogens

-Predict & enhance shelf-life

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Agro-Food Value Chain topic – Section 2

Scope

Novel, cost-competitive and versatile biodegradable food packaging/coating materials

- Control packaging atmosphere
- Prevent food spoilage
- Cause no env. Damage

Bioplastics/biocomposites for food packaging

- Determine env. impact
- Eco. Feasibility

Microbiome solutions

- Predictable and sufficient shelf life
- Substitute anti-microbial chemical agents

Tailor for different traditional Med. food categories and processing techniques/technologies

- raw
- cooking
- fermentation
- Dehydration

ICT-based solutions

- Reduce waste
- Improve the efficiency of the supply chain
- Provide relevant actors with info on storage & transportation conditions

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Agro-Food Value Chain topic – Section 2

Scope

Sound business models

- Benefit all actors in value chain
- Maximise biomass valorisation
- Protect biodiversity/environment
- Secure food systems

Establish local sustainability-oriented bio-based value chains

- Demonstrate replicability in Med
- Low bio-economy activities
- Validate market acceptance

Multi-actor approach

Active engagement & communication

- Stakeholders
- End-users
- Food systems – producers, retailers, households, chefs

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Agro-Food Value Chain topic – Section 2

Expected Impacts

- Introduce new environmentally-friendly techniques to reduce food waste
- Demonstrate efficacy of bio-based materials for packaging to improve food safety and reduce food waste that meets market requirements.
- Reduce the need for chemical treatments by using agricultural by-products and control pathogenic bacteria while preserving food's nutritive and organoleptic properties.
- Job creation and job retention activities with equal gender opportunities.

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Agro-Food Value Chain topic – Section 2

Key Performance Indicators

- # of newly designed food products with enhanced shelf-life, quality and health-related beneficial properties.
- # of Innovative bio-based materials from packaging to improve food safety, reduce food wastes.
- # of jobs created/retained with equal gender opportunities.

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Links with EU Policies and Missions

Proposals should indicate linkages to relevant EU policies and objectives in the context of the **European Green Deal** and relevant **EU Missions and Partnerships.**

- Farm-to-Fork Strategy
- Waste Framework Directive
- EU Food 2030 R&I Policy (Circularity and resource efficiency)
- Circular Economy Action Plan
- EU Plastics Strategy

Links with SDGs

Proposals should indicate their contribution to relevant SDGs and methodology to contribute to reporting SDG indicators.

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