

NEXUS-NESS

NEXUS NATURE ECOSYSTEM SOCIETY SOLUTION

Fair and sustainable resource allocation demonstrator of the multiple WEF E Nexus economic, social and environmental benefits for Mediterranean regions

GRANT AGREEMENT NUMBER 2042

Deliverable D3.5

Pathways to impact and capacity building: NEL training and capacity building material V1.1 30 November 2022

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WP3 Leader SSSA, Rudy Rossetto, Task 3.4 Leader UNIFI, Enrica Caporali





**NEXUS-NESS - NEXUS NATURE ECOSYSTEM SOCIETY SOLUTION:
FAIR AND SUSTAINABLE RESOURCE ALLOCATION
DEMONSTRATOR OF THE MULTIPLE WEFE NEXUS ECONOMIC,
SOCIAL AND ENVIRONMENTAL BENEFITS FOR MEDITERRANEAN
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30 November 2022

WP3 Leader SSSA, Rudy Rossetto, Task 3.4 Leader UNIFI, Enrica Caporali

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WP-Leader	Rudy Rossetto, rudy.rossetto@santannapisa.it		
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Task Leader	Enrica Caporali (UNIFI) enrica.caporali@unifi.it		
Main Author	Enrica Caporali, Tommaso Pacetti, Marco Lompi, Jerome El Jeitany (UNIFI) (enrica.caporali@unifi.it)		
Contributors	Rudy Rossetto (SSSA) (rudy.rossetto@santannapisa.it)		
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Executive summary

This report describes the strategy for capacity building developed in task 3.4. “Pathways to impact and capacity development” (Task leader: UNIFI, participants SSSA) of Work Package 3. The plan was developed into the framework of Work Package 3 as a tool to organise all the project activities dedicated to build knowledge and capacity, supporting the NEL transition towards the development of Nexus management plans.

The capacity building strategy aims at identifying the proper set of activities needed to improve the skills of stakeholders in dealing with Nexus related problems and assuring that the understanding and application of the NEXUS-NESS solution is fully achieved. To do so, the plan rationale is based on the “training for trainers” approach where the initial training of the partners involved in the NELs activities will serve as a basis for building capacities at national level in further phases of this project.

In this sense the capacity building activities are strongly connected to the necessity of disseminating the project activities (WP6) to which the capacity building is also contributing by providing the feedback received from the NELs. The capacity building activities are also linked to WP2 supporting the implementation of the RRI roadmap (adjust and intensity actions until impacts are met) and the use of the Multi-Stakeholder User Platform MSUP.

The release of the deliverable has been postponed from month 15 to month 18 to allow the proper definition of a capacity building strategy that could take into account the needs and requests coming from the NELs. This version of the capacity building strategy set the NEXUSNESS project roadmap for the capacity building activities and will be updated each year, valorising the feedbacks received during the implementation of the project and including a synthesis of the activities carried out each year.

1. Introduction and scope of the plan

The concept of capacity building is a key strategy in an increasing number of intervention programs of the United Nations and other governmental and nongovernmental actors. The very concept of capacity and its strengthening whether at the individual, community or institutional level is consensually seen as a basis for truly lasting and sustainable development.

From a theoretical perspective, the emergence of the concept of capacity building can be traced back to the research of Amartya Sen (Economics Nobel Prize in 1998). His “capabilities approach”¹ offers a profoundly innovative method for analysing and assessing poverty, inequality and development; focusing on what people can actually do and highlighting that capabilities are the real freedoms that people have to achieve their potential doings and beings.

UNDP defines capacity development² as the process through which individuals, organisations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time. Capacity development is fundamentally about unlocking transformative change: change that is generated, guided, and sustained by those whom it is meant to benefit.

Given this background the capacity building strategy outlined in this document aims at translating the knowledge produced by the NEXUSNESS project into a transition process that will guide and empower the NEL stakeholders towards the adoption of a Nexus perspective in the management of natural resources, informing their choices and strengthening their capability of sustainably use them. To do so, the capacity building strategy builds on the NEXUSNESS outcomes to assure their adequate uptake by the NELs providing the training necessary to arrive at the definition of a Nexus Management plan. Specific WEF Nexus training will cover all the main NEXUSNESS theoretical and technical elements. Starting from the Innovation Ecosystem Approach (IEA) based on Responsible Research and Innovation (RRI) principles up to the use of the Multi Stakeholder and User Platform (MSUP), the strategy will support the NEL throughout the entire duration of the project and will set the basis to maximise the project impacts.

The deliverable is structured as follows: i) Introduction and scope of the capacity building strategy, ii) Definition of the capacity building strategy approach, iii) Description of the capacity building activities, iv) definition of the capacity building timing and targets,v) definition of impact and expected outcomes.

¹ Kuklys, W. (2005). Amartya Sen's capability approach: Theoretical insights and empirical applications. Berlin, Heidelberg: Springer Berlin Heidelberg.

² UNDP (2008). Practice note: Capacity development
<https://www.undp.org/publications/capacity-development-practice-note>

2. Capacity building strategy approach

The capacity building adopts a multi-dimensional temporal and cross cutting approach, centered around developing the individual capacity of trainers and extending it to the community of beneficiaries. Following the Training of Trainers model (ToT), the aim is for a selected group from each NEL to undergo the suggested training, thus being able to teach other people the material. Despite the simplicity of approach, a high level of care should be put into ensuring that trainers will be able to learn, apply, and then eventually teach the material presented. Hence, the planned training activities will look at engaging in effective, observatory, participatory, and dynamic training.

The specific objectives of this capacity building activities are: 1) to strengthen the Nexus understanding and supporting the NEL transition process towards the Nexus Management Plans, 2) to serve as a testing phase of the NEXUSNESS developed tools (modelling, etc.), 3) to serve as the basis for building capacities at national level in further phases of this project.

The ToT approach will allow the NEL leader partners to acquire all the knowledge and tools needed to properly prepare the workshops with stakeholder, assuring the widespread dissemination (connected to WP6) of the lesson learnt within the Nexusness consortium to the NEL active participants . Besides the work done during the NEL workshops, each NEL leader partner will also have the possibility to set up (with the help of all partners) specific national level training activities aiming at supporting the uptake of the Nexusness proposed approach and products to the broader public (including but not limiting to the identified NEL stakeholders).



Figure 1. Training of trainers approach, with NEL leaders undergoing the suggested training, thus being able to teach other people the material during the workshops.

3. Capacity building activities

This section describes the foreseen programme of capacity building activities in the NELs. In the ToT phase a series of online training activities will be organised, mainly adopting these modes (adaptable to the specific NELs needs):

- webinars: 1 hour meetings with an expert (½ hour presentation + ½ hour Q/A)
- online workshops: 3-4 hours meeting with lecturing and interactive activities
- short courses: 1 or multiple day(s) activities with lecturing hands-on training activities (online or on site)

The ToT activities will introduce the NELs partners on the main NEXUS-NESS methodologies and will support their uptake during the NELs workshops. The programme of the activities is divided into 3 macro categories: Nexus introduction, Nexus Modelling, Nexus implementation and measurement. Each category is subdivided in modules, as described below:

- **1. Nexus introduction**

This category is designed to give the basic knowledge regarding the Responsible Research and Innovation approach and the Nexus Grammar to the NEL partners, in order to ensure their understanding of the application of the NEXUS-NESS solutions they will need to implement in their ecosystem labs.

- 1.1 Innovation Ecosystem Approach (XPRO)

The NEXUS-NESS Innovation Ecosystem Approach is the basic tool for the communication with the stakeholders and the identification of the NEL challenges in the bottom-up approach to co-produce and co-test the WEFE NEXUS Management plans. A master class will be held by XPRO Consulting to train all the NELs involved partners at once. The activity will be focused on the Responsible Research and Innovation Roadmap.

- 1.2 Gender (UNIFI)

Gender issues are a key component within the RRI roadmap and must be considered to ensure gender equality in every population groups and sectors regarding the WEFE NEXUS (for further details please refer to deliverable D2.3) . Since gender inequalities can differ across different countries, a dedicated and specific training on Gender issues will be held by UNIFI for each NEL partner after an introductory webinar to present the gender dimension in the WEFE nexus.

- 1.3 Understanding the Nexus (UNIFI)

An introduction to the concept of Nexus is needed to increase the capability in the identification of the challenges in each NEL and to develop the Nexus management plans. The course will include a focus on the Nexus Grammar presenting the key terms and definitions (online webinar) to understand and assess the interactions and connections between the 4 components involved in the Nexus (Water-Energy-Food-Ecosystem). Specific. Moreover specific follow up meetings will be organized to support the NEL transition towards the WEFE Nexus approach. In particular, activities related to the following topics are foreseen: RRI, Innovation Ecosystems, serious games for the Nexus.

- **2. Nexus Modelling**

- **2.1 FREEWAT (SSSA)**

WATNEEDS is an agro-hydrological model that simulates crop production under different scenarios (climatic conditions, land use, irrigation strategies among others) at the large scale. Therefore, the model is useful to assess the impact of the co-design WEFE NEXUS Management Plans on the NELs. A preliminary introduction will be held by SSSA with each NEL followed by onsite short courses to train all the NELs involved partners and stakeholders. These training activities will be focused on the model use and the data required to run the model.

- **2.2 WATNEEDS (POLIMI)**

WATNEEDS is an agro-hydrological model that simulates crop production under different scenarios (climatic conditions, land use, irrigation strategies among others) at the large scale. Therefore, the model is useful to assess the impact of the co-design WEFE NEXUS Management Plans on the NELs. A single preliminary introduction will be held by POLIMI with each NEL followed by onsite/online short courses to train all the NELs involved partners and stakeholders. These training activities will be focused on the model use and the data required to run the model.

- **3.3 Cost-Benefit analysis (FEEM)**

Cost-Benefit Analysis (CBA) is an essential tool to assess whether the possible spin-offs generated by an investment project are sufficient to cover its costs. Compliance with this condition is necessary for a European project to be funded by the European Cohesion Fund, which intends to commit its resources only to high quality projects. The European Commission has issued, and constantly updates, guidelines for the conduct of the CBA. This training will illustrate the key concepts and ideas behind this evaluation tool.

- **3. Nexus implementation and measurement**

- **3.1 WEFE Nexus Indicators (SAS+ UNIFI)**

Measurable indicators are developed within the NEXUS-NESS project to quantify the effect of optimization strategies supplied by the Management plans on the current scenario. The indicators will be stakeholders-oriented to increase the transition towards a WEFE-NEXUS Vision and Action Plan. For this reason, specific training activities will be dedicated to the Nexus indicators definition and assessment (including the description of the data that are needed to calculate the WEFE NEXUS Indicators).

- **3.3 Multi-Stakeholder and User Platform - MSUP (UNISTRAPG)**

The MSUP Platform will support stakeholder engagement, consultation and information production and sharing process of the NELs. A dedicated training activity will be organized to illustrate the functionalities of the platform and their use in the NELs.

4. Timing and Target

The first part of the capacity building activity (Nexus introduction) is dedicated to all the NEXUS NESS partners, as this part is devoted to an introduction on the basic concepts of the Water Energy Nexus. On the contrary, the main target of the second and third part of the activities is represented by the NEL leader partners since the aim of the webinars and courses is to give all the tools that are needed to apply the NEXUS NESS methodology on each specific NEL.

The activities are temporally distributed in accordance with the organisation of the workshop in the NEL. The idea is the before each workshop the NEL leaders will be trained to introduce new concepts and tools in the NEL and to steer the advancement of the NEL towards the definition of a Nexus based management plan.

	Activity	Activity leader	Timing	Target
1. Nexus Introduction	Innovation Ecosystem Approach	XPRO Consulting	Sep-21	All NEXUS NESS partners
	Gender training	UNIFI	September-October 2022	All NEXUS NESS partners
	Understanding the Nexus	UNIFI	December 2022- February 2023	ALL NEXUS NESS partners
2. Nexus Modelling	FREEWAT	SSSA	March-June 2023	NEL leader partner
	WATNEEDS	POLIMI	March-June 2023	NEL leader partner
	Cost-Benefit analysis	FEEM	March -June 2023	NEL leader partner
3. Nexus implementation and measurement	WEFE Nexus indicators	SAS + UNIFI	June-- July 2023	NEL leader partner
	Multi-Stakeholder and User-Platform (MSUP)	UNISTRAPG	June-November 2023	NEL leader partner

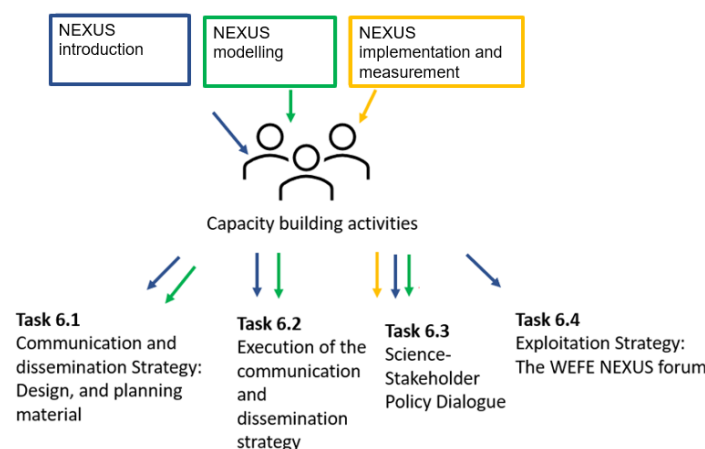
5. Impact and expected outcomes

Capacity building activities are expected to work harmoniously to provide a practical exposure to the tools and challenges expected when dealing with the complexity of the Nexus approach. Each of the 3 categories of the activities suggested feed into the tasks of WP 6 “Dissemination, Communication, and exploitation”. Figure 1 illustrates the input provided by the capacity building activities into WP6. It is detrimental to mention that all capacity building activities are centred around stakeholders and participants meaning that the activities shall not only provide an opportunity for learning for the participants, but also an opportunity for creation of beneficial information for their case study. This amplifies the importance of maximising stakeholder participation. The flow of benefits will be centred around trainees from different backgrounds who will be able to eventually transfer these benefits to the community. Hence, a great deal of attention is put on the communication part to ensure full transfer of the benefits delivered.

Starting with the activities under the “Nexus Introduction” category, participants will undergo a series of workshops aiming at presenting the synergies between different resources exploited and produced in their respective locations. In fact, and under the European Union’s framework Programs, Responsible Research and Innovation (RRI) workshop, along with the gender component training, will show the process required to achieve development in the NELs setting, while taking into account both environment and society. Hence, a primer is set for the third activity (1.1.3) where working on a Nexus “Grammar” will help participants appreciate and understand the connections of the several components of Water, Energy, Food, and ecosystem to be studied. Consequently, the “Nexus Introduction” will feed into tasks 6.1,6.2,6.3, and 6.4.

“Nexus Modelling” activities address the design and planning component of the strategies to be created for resource management. Combining natural and agricultural resources with economic modelling allows to assist stakeholders to value the benefits of possible nexus solutions. While specific training on FREEWAT and WATNEEDS presents technical information for the agricultural system studied, the Cost benefit analysis extends this input to the economic and sociological system in accordance with the RRI. Tasks 6.1,6.2,6.3 are directly addressed by the “Nexus modelling” activities, especially in establishing material for engaging in an effective Science-Stakeholder dialogue.

Building off the modelling activities, the “Nexus implementation and measurement” emerge as a common science-based dialogue tool that helps stakeholder attenuate existing complexities in the synergies of the nexus approach. In terms of valuation of the nexus gains in each NEL, stakeholders will be able to critically assess several indicators and interpret them based on the given context. Task 6.3 directly benefits from the integration of the indicators within the policy dialogue.





ANNEX

Implemented activities

- **NEL Innovation Ecosystem Approach Master Class**

The activities carried out during the masterclass are described in the Milestone M 2.1

- **GENDER training activities**

Due to the lack of gender knowledge and skills of the project partners assessed during the project's first months, a gender equality training course was created and implemented between September and November.

All the project partners have been invited to attend, but the training was mandatory for the teams of the NELs Leaders (SSSA, UPM, IRA, CRDA, AU).

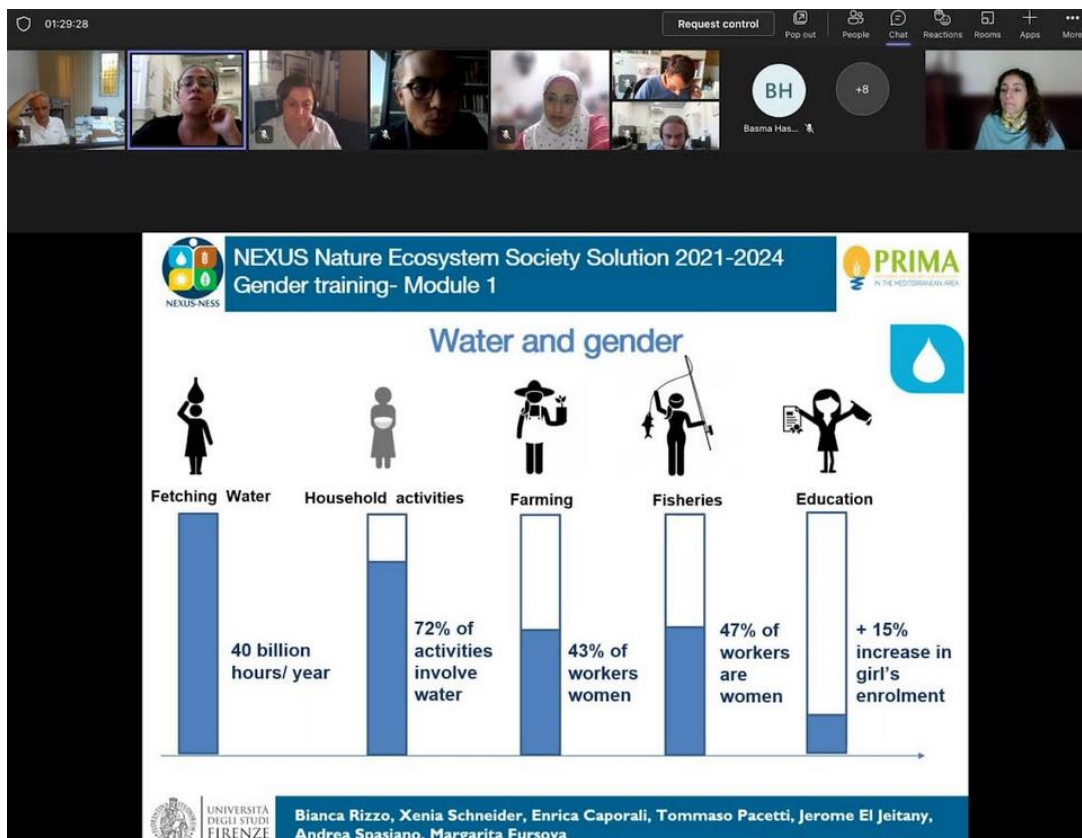
The training has been structured as follows:

a) **MODULE 1- Gender basic concepts**

This module had the following specific objectives:

- make NELs leaders aware of the importance of women for food security and resource management;
- make clear how women and men affect and are affected by the use of the resources differently;
- Describe the legal international framework for gender equality and women empowerment.

The first module was implemented online on September 27th for Spain, Tunisia and Egypt and on November 14th for Italy. A total of 29 participants attended.



During this Module, participants were trained on Gender basic concepts(i), linkages between gender and WEF sectors (ii), and the international framework on gender equality(iii).



It was implemented via Microsoft teams and the material was shared with a PowerPoint presentation. Interactive activities (such as multiple-answer quizzes and brainstorming) were carried out through SLIDO.

b) **MODULE 2- Gender analysis at NEL level.**

The second module was implemented on October 4th (Spain NEL, 2 participants from UPM), October 5th (Tunisia, 3 participants from IRA and CRDA), October 6th (Egypt, 3 participants from AU) and November 14th (Italy, XX participants from SSSA). It focused on how to conduct a gender analysis in the specific NEL. National statistics on gender were presented as a starting point to understand which issues are relevant to integrate the gender dimension in the NEL. A questionnaire to gather information at the household level in the NELs was presented and participants were asked to adapt the questions on the basis of their knowledge of sociocultural norms in the country. The questionnaire aims to collect information on the division of labour, the household decision-making processes, the control over productive assets, the access to public spaces and services and the meaningful participation in public decision-making in producer's families in the NELs.