

LEarning and action alliances for NexuS Environments  
in an uncertain future

# LENSES

WP3

## D3.2. Toolkit for Nexus policy and institutional analysis

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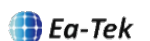
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Annex: Script of the PEA semi-structured interview

## Executive summary

This report introduces the Political and Economic Analysis (PEA) methodology and its potential benefits for improving the policy analysis by better understanding power relationships and barriers and drivers for effective adoption of policies and normative changes. The overall methodology is envisaged in six different steps accounting for social and ecological systemic dimensions (“layers”) that can be used together or separately. Most of these steps are documented in other LENSES deliverables. While the tools provide a structured approach for rapid analysis, other factors such as capacity, experience or funding opportunities will shape the direction taken. The report also explores the conceptual basis of including values into policy planning and proposes how PEA analyses could become a relevant input for policy modelling.

At the current project stage, we still have not been able to fully explore the connections and linkages between the different layers. As a next step, the process will be fully implemented in the Doñana pilot following a ‘learning by doing’ approach. The lessons learned will be used to complete, refine and polish the current methodological approach.

An updated version of this deliverable will be produced by M36 in which the full implementation in the Doñana pilot will be detailed, providing an updated version of the methodology, results and analysis.

# 1. Introduction

## 1.1. Main aims

The task at hand is to undertake a participatory mapping of the political-economic and policy context, using a combination of a political economy analysis (PEA) and a layered analysis of the current EU regulatory framework. A Political and Economic Analysis (PEA) is a tool used to understand the complex political and economic context within which organisations work. There are many examples in the literature of political-economic analyses (see Edelmann, 2009; Copestake and Williams, 2012; and Whaites 2017 as examples). In these types of analyses, the overall aim is always to look deeper into reality as means to understand the relationships between economy and policy, whether it is at the sector, region, country level, or any other. What it is expected to be understood as an outcome is the answer to *why there are policies which are not being fully implemented nor reformed when needed*. PEA analyses disentangle the interactions between actors, institutions, formal and informal norms in a holistic manner. This allows for understanding of the evolution and the dynamics of the interactions between the political and economic spheres, the key resources and players as well as the power setting. As an outcome of this analysis, we'd be better oriented to give advice or support changes from within and from outside of the system. As it is suggested in the literature, the present PEA will be complemented by a layered analysis that considers the value frames that underpin current economic models, the current normative framing and incentive schemes in sectoral policies. It is crucial to begin discussing the importance of incorporating moral considerations into environmental policy research, particularly in relation to culturally specific contexts and values related to nature (Fremstad and Paul, 2022). Current approaches to policy modelling often lack the ability to capture morally salient dimensions of cultures, which can drastically alter the estimated impact of a policy. This problem is exacerbated by the increasingly complex and non-linear nature of systems and the political pressures that policy makers face (“wicked system problems” can lead to unexpected outcomes).

The overall aim is to provide a toolkit which will serve as a structured approach for analysing how change could be catalysed, targeted to specific case studies from the national to the catchment/regional level. Participatory mapping exercises will be carried out as well as engaging key stakeholders (winners/losers). Through the alignment of the analysis to other LENSES tasks, such as the implementation of the Social Network Analysis, the Participatory System Dynamic Model and the Transition Roadmaps, it will provide a structured approach to detect the complex web of interactions shaping decision-making, formal and informal, taking place in Nexus governance. Targeted to the case studies, this will allow LENSES pilots to detect deep-rooted barriers hampering the effective multi-level cooperation for Nexus implementation and contribute to understand how change could happen, what are the key “agents of change” and the resources to be committed (e.g. key pieces of information to be shared) in order to enable the expected changes. This will help shape our understanding of Nexus strategies, programmes and contextualise ‘everyday’ decisions. The ultimate goal is to gain insights into how policies and regulations are formed, implemented, and evaluated, and how these processes can be improved.

The analysis will be undertaken in the Doñana pilot as a prototype, replicated in a second case, and then a toolkit will be developed to facilitate replication in other cases.

## 1.2. Why is it relevant to perform a political and economic analysis (PEA)?

In LENSES the PEA will provide a framework for analysing the factors that affect the provision of ecosystem services related to the Nexus, and aims to help to design interventions that are more effective and sustainable. For example, in the water and sanitation sector, the PEA toolkit has enabled organisations to identify the political and economic factors that create barriers to, access to water and sanitation services, or to aid to design interventions that address these barriers<sup>1</sup>.

In LENSES, we have designed a PEA toolkit consisting of several steps, both social and ecological, including defining the scope of the analysis, identifying stakeholders, analysing power dynamics, understanding the values underpinning behaviour, incentives, risks, and opportunities, and developing recommendations based on the analysis. The proposed six steps methodology (Figure 1) is particularly useful for Nexus research because it helps shape pilot's goals aligned with country strategies, programs, and even stakeholders' everyday decisions, by providing a set of core questions and discussion points to guide the analysis. The toolkit includes participatory exercises that help visualise the political economy features being analysed, which can help produce rapid, high-quality analysis and increase understanding of which strategies, tactics, or decisions may be appropriate in different contexts.

The following sections will describe each step, its overall objectives, proposed methodology, as well as the example from the Doñana pilot. However, it is important to note two main issues. First, the proposed PEA analysis is an ambitious exercise. To facilitate its implementation, some steps will result from direct inputs from other LENSES activities in WP2, WP3, and WP4. Therefore, we will refer to the corresponding deliverables and present a general overview of the methods and results from the Doñana pilot. Secondly, Steps 2a, 3-6 are to be implemented in the next months until the end of the project. There is a special focus on describing steps 2a and 3a, which offers interview guidelines and an evaluation framework to understand values underpinning current ways of thinking and doing. As a result, this deliverable will introduce the theoretical basis and the toolkit that will be conducted, and the consolidated toolkit and the example from the Doñana pilot will be included in the updated version of this deliverable by month 36.

STEPS	Social	ecological
Step 1	<b>What are the pilot's main characteristics?</b> map the current stakeholders, roles and responsibilities	<b>What are the pilot's main characteristics?</b> map current resource allocation
Step 2	<b>Where does the power lie?</b> identify barriers and opportunities for stakeholders to adopt a nexus approach	<b>Where does the power lie?</b> map the interrelations at system level, i.e. the nodes

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<sup>1</sup>[Political Economic Analysis Toolkit \(WaterAid\)](#)

Step 3	<b>Which ways of thinking shape the present-day system?</b> Map the current needs and values	<b>Which ways of thinking shape the present-day system?</b> Quantify the current needs and values
Step 4	<b>What is the current situation?</b> Map the current policy frames in the three areas- binding commitments	<b>What is the current situation?</b> Map the gap in the three sectors (BAU scenario)
Step 5	<b>Where do we go now?</b> Develop the green vision and pathways	<b>Where do we go now?</b> Trade off and Synergies in Scenarios
Step 6	<b>What next?</b> Potential low hanging fruit (leverage points; “shared value”) and barriers- individual winners and losers - to collective winners	<b>What next?</b> Costs and benefits (quantified) of meeting policy targets

*Figure 1. Overall methodology*

## 2. Toolkit

### Step 1: What are the pilot’s main characteristics?

#### Step 1a: Stakeholder mapping (who, roles and responsibilities)

This step utilises the methodology proposed in **D2.1 "Stakeholder engagement guidelines"**, which was implemented in Task 2.1 of the LENSES LAAs formation and co-creation process. The guidelines enable the identification of key actors for the main Nexus domains across different categories, as well as the analysis of stakeholders' interests, aims, and needs in relation to the potential operationalisation of the LENSES approach (Figure 2). Additionally, the guidelines provide an analysis of stakeholders based on their interest and influence, as shown in Figure 3. Using this analysis, a stakeholder network engagement strategy can be developed to support the creation and operationalisation of LAAs.

PILOT NAME: DOÑANA

	NEXUS DOMAIN		
	WATER	ECOSYSTEMS	FOOD
KEY STAKEHOLDERS	W1: Guadalquivir River Basin Authority – water planning unit [POL]	E1: Andalucía Regional Government - Environment [POL]	F1: Andalucía Regional Government - Agriculture [POL]
	W2: Irrigators Association [USER]	E2: WWF [CIT, USER]	F2: Farmers' Union - ASAJA [USER]
	W3: Irrigation consulting firm [COM]	E3: Ecological restoration Experts [EXP]	F3: IFAPA (regional agro-research institute) [RES]
	W4: Spain Geological Survey [RES]	E4: Doñana Biological Station [RES]	F4: Agriculture policy and management Experts [EXP]
	W5: Water policy Experts [EXP]	E5: Eco-tourism [COM/CIT]	F5: ZITRUS project [RES/USER]
	W6: Guadalquivir River Basin Authority – water use monitoring unit [POL]	E6: Doñana Natural Space [POL]	F6: SAI platform (association of EU large food retailers) [USER]
	W7: MITECO (Spain Ministry on environment) [POL]	E7: Experts in ESs and scenarios [RES/EXP]	F7: Farming companies (middle size) [COM]
		E8: Associations for Doñana preservation [CIT]	F8: Individual farmers [USER]
			F9: CSIC-IRNAS (national research council – irrigation in woody crops) [RES]

Figure 2. Initial list of stakeholders in the Doñana pilot according to their Nexus domains. Source: D2.1.

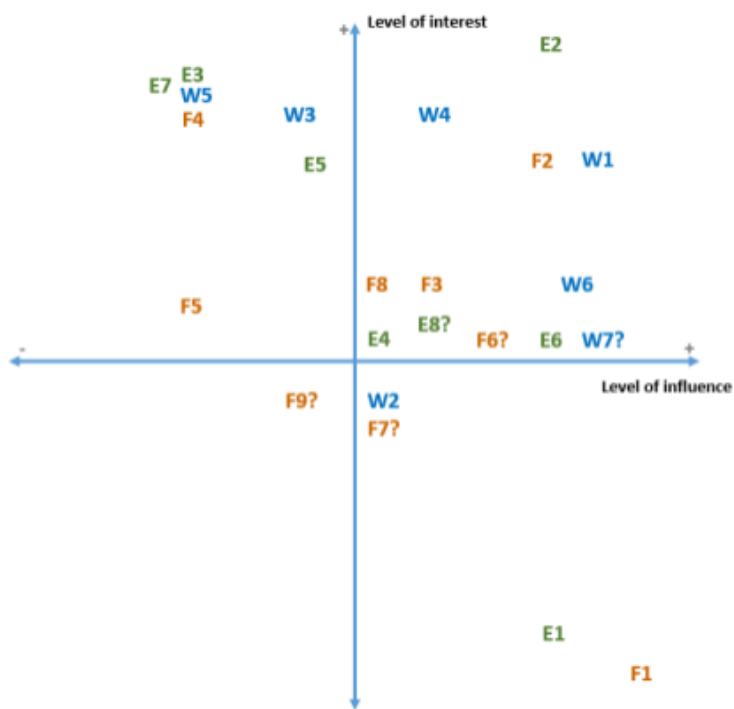




Figure 3. Stakeholder classification matrix regarding influence and interest criteria in Doñana pilot. Source: D2.1."Stakeholder engagement guidelines".

## Step 1b: Current resource allocation

This step employs the methodology proposed in **D4.1 "Report on PSM and SNA. Identification of DOs, NRQs and NIs"** and implemented in Task 4.1 "Nexus structure and Nexus indicators". The goal of this step is to identify the key ecosystem services required to maintain a satisfactory level of security in the Nexus domains. To achieve this, a combination of individual semi-structured interviews<sup>2</sup> with key stakeholders (Figure 4), elicitation and analysis of stakeholders' knowledge, and literature review is conducted to map the various interactions among ecological resources and processes that impact ES production and provision. Furthermore, the network connecting different stakeholders and decision-makers is integrated into the ecological network, mapping different types of interactions, including information sharing, regulating, controlling, and resource sharing. The final outcome provides a clear understanding of the system structure and the mutual interactions between the natural and socio-economic systems in an integrated manner. This understanding enables the depiction of a Causal Loop Diagram (Figure 5) and the drawing of several conclusions about barriers to ES production and provision resulting from misalignment between social and ecological networks (Figure 6).

Stakeholder	Main sector(s)	Main Role(s)	Interview format
Spanish Geological Survey (IGME)	Water	Research	Online
Guadalquivir river basin authority (CHG)	Water	Water resources management	Online
Farmers Union – ASAJA	Food production	Providing technical support to farmers	In person
Doñana Nature	Ecosystem	SME organising touristic trips in the Doñana protected area	In person
Farmers	Food production	Rice cultivation	In person
WWF	Ecosystem	Environmental NGO, with a specific working program in Doñana	In person
Optiriego	Food production	SME Providing technical support to farmers in irrigation optimisation	In person

<sup>2</sup>Guidelines were produced and are available upon request

Water policy expert	Water	Expert in groundwater management and protection	In person
Regional Authority – Agriculture Dept.	Food production	Land use policy and agriculture management	In person

Figure 4. List of stakeholders interviewed in the Doñana pilot. Source: D4.1. "Report on PSM and SNA. Identification of DOs, NRQs and NIs"

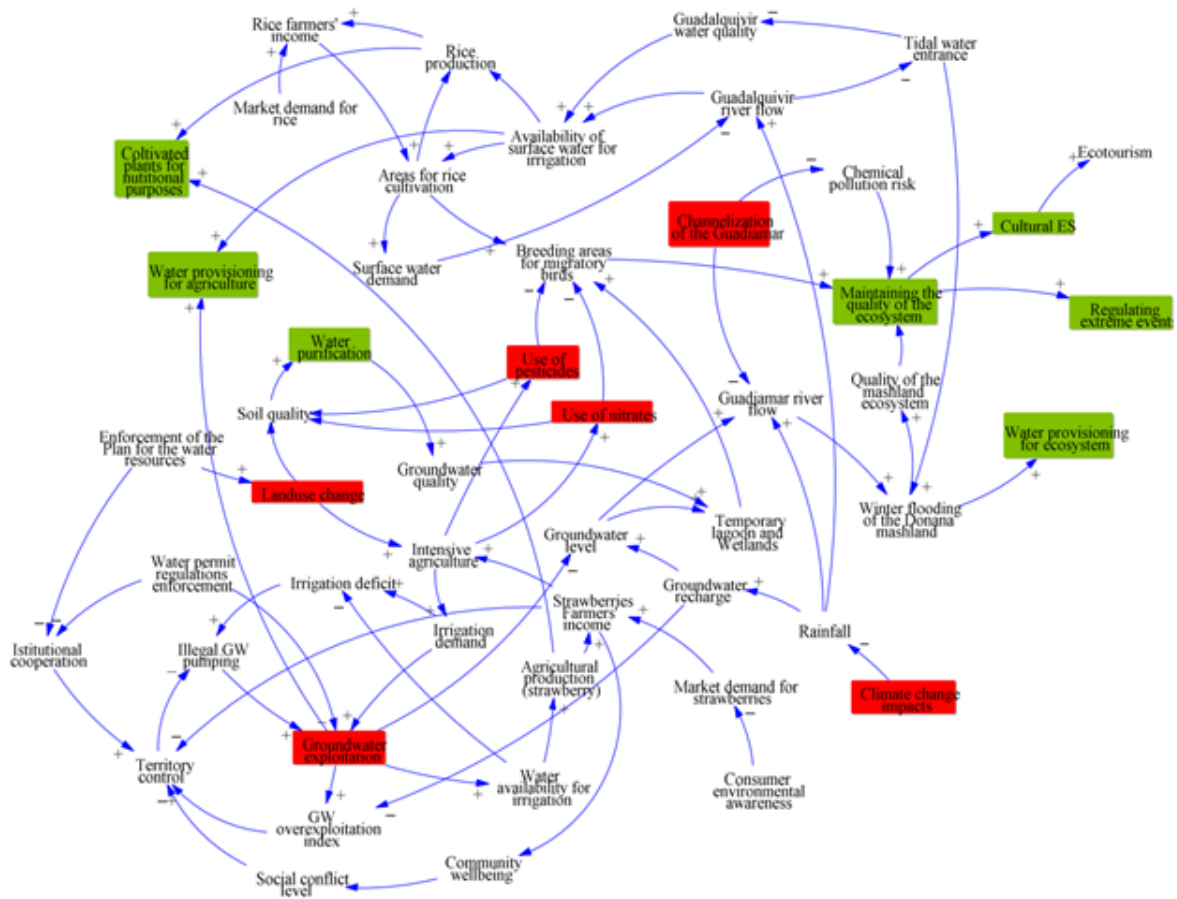


Figure 5. CLD developed for the Doñana pilot. Source: D4.1.

Detected barrier	Involved actors	Impact on ESs
Lack of coordination	Regional Authority and CHG	The lack of a coordinating actor affects the conflicts for the implementation of the land-use management plan and the groundwater protection policy.
Lack of awareness-raising campaign and technical support	CHG and farmers	Farmers perceive the CHG simply as a controlling entity. This negatively affects the effectiveness of a negotiation process.

Lack of farmers' social capital	Community of farmers, market agents	The lack of cooperation within the community of farmers is increasing the competition for food production, which is detrimental to the GW protection.
Limited role of the National Park management authority	National Park management authority, farmers	The limited interaction between this agent and the farmers is reducing the effectiveness of the awareness raising campaigns.
Lack of WUA formation	Farmers, WUA, CHG	The lack of farmers' social capital affects the process for the formation of WUAs, which are supposed to play a key role in supporting CHG in the control of the territory.

Figure 6. List of the main barriers to ES production in the Doñana pilot. Source: D4.1.

## Step 2: Where does the power lie?

### 2a: Identify Barriers and Opportunities for Stakeholders to adopt a Nexus Approach

This is one of the central steps in the Political Economy Analysis. In LENSES, we have decided to start with **semi-structured interviews** with stakeholders although a participatory exercise is also being designed to be implemented as part of a workshop or a similar participatory event. The interviews enable to collect the key information from a sectoral point of view whereas the participatory process is a follow-up process focusing on validating these findings from a more systemic approach. The outcome of this sub-step will be key for preparing the materials for workshops 2 and 3, as well as the direct input for the analysis of values in the next "social layer" which corresponds to step 3a of the toolkit.

In this section we describe the objectives of the semi-structured interview. The full script can be found in the Annex.

This set of questions is divided into five sections:

1. **Sectoral challenges and cross-sectoral linkages.** *This set of questions aims to identify what are the most pressing challenges from a sectoral point of view and their possible connections with third sectors from the perspective of the interviewees. The challenges identified will be compared against the results from the CLD analyses.*
2. **Causes and barriers responsible for cross-sectoral challenges.** *In this section we want to gain a more detailed understanding of the main challenges identified above related to water, environment and agriculture. Specifically, we want to understand what are the underlying causes of these challenges (physical, cultural, governance-related, economic, legal, etc.), which prevent solving the problem at the moment (e.g. knowledge barriers, lack of regulatory framework, etc.).*
3. **"Health-check" of nexus governance:** *This set of questions aims to delve into the governance of the nexus and assess how its different dimensions (regulatory framework, policies, inter-institutional coordination and economic policy) are conducive or not to integrated management, and whether there are good practices to highlight.*

4. **Economic policy and the values that drive decision-making.** *This set of questions aims to identify what are the dominant value frameworks when addressing challenges that have a cross-sectoral component related to water-energy-food. This lies in the normative elements (implicit) in political economy considerations that influence the problems at stake and their possible solutions.*
5. **Recommendations and Opportunities.** *This question aims to identify what are the windows of opportunities and potential solutions (i.e. ways to overcome these barriers and address the challenges) and/or areas where efforts should be focused to improve the management of the nexus.*

## 2b: Map the interrelations at the system level

This step employs the methodology proposed in **D3.1 "Report on the adequacy of pilot governance structure for Nexus"** and implemented in Task 3.1 "Institutional and governance structure analysis". The methodology follows a system-based approach to map the complex interactions in the Socio-ecological and technological (SET) system (Figure 7), starting from the CLD to then apply Graph Theory measures to detect and analyse vulnerable points in the system. These "nodes" are elements that, due to their position in the system, could hamper the ESs production and provision. The network analysis is done by transforming the SET network into a meta-network, looking at measures such as individual congruence, resource-based access index, and agent resource needs congruence. The results of this analysis will be used in LENSES to support the development of a revisited version of the stakeholder engagement strategy as well as the development of policy scenarios.

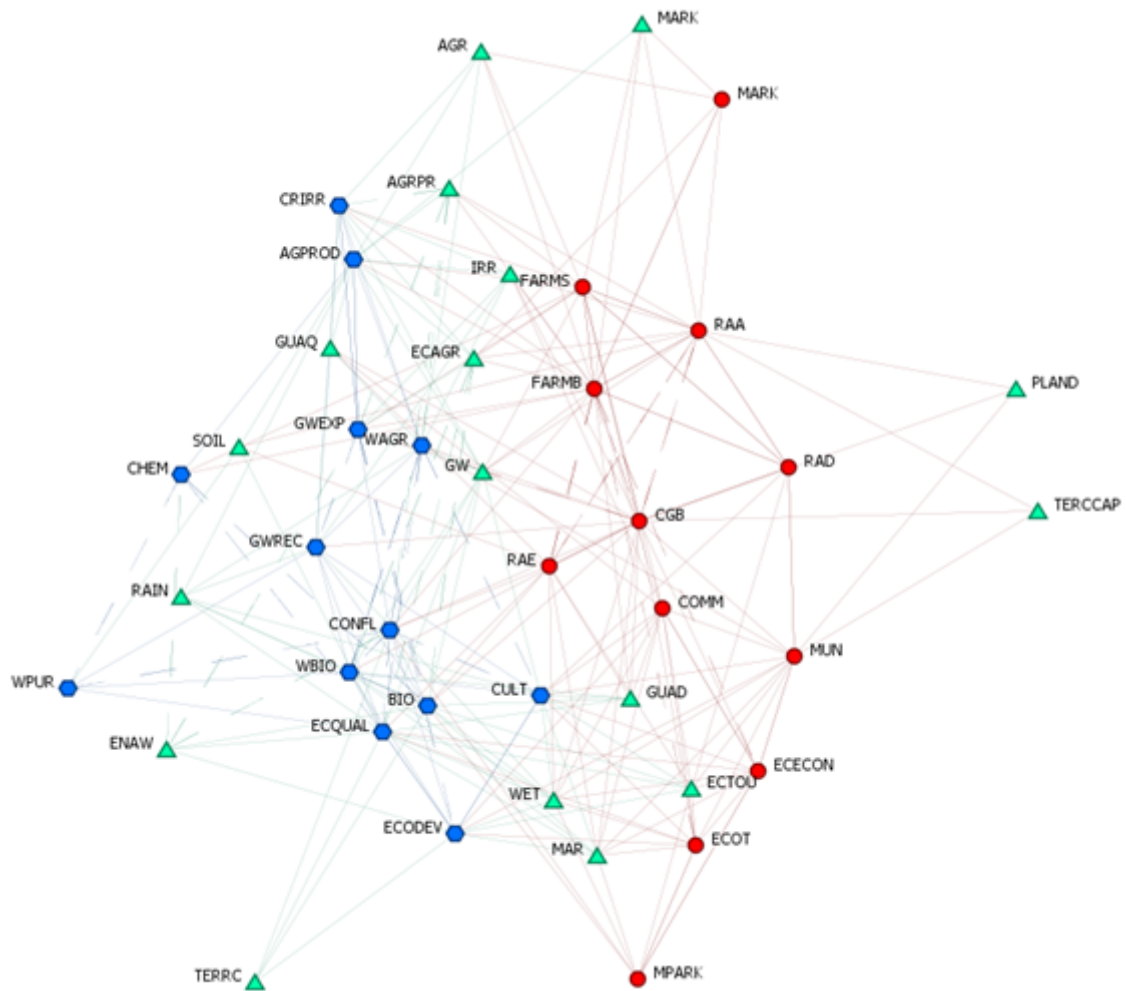


Figure 7. SET network for the Doñana case study. The dotted lines represent negative links. Source: D3.1

## Step 3: Which ways of thinking shape the present-day system?

### Step 3a: Identify current needs and values of stakeholders

Here we propose a **values assessment methodology** that aims to evaluate the multiple values of nature that are important to different stakeholders and decision-makers. It involves identifying the diverse values of nature, and grouping them into several categories to allow for the assessment on how these are distributed across different actors. It aims to explore how values of nature relate to trade-offs and synergies that emerge from political and economic choices. Its implementation through a series of semi-structured interviews and focus groups is expected to provide relevant information that can make the following steps of the analysis, especially the development of the transition roadmaps, more realistic and therefore, feasible.

Here we understand “**value**” as a dynamic process, emerging from the cognitive action of deliberately choosing between alternatives (Müller-Hansen et al., 2017). This is because a value is not a certain property of the object or an estimated projection of the subject on the object, but rather, the value is the result of the action of valuing (Echevarría, 2002). Also, although we think of ourselves in terms of “rational animals”, the fact is that the exercise of our rationality is subject to severe biases and constraints of various kinds. Therefore, we agree that human choices are not solely based on calculations and/or feelings. Instead, they are the result of complex emerging processes of our consciousness which are linked to value systems and the context in which agents become subjects of valuing.

We adopted the values of nature categorisation from IPBES (2022) but keeping our vision as wide as possible. For example, we do not necessarily reduce “instrumental” values under “utilitarianism”. Anthropocentric worldviews are not just the manifestation of an ever-expansive, market-based, economic drive of human beings; because there are means to a desired end often associated with the notion of “ecosystem services”, which are instrumental. As it is recognised by IPBES, transforming ecosystems is essential for the provision of food, water, medicine, and other resources that are essential for human survival and well-being. Additionally, ecosystem services such as carbon sequestration, pollination, and water purification, are crucial for maintaining a healthy environment that can support human livelihoods. Instrumental values will be key in the upcoming decades to speed up climate change adaptation, for example, in the large-scale adoption of nature-based-solutions, if guided from an ecocentric worldview. Similarly, “intrinsic values” of nature are not exhausted in the idea of values independent of people and valuers, as there is always an agent which values and gives meaningfulness to human-nature interactions. In that aspect, the framework remarks an aspect that has been reported in the literature as “lacking” in stakeholder engagement processes, and that is the need to incorporate equity and environmental justice dimensions (see Caniglia et al., 2021 and York and Yazar, 2022, among others), by including minorities’ points of view and local knowledge, and integrating different types of data and information from various sources.

Therefore, we propose an axiology of socioecological systems which cannot claim to be deterministic, nor attempts to prioritise one value or subsystem of values over others. Rather, it is committed to pluralism. Hence, here we consider as *non-exhausting categories* of values the following:

- **Worldviews:** the way through which people conceive and interact with the world. They range from Anthropocentric to Bio/ecocentric, Pluricentric, or Cosmocentric.
- **Knowledge systems:** bodies of knowledge, practices and beliefs. They can be academic, ideological, or local.
- **Broad values:** these are guiding principles and life goals; such as security, prosperity, livelihood, belonging, health, stewardship, responsibility, oneness, or harmony with nature.
- **Specific values:** judgements regarding the importance of nature in particular situations; which relate to nature as means to an end (nature as resource/asset, satisfaction of needs and preferences, usefulness to people), as ends in-and-of themselves (the agency of other-than-humans, the inherent worth of nature), as well as important for desirable, meaningful, and reciprocal socio-natural relationships.

In order to understand how different worldviews, knowledge systems, broad and specific values crystallise in each individuals’ behaviour, we have to keep in mind that we are trying to account for an ambiguous dimension of reality. In the values sphere, we have to deal with evaluation processes, which are not free of value conflicts. The evaluating agent is plural: that is, it is made up of several agents, among whom there may be conflicts of values, but also shared (or rather, *shareable*) values. This does not mean that all values have the same importance. The subsystems of values relevant to certain activities and not others can differ, as

well as the order of priorities, weightings and minimum levels of satisfaction of the various evaluators. To capture the order in which values are considered and the magnitude of their peaks or thresholds is of great importance in evaluation processes.

These considerations aim at keeping an open mind, which we consider to be crucial when approaching stakeholders. There are several valuation method families. An integrated assessment of nature-based, statement-based and behaviour-based valuations could be potentially useful depending on the pilots' resources and goals. Here we remain at the level of **qualitative analysis of narratives (statement-based)**, aiming to detect the categories described above. This analysis will take into account priorities, weightings and minimum levels of satisfaction. Value indicators will be selected as means to capture stakeholders' divergent values (e.g. tonnes of fish vs. number of fish species) allowing for comparison and linking with identified challenges.

Because values are plural and subject to changes, the existence of a deliberative process is essential, which does not exclude the possibility of opposing actions; as it is common in policy making. The subsequent steps of scenarios and roadmap co-development, build upon this idea. The LAAs are intended to support discussions among stakeholders with different worldviews. Providing stakeholders with scientific evidence and designing participatory activities that consider the values underpinning the core political and economic conflicts, could greatly improve stakeholder engagement processes. The vision is that more honest, realistic and less unfruitful dialogues could disentangle some of the deep-rooted "business as usual" behaviours of stakeholders.

The **steps** to be implemented in Doñana pilot are as follows:

- **Reinforce stakeholder interaction with those key agents identified in step 2b.** The Social Network analysis allowed for the identification of key stakeholders which hamper the functioning of ecosystem services by acting in isolation and/or in competition with each other. These stakeholders will be framed as "powerful" and will be approached again as means to better understand the underpinning issues that sustain the situation by conducting a round of semi-structured interviews.
- **Revisit the list of stakeholders and include any new stakeholders as needed, especially accounting for those who are misrepresented.** The aim will be to address the lack of engagement in earlier stages of the process of groups such as "the civil society" or "the youth", "the local community", "the migrants", and so on. This list of "less powerful" stakeholders will be then used to plan several engagement activities, including semi-structured interviews and focus groups.
- **Develop a stakeholder engagement strategy for the upcoming months.** Aimed at conducting a minimum of 6 interviews and 2 focus groups with powerful and less-powerful stakeholders, using the guidelines, and to align the PEA with the LAA process.
- **Analysis of the results to feed the LAA process.** An analysis of the narratives will be conducted as means to improve the materials to prepare workshop 2 (scenario co-development) and, especially, workshop 3 (roadmap co-development).

## Step 3b Quantify the outcomes resulting from current needs and values

This step will build upon the results from the upcoming deliverable **D4.2 "Framework from PSDM implementation in LENSES case studies"** conducted by Task 4.2 "Participatory System Dynamics Modelling". This task will support shifting from the individual sectoral perspectives identified for different WEF Nexus

issues to the definition of a “**System picture**”. PSDM exercises will be run in all pilots and LAAs environments, to build a comprehensive view of the WEF systems under investigation. This will support the long-term involvement of stakeholders in LAAs and a cross-sectoral knowledge fertilisation process. PSDM will benefit from the integration of highly specific models and data (e.g. hydrological models, climate data, environmental economics, etc.) provided by the LENSES Observatory (WP7) and different kinds of knowledge collected through LAAs (WP2).

## Step 4: What is the current situation?

### Step 4a: Map the current policy frames and binding commitments in the three domains

This step aims to assess whether, and if so to what extent, the nexus approach fits into both existing legal instruments. It will entail a comprehensive and systematic investigation on the **international legal and policy frameworks** to reflect nexus interactions. The analysis will focus on international conventions, regional frameworks such as the EU Water Framework Directive, The Farm2Fork Strategy, and the Green Deal, as well as specific arrangements in place in the context of each pilot case. The results of this task will be twofold. The first part will be a summary table describing the current legal and policy framework to address WEF Nexus. This table will be a direct input for the participatory exercise of prioritisation of policy goals and targets under different scenarios. The second part will reflect if policies capture the key specificity of the nexus approach (e.g. the need for intersectoral, cross-scale, and stakeholder integration).

### Step 4b: Map the gap in the three sectors

This step will be conducted during the second workshop using participatory scenario planning exercise. Detailed guidelines can be found on **D2.4 “Report on LENSES strategic roadmaps for Nexus future”**. This step focuses on the development of the **Business-as-usual/ normative vision**. Participants will be provided with materials (map summarising the main challenges identified in workshop 1, factsheets of climate projections and sectoral impacts, and a written summary of the WEF challenges) and divided into smaller groups. Stakeholders then can start explaining the history of the pilot area concerning the WEF nexus issues. The objective of this step is to identify the drivers of change with the highest influence. Once we know the main problems and objectives of concern of the participants on the WEF nexus, the next step is to define a the “business as usual”, i.e. *the most probable future based on the current knowledge (what would the future look like if we do not change our current behaviour?)*; an agreement between participants in this future that follows the current trends. Participants need to define the status of the main problems and objectives in the future, how they think they will be, and the reason behind it. The outcome will be a short narrative indicating trends in: resource use and availability, economic activities and impacts, and pressures (existing and new), as well as values underpinning the way of stakeholders’ thinking.



## Step 5: Where do we go now?

### Step 5a: Develop the green vision and the pathways

This step will be conducted during the second and third workshops using participatory scenario planning exercise. Detailed guidelines can be found on **D2.4 “Report on LENSES strategic roadmaps for Nexus future”**. This step focuses on the development of the **green vision and pathways**. In the first exercise, participants are asked to define their desired future state for a pilot area by setting specific objectives with a temporal frame. These objectives will be the outcome of the previous step 4a “mapping of current policy frames and binding commitments” and can be related to groundwater levels, agricultural production, pollution reduction, etc. The facilitator can write these objectives on a big paper and ask for the participants' preferred state in the temporal frame, seeking for a quantitative value/ indicator. Also, participants could be provided with a long list of goals and be asked to select 10 to be achieved by 2050, defining specific targets to materialise these goals and providing a short narrative. The participants are encouraged to discuss and seek consensus, and in case of disagreement, the two most different desired states can be defined. After reaching an agreement, each group should present their decision to the others, seeking a common value for each objective.

To start building the connections between the current situation and the vision, it is recommended to design a specific activity where the workshop participants are asked to **identify potential actions** that may favour the achievement of the desired vision for a specific domain. Based on the desired future state, each group works under a different exploratory scenario, proposing political and private initiatives along a timeline to achieve the objectives. The objective of this exercise is to define a set of interventions that can be used to create a roadmap of interventions over time. Materials that could be provided for stakeholders include factsheets of solutions, both nature-based and non-nature-based, as well as climate change and sectorial projections. Together with the prioritisation of targets done in the previous exercise, participants should be encouraged to discuss trade-offs and synergies among proposed solutions, as well as barriers and opportunities, both formal and informal, that could emerge.

### Step 5b: Analyse trade-offs and Synergies in Scenarios, i.e. consequences of the chosen pathways

This step will build upon the results from the upcoming deliverable **D4.4 “Evidence from scenario analysis and policy recommendations”** conducted by Task 4.3 “PSDM for Scenario Analysis”. Based on the inputs from previous steps, qualitative and quantitative PSDM tools, including FCMs, CLDs, and stock and flow models, will be used for scenario analysis to explore a wide range of conditions and measures. The development of transformative scenarios for resilience building through the integration of explorative models and participatory scenarios development will be the foundation of the co-creation process in the LAA. The cooperation with WP2 is crucial for this aim. Explorative models will be used to account for the uncertainty associated with complex WEF Nexus systems, helping to identify collective solutions and enhance evidence-based “multi-objective policy design” to deliver the desired objectives and specific regional or national goals.

Also, the results from the upcoming deliverable **D3.3 “Guidelines for Transformative Nexus Policy Scenarios”** conducted by Task 3.3 “Policy scenarios” could be useful to this aim in which the barriers

hampering the cooperation and the key elements for enabling policy changes will be discussed with stakeholders.

## Step 6: What is next?

### Step 6a: Analyse potential leverage points and barriers

The outcomes up to this point allow for a systemic understanding of what is the nature of the system. Also, we have obtained a desired image of the future and a roadmap to navigate future changes. The analysis of such process will allow for the understanding of the dynamics of change, the nature of relationships between key actors, as well as the key factors underpinning different types of behaviour (such as legislation and policy, country characteristics, ways of working, and ways of thinking). Identifying key decision-makers and understanding the factors that influence their decisions can also shed light on potential areas for intervention. Additionally, it is important to explore whether there are any existing or potential policy coalitions that could be leveraged to bring about change. Power relationships can play a significant role in shaping actors' ability to bring about change, and it is important to consider how these relationships may impact potential interventions. Finally, to sharpen tactics and achieve access to decision making, it is crucial to identify what needs to change, who has the power to bring about change, what tactics can be used most effectively to influence the change process, who are the main winners and losers from change, who is likely to oppose change, and what are the risks of different tactics.

### Step 6b: Quantify costs and benefits of meeting policy targets

As a last step, a cost-benefit analysis could be used to assess the costs and benefits of policy interventions. In order to evaluate the feasibility proposed actions, these can be compared by their expected benefits, and who would benefit, as well as the costs over a given period of time. The outcome could assist stakeholders to determine whether a project or policy is worth investing in based on whether its benefits outweigh its costs.

## 3. Conclusions and next steps

In conclusion, the Political and Economic Analysis (PEA) toolkit developed in the context of the LENSES project provides a structured approach to analysing the complex political and economic contexts in which nexus-related interventions are developed and implemented. By accounting for social and ecological systemic dimensions and value frames, the toolkit helps to identify key barriers and opportunities for change, and to develop recommendations that can contribute to the design of more effective strategies. While the PEA toolkit provides a structured approach for rapid analysis, it should not be viewed as an independent planning exercise, as other factors such as capacity, experience, or funding opportunities will shape the direction taken. Furthermore, the PEA analysis is an ambitious exercise that requires inputs from other LENSES activities in WP2, WP3, and WP4, as well as engagement with key stakeholders.

Each of the steps provides a set of core activities and discussion points to guide the analysis, and to the extent possible, it includes participatory exercises that help include different worldviews and knowledge systems.

The Doñana pilot study, which served as a prototype for the PEA toolkit, demonstrated the usefulness of the methodology in detecting the complex web of interactions shaping decision-making, formal and informal, taking place in Nexus governance. So far, it has allowed the identification of key agents and resources, and the next steps to tackle deep-rooted barriers will be analysed in the upcoming months, following participatory methods. In Doñana pilot, the development of an ambitious stakeholder engagement strategy will enable the implementation. It will be aimed at reinforcing the existing relationships with key stakeholders but also building new ones which were previously misrepresented. We refer to a big number of individuals, which are generally grouped as “the civil society”, “the migrants”, “the youth”, “the consumers”, even “the farmers”. This will allow to account better for reality in the pilot region (what needs to be prioritized). It will also aim at developing diplomatic relationships with the stakeholders which are powerful and isolated in the network, such as the Regional Water Authority. This is expected to allow for the understanding how change could happen, what are the key “agents of change,” and the resources to be committed in order to enable the expected changes when planning the last workshops.

Looking forward, the PEA analysis has the potential to become a relevant input for policy modelling by contributing to the conceptual basis of including values into policy planning. The LENSES project can be seen as a stepping stone towards a new approach to policy planning, one that recognises the complex interactions between different dimensions of human life and could increase the importance of stakeholder engagement in the design of effective interventions.

In summary, the PEA toolkit is a valuable contribution to nexus-related research and practice, providing a structured approach for analysing the complex political and economic contexts in which interventions are developed and implemented.

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# Annex

## Interview Script "Barriers and Opportunities for the Adoption of a Water-Environment-Agriculture Nexus Approach in LENSES pilots".

### Introduction (5')

*Purpose: Brief introduction of the project (objective, duration, funder, partners), the purpose of the interviews, how these contents will be used and treated (data protection) and what is our role as interviewers in this process.*

- Name of interviewers and interviewees
- Brief description of the project: What is LENSES about?
- Remember that this should be an open space and that opinions and views will be kept anonymous to allow the interviewee to feel comfortable.
  - What will be done with the different interviews and what should be the next steps (validation of narratives)?
- Little rules for the interview:
  - Keep answers as concise as possible.
  - Please notify the interviewer if any questions are unclear.
  - At the end of the interview there will be a few minutes for additional comments and suggestions.
- Permission to record and manage personal data in accordance with EU data protection regulations (including anonymisation of individual responses).

### Section 1: Sectoral challenges and cross-sectoral linkages (15')

*Purpose: This set of questions aims to identify what are the most pressing challenges from a sectoral point of view and their possible connections with third sectors from the perspective of the interviewees.*

1. From your sectoral perspective, what are your biggest challenges facing your sector?
2. With which sectors is your sector most interrelated?
3. What are the challenges posed by these cross-sectoral relationships, and why?
4. How is climate change and the increasing context of scarcity straining or changing these cross-sectoral relationships?

### Section 2: Causes and barriers responsible for cross-sectoral challenges (10')

*Purpose: In this section we want to gain a more detailed understanding of the main challenges identified above related to water, energy and agriculture. Specifically, we want to understand what are the underlying causes of these challenges (physical, cultural, governance-related, economic, legal, etc.), which prevents solving the problem at the moment (e.g. knowledge barriers, lack of regulatory framework, etc.).*

1. What are the causes preventing progress in solving the challenges we have previously identified?
2. What kind of barriers prevent the lack of planning and policy development in an integrated way? What barriers exist to foster institutional cooperation?

### **Section 3: "Health-check" of nexus governance (20')**

*Purpose: this set of questions aims to delve into the governance of the nexus and assess how its different dimensions (regulatory framework, policies, inter-institutional coordination and economic policy) are conducive or not to integrated management, and whether there are good practices to highlight.*

1. If we look at the governance of the nexus, do you think there are regulations and policies ambitious enough to address the intersectionality between water-energy-agriculture?
2. If yes, are they being implemented in practice, and why?
3. If not, what kind of regulations or policies are missing?
4. Can you give us some concrete examples of policies in Spain that have an adequate approach to address the nexus?
5. What is your opinion on the institutional arrangement and coordination mechanisms in place to address the above-mentioned cross-sectoral challenges? Where is there more cooperation? Where is there less?
6. Do you know of good practices (policies, cooperation between institutions, etc.) worth sharing that could be scaled up in Spain?

### **Section 4: Economic policy and the values that drive decision-making (15')**

*Purpose: This set of questions aims to identify what are the dominant value frameworks when addressing challenges that have a cross-sectoral component related to water-energy-food. This lies in the normative elements (implicit) in political economy considerations that influence the problems at stake and their possible solutions.*

1. What values do you think are imposed on decision-making in practice, in order of importance?
2. In a crisis situation, do you think these values change? If so, in what direction and where?
3. To understand the power positions of each sector (water, energy, agriculture, environment): could you reflect on the power that each sector has (where it is) and why?

### **Section 5: Recommendations and Opportunities (10')**

*Purpose: this question aims to identify what are the windows of opportunities and potential solutions (i.e. ways to overcome these barriers and address the challenges) and/or areas where efforts should be focused to improve the management of the nexus.*

1. What opportunities do you see in the short and medium term to address the challenges you have mentioned?
2. What recommendations would you give to address these challenges?



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