

LEarning and action alliances for NexuS Environments
in an uncertain future

LENSES

WP2

D2.3.2 LENSES learning platform (update)

Estrella López (ECOADAPTA)

30/04/2023

Project coordinator

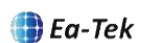


Project partners



Project Website

www.lenses-prima.eu



This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]



LENSES learning platform (update)



This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

Project no. 2041

Project acronym: LENSES

Project title: Learning and action alliances for NEXUS environments in an uncertain future

Call: PRIMA call Section 1 – Nexus 2020, Topic 1.4.1-2020 (IA).

Start date of project: 01.05.2021

Duration: 36 months

Deliverable title: D2.3– LENSES learning platform

Due date of deliverable: April 2023

Project Coordinator: Stefano Fabiani, Council for Agricultural Research and Economics (CREA)

Organisation name of lead contractor for this deliverable: Council for Agricultural Research and Economics (CREA) (*COORDINATOR*)

Lead Authors

Email estrellalm@ecoadapta.org

Internal reviewer Fabrizio Pucci (CREA)

Dissemination level		
PU	Public	PU
CO	Confidential, restricted under conditions set out in Model Grant Agreement	
CI	Classified, information as referred to in Commission Decision 2001/844/EC	

History			
Version	Date	Reason	Revised by
01	18/04/2023	Draft v1	Estrella López (ECOADAPTA)
02	30/04/2023	Update	Fabrizio Pucci (CREA)

Executive summary

The document provides the current status of the platform development programme that has been implemented to enable pilot teams to populate and manage local platforms.

As reported in the initial design document, this is a tool designed to support engagement activities within local Learning and Action Alliances (LAAs).

The platform has been updated using the data and feedback received to continuously improve the content and functionality of the platform and update it according to stakeholder needs and technology.

The adoption of successive steps can have a significant positive impact on the effectiveness of the platform in achieving learning objectives. Continuous improvement can help ensure that the platform remains relevant and effective in meeting changing stakeholder needs.

The implementation of some tools can improve the platform's ability to provide personalised learning experiences, resulting in better learning outcomes.

Table of Contents

1. Introduction.....	06
1.1 Aim	06
1.2 Conceptual basis.....	06
2. Update on the contents of the platform.....	07
2.1 Deir Alla (Jordan)	07
2.2 Hula Valley (Israel).....	12
2.3 Koiliaris (Greece).....	13
2.4 Pinios (Greece).....	15
2.5 Menemen plain (Turkey).....	19
2.6 Tarquinia (Italy)	27
2.7 Doñana (Spain)	27
3. Conclusion and next steps	33

List of figures

Figure 1. Lenses Window homepage.....	08
Figure 2. Lenses Window Deir Alla (JO) pilot overview	10
Figure 3 Soil Chemical Analysis of 2022 Deir Alla (JO) pilot	11
Figure 4. Lenses Window Hula Valley (IL) pilot overview.....	12
Figure 5. Lenses Window Koiliaris (GR) pilot overview	13
Figure 6. Lenses Window Koiliaris (GR) pilot Cost-benefit Analysis	14
Figure 7. Lenses Window Pinios (GR) pilot overview	13
Figure 8. Lenses Window Pinios (GR) pilot stakeholders	16
Figure 9. Lenses Window Pinios (GR) pilot goals.....	17
Figure 10. Lenses Window Gediz Basin (TR) pilot overview.....	19
Figure 11. Lenses Window Gediz Basin (TR) pilot Project pilot Alan Tanitimi	20
Figure 12. Lenses Window <i>genel sorunlari</i>	21
Figure 13. Lenses Window Gediz Basin (TR) pilot	22
Figure 14. Lenses Window Gediz Basin (TR) pilot	23
Figure 15. Lenses Window Gediz Basin (TR) pilot	24
Figure 16. Lenses Window Tarquinia (IT) pilot overview	27
Figure 17. Lenses Window Donana(ES) pilot overview	27

1. Introduction

1.1 Aim

The present deliverable reports on the current state of the **LENSES learning platform, "LENSES Window"**¹, as part of **Task 2.2 "LAAs in action"**. The platform was launched by month 8, and since then, it has been continuously updated and improved/adapted based on the feedback of LAA leaders. The platform is aimed at being the central tool to facilitate the activity of different LAAs and to promote the continuity of the LAA communities. The deliverable first introduces the rationale behind using a learning platform to foster LAA activities. Then, it focuses on the progress done since its launch and continuous updates based on the feedback of LAA leaders and relevant WPs, such as 7,8 and 9. The deliverable finalises with the planning of the next activities needed to perform in order to engage with stakeholders.

The **previous version of this deliverable** reported the initial design and development of the LENSES learning platform. The document provided the initial design for the platform, which served as a basis for co-creation with pilot leaders of the particular design of the sections used for communication and discussion in each of the LENSES pilots.

1.2 Conceptual basis

The LENSES online learning LAA platform, "LENSES Window", is a virtual platform conceptualised to facilitate **Learning and Action Alliances (LAAs) in the Water-Energy-Food Nexus (WEF)**. Essentially, the online learning LAA platform supports collaborative learning and action among stakeholders working to address the challenges of the WEF Nexus.

The LENSES approach operationalizes **stakeholder participation** through LAAs. These are discussion-and-action groups consisting of a broad selection of stakeholders who convene through a structured series of workshops, participatory activities, and meetings, with the aim of creating communities in which learning from project activities and outputs directly translates into real action. The LAAs are a dynamic learning process and a living collective body that is expected to evolve through trust building among partners and common achievements.

The approach of the LAAs is to **embed scientific knowledge and tools** in the design, incorporating local knowledge and practices to ensure uptake and usefulness of the results. Adding climate change to the equation makes the challenges more transversal and exacerbates trade-offs, making dialogue and coordination more critical. Importantly, the online learning LAA platform addresses the **lack of communication, coordination, and dialogue among stakeholders** in the WEF Nexus, which has been

¹ <http://www.lenseswindow.eu/?redirect=0>

identified as a core challenge for effective WEF Nexus management. By providing a virtual and safe space for dialogue with all relevant stakeholders, the platform enables stakeholders to learn from project activities and outputs and translate them into real action. This can help to overcome the silo thinking and acting that has been identified as a key barrier to effective WEF Nexus management. By promoting collaborative learning and action, the online learning LAA platform can contribute to the development of more resilient and sustainable solutions to the complex challenges of the WEF Nexus. The participatory approach of LENSES focuses on **social learning** as a means towards a convergence of goals, criteria, and knowledge of various actors. This, in turn, leads to building relationships of trust and respect and a change in behaviours arising from mutual understanding of the issues at stake.

The LENSES LAA platform will serve as a core tool to facilitate the regular interaction of the stakeholders involved in the three-level of LENSES LAAs. Additionally, it will help other stakeholders incorporate themselves into the discussions and activities with adequate knowledge of the interactions previously occurred. LENSES Window is a **social and professional network for WEF stakeholders** to engage and act in accordance with and achieve the implementation of LAA activities. It aims to enhance institutional and governance capacity for Nexus-doing and serves as a window of successful knowledge and action examples on Nexus resilient action. It has the capacity to grow and maintain operability and interconnection.

2. Update on the contents of the platform

The design of the LAA platform is work in progress in close collaboration with the pilot leaders, and WP9 on “dissemination and communication strategies”. The platform will be regularly updated, which will be reported in updated versions of this deliverable.

An important point was to favour the co-creation of the LAA platform. With this aim, the initial design was shared and discussed with the group of pilot leaders, and a specific participatory activity was suggested to be included as part of the Kick-Off LAA meeting in each pilot to collect feedback and impressions from local stakeholders. Based on this process, a mock-up for one pilot was produced for Doñana pilot (Spain), and used as a basis for a second round of discussion and feedback collection.

As a next step, a complete initial version of the platform was published online in June 2022. As task leader, ECOADAPTA organised a series of bilateral meetings with each pilot with the twofold aim of reaching a consensus about the goals of the LAA platform and identifying specific features and characteristics for the pages of the LENSES pilots, as well as practical tools to populate the website. Each pilot designated a person from their team that would be in charge of updating the contents of their pilot section. It was collectively agreed that each pilot would write their sections in their local language, as they are intended to be easily accessible to a broad group of stakeholders with different knowledge backgrounds.

Whether these pages are password protected was decided by each pilot leader. Population of the platform was agreed to be carried out by the designated person from each pilot team. Some pilot teams reported the platform as not user friendly and asked for the technical assistance of ECOADAPTA in order to populate their sections. It is expected that in the future pilots will count on the assistance of AGRISAT and CREA as well. Another request was to connect it to the website and the observatory, and use the same visual identity, which was successfully done (Figure 1).

Figure 1. Lenses Window homepage

Although pilots were free to customise their sections, after the bilateral meetings they were suggested to complete their module using the following guidelines:

FIRST PILOT ASSIGNMENT

Regarding structure & technical training:

- Choose your structure, how many and what sections? Make a simple bullet list
- Choose 3-5 types of moodle activities or resources you think that would fit best to your sections. Do not worry about the content of the sections or resources yet, as we will start adding information next training. As there are many resources and tools available, we will also recommend you to just focus now on the core content. We will make it more complete as we go. Likewise, if you'd like to

add information in a way different to those available in moodle, let us know directly, and we will try to see how to sort it out.

Regarding content & conceptual training:

- *What are the main objectives of your pilot area?*
- *What are the key nexus challenges of your pilot area?*
- *For both questions, are you able to explain your main objectives and challenges in a simple, direct manner? Give it a go and we will review your elevator pitch in the next training.*

The following subsection presents the progress broke down by pilot area:

2.1 Deir Alla (Jordan)


the LENSES project
Deir Alla, Jordan

Inicio
Area personal
Eventos
Mis Cursos
Salir curso
Official site



Cursos > Deir Alla


مقدمة
Colapsar todo

يختار البرنامج التجريبي استخدام موارد المياه غير التقليدية ، مثل مياه الصرف الصحي والمياه المالحة ، كحل مبتكر لمواجهة تحديات إنتاج الغذاء المتوقعة بالترابط بعد ندرة موارد المياه العذبة ، وارتفاع الطلب على المياه في الزراعة ، والآثار العكسية لتغير المناخ بعضاً من التحديات الرئيسية التي يهدف المشروع التجريبي إلى معالجتها



الهدف الرئيسي من إجراء هذه الدراسة هو تقييم زراعة سموم المعاصر الذي يشملته كميات كبيرة من مياه الري. سيكون هذا بالمشاركة مع استخدام الدورات الزراعية لكل من المعامل العفوية والقوية من حيث توفير المياه والجوانب الاقتصادية والبيئية.



تمتع السيلاج وتقييم
محاصيل النظر:

ملحوظات	الأحوال الجوية (المطر ودرجة الحرارة °C)	مرحلة دورة حياة المحصول	المحاصيل
	خمسة وأربعون	النمو والحصاد وما إلى ذلك.	قائمة المحاصيل الغذائية / العلفية
التاريخ الأول في الزراعة	تتأثر درجة الحرارة من:	أكثر من حصاد العاد كالمعتاد	الدسم

Figure 2. Lenses Window Deir Alla pilot (JO) overview

▼ **النشاط # 2 التحليل**

وبخاصة الأسمدة (ADF) والبيانات المتعلقة بالخصوبة (NDF) بشأن التحليل القريب ، الرطوبة ، والرمد ، والفوسفور الخام ، والبيانات المتعلقة بالخصوبة
تم جمع البيانات من المشروع التجريبي قياس نسبة الحبوب المنتجة لكل قطعة بحدائق تقييم القيمة الاقتصادية ، تم صنع نسب مختلفة من المبيدات المتداول في برامج بلاستيكية تقسيم محصول السمك
(Sg) على النحو التالي: 0 : 100 + 75:25 + 50:50 + 25:75 + 100 : 0 بالمائة للمحاصيل الصيفية ، تم عمل 5 أنواع من المبيدات على أساس نسبة الرقة والقيمة

Soil Chemical Analysis: End of 2022

Lab No.	Location	Depth	Extract		ppm		mg/L						Total cations
			pH	EC(dS/m)	P	K	Ca	Mg	Na	Cl	CO ₃	HCO ₃	
2022/746	Sorghum	0-15	7.7	8.03	42.6	1000	23.3	25.9	29.67	50.00	0.00	7.60	78.87
2022/747	Sorghum	15-30	7.7	5.23	44.6	1250	14.2	18.9	17.93	32.50	0.00	5.00	51.03
2022/748	Sesbania	0-15	7.4	10.49	18.6	1000	17.9	26.1	99.86	72.50	0.00	9.00	103.86
2022/749	Sesbania	15-30	7.4	6.63	16.2	1000	20.0	21.0	24.80	45.00	0.00	6.00	65.80

Lab No.	ppm								
	Cd	Cu	Cr	Co	Fe	Mn	Ni	Pb	Zn
2022/746	0.024	0.024	0.026	0.599	0.707	0.342	0.219	0.365	6.85
2022/747	0.016	0.029	0.025	0.741	0.622	0.504	0.281	0.401	7.30
2022/748	0.014	0.009	0.010	0.626	0.572	0.365	0.286	0.306	10.37
2022/749	0.015	0.020	0.017	0.605	0.548	0.449	0.258	0.364	39.35

%		Texture	
Clay	Silt	Sand	
53.3	40.5	6.0	Silty clay
41.8	36.9	17.3	Clay
69.3	13.7	17.0	Clay
12.7	27.8	19.5	Clay

► **النشاط # 3 التحضير للمحاصيل الشتوية**

▼ **النشاط # 4 اجتماع أصحاب المصلحة؟**



النتائج الرئيسية جارية

وستكون النتائج متاحة بحلول نهاية يناير NARD سيتم تقييم حوزة المبيدات في مختبر

قرب وترواحت معايير حوزة المبيدات من 2 إلى 3 نيسي سمتر / م موسم الشتاء واصف على التوالي (KTD) تحلل المبيدات تم استخدام المبيدات المختلفة من سد هذه خلال

تحلل التربة تظهر التحلل التناوبى للتربة لها اذ مستوى خصوبة جيد ولكن بانرجة مفرحة مستقلة

بنفت إنتاجية الرقة والقيمة في الظروف التجريبية 125 طنًا من المبيد الأخضر لكل اقدار بينما بنفت إنتاجية مسداتها 45 طنًا من المبيد الأخضر لكل اقدار

► **المنتدى وشرقة الدرديشة**

► **اتصال**

Figure 3. Soil Chemical Analysis of 2022 Deir Alla (JO) pilot

2.2 Hula Valley (Israel)

Figure 4. Lenses Window Hula Valley (IL) pilot overview

2.3 Koiliaris (Greece)

εισαγωγή

Καλώς ήρθατε στο ιστολόγιό μας όπου θα συζητήσουμε τη λεκάνη απορροής του ποταμού Κοιλιάρι, ένα Παρατηρητήριο Κρίσιμης Ζώνης που βρίσκεται στην Κρήτη, Ελλάδα.

Η περιοχή έχει επηρεαστεί από έντονη γεωργική δραστηριότητα για αιώνες, με αποτέλεσμα τα εδάφη να υποβαθμίζονται σοβαρά, τα οποία κινδυνεύουν από ερημοποίηση λόγω της κλιματικής αλλαγής.

Η λεκάνη απορροής του ποταμού Κοιλιάρι καλύπτει συνολική έκταση 130 km² και βρίσκεται 25 km ανατολικά της πόλης των Χανίων. Η κύρια πηγή νερού είναι τα Άζυκα Όρη, με υψόμετρα που φτάνουν τα 2014 m και κλίση έως και 43%. Η χρήση γης στην περιοχή περιλαμβάνει καλλιέργειες εκτάτας, βοσκότοπους, ελαιώνες και πορτοκαλιώνες, έθιμους και έθιμους και μικτά όδη.

Η γεωλογία της λεκάνης αποτελείται από δολομίτες, μάρμαρα, ασβεστόλιθο, ανακρυσταλλοποιημένο ασβεστόλιθο με κλαυδίδια, ασβεστολιθικές μάρμαρες σε νεογενείς σχηματισμούς, μάρμαρες σε νεογενείς σχηματισμούς, σχιστόλιθους και τεταρτογενείς προσχωματικές αποθέσεις.

Από το 2004 διεξάγεται εντατική υδρολογική και γεωχημική παρακολούθηση στη λεκάνη απορροής του ποταμού Κοιλιάρι, με ιστορικά δεδομένα να χρονολογούνται από τη δεκαετία του 1960. Ένας τηλεμετρικός υδρολογικός σταθμός υψηλής συχνότητας και παρακολούθησης της ποιότητας του νερού έχει επίσης αναπτυχθεί για τη λήψη δεδομένων για τον χαρακτηρισμό των υδρολογικών και βιογεωχημικών διεργασιών με ποικίλους χρόνους απόκρισης διεργασιών.

Ένας από τους κύριους τύπους υποβάθμισης του εδάφους στη λεκάνη είναι η υδάτινη δόξωση, που προκαλείται από την εξαθέρωση των δασών και της φυσικής βλάστησης για καλλιέργειες και βοσκή ζώνες. Η αποβλάστηση και οι ακατάλληλες καλλιεργητικές πρακτικές έχουν οδηγήσει σε απώλειες οργανικής ύλης του εδάφους, καθιστώντας τα εδάφη ευάλωτα στη δόξωση και την ερημοποίηση. Αυτό έχει παγκόσμιες συνέπειες για την επαγγελματική ασφάλεια, την κλιματική αλλαγή, τη βιοποικιλότητα, την ποιότητα του νερού και την αγροτική οικονομία.

Συμπερασματικά, η λεκάνη απορροής του ποταμού Κοιλιάρι χρησιμεύει ως κρίσιμος χώρος για τη μελέτη των επιπτώσεων της γεωργικής δραστηριότητας και της κλιματικής αλλαγής στην υγεία του εδάφους και στις υπηρεσίες οικοσυστήματος. Τα δεδομένα που συλλέγονται από αυτόν τον ιστότοπο μπορούν να πληροφορήσουν στρατηγικές για βιώσιμες πρακτικές χρήσης γης και διαχείρισης που προάγουν τη διατήρηση του εδάφους και την περιβαλλοντική ανθεκτικότητα.

Στο LENSES, το πιλοτικό πρόγραμμα Κρίσιμης Ζώνης Κοιλιάρι ενσωματώνει πειράματα πεδίου που στοχεύουν στη μείωση των απαιτήσεων νερού στις καλλιέργειες εθνοκάντο με την αξιολόγηση λύσεων που βασίζονται στη φύση ως λύσεις Nexus. Οι προκλήσεις σε αυτό το πιλοτικό πρόγραμμα σχετίζονται με την υψηλή ζήτηση νερού της γεωργίας και την ανάγκη να μειωθεί η πίεση στους υδάτινους πόρους στην περιοχή.

Figure 5. Lenses Window Koiliaris (GR) pilot overview

Τέλος, αξιολογήσαμε την καθαρή παρούσα αξία κάθε NBS συγκρίνοντας το κόστος εφαρμογής, διαχείρισης και διατήρησής του με τα οφέλη που παρέρχεται το ES. Αυτό μας επέτρεψε να καθορίσουμε το πιο οικονομικό NBS για κάθε πρόκληση.

Scenario	ES Provision	ES Value	ES Cost	ES Benefit
Baseline (no NBS)	17,931.96	1,075,554.07€	0	1,075,554.07€
Broadleaved forest (NBS scenario)	20,620.84	1,075,554.07€	1,082,808.50€	2,158,362.57€
B-A	2,688.88	0	1,082,808.50€	1,075,554.07€

Cost-benefit Analysis: Benefits

ES: Moderation of extreme events

ES provision

	A. Baseline (no NBS)	B. Broadleaved forest (NBS scenario)	B-A
retained runoff volume (m ³)	17,931.96	20,620.84	2,688.88
runoff retention index	5,977.32	6,873.61	896.29
runoff value (mm)	871,641.81	764,086.41	-107,555.4

ES Economic value: replacement cost method lamination basin as a substitute good

Retained runoff volume **2,688.88** Unit cost 400€/m³ total value **1,075,554.07€**
(Mazzoni et al., 2022)

ES: Climate regulation

ES provision

tons of carbon 5,819.71 tons of CO₂ 21,358.35 price per tCO₂e 7.70€ total value **164,459.32€**
(Ecosystem Marketplace, 2022)

Total Benefits: ES moderation + ES climate = **1,240,013.38€**



Cost-benefit Analysis: Costs

Implementation: **1,082,808.50€** (Lilli et al., 2020 + information from pilot)

Maintenance: been assumed to be equal to 5% of the implementation costs
(Carpajal and Zemanat, 2018)

Cost-benefit Analysis

Benefits: from 5th year

Costs: 75% (1st year) 25% (2nd year) & maintenance from 3rd year
(Carpajal and Zemanat, 2018)

NBS: Riparian Forest creation

Size: 335,450 m²

Currency: €

N = 20 years

r = 3.5% (Dicks et al., 2020)

NPV (€)	11,364,940.45	NPV = Net Present Value
B/C	7.67	B/C = Benefit-Cost ratio
IRR	40.49%	(economic return for each € invested)
PB	5	IRR = Internal Rate of Return
		PB = Payback period (years to fully recover the investment)



φόρουμ και αίθουσα συνομιλίας



FORO
Συνομιλία

Επικοινωνία

Figure 6. Lenses Window Koiliaris (GR) pilot Cost-benefit Analysis

2.4 Pinios (Greece)



the LENSES project
Pinios Area, Greece

Home
Area personal
Events
My Courses
Site curso
Official site

> Cursos > Pinios



ΠΙΛΟΤΙΚΕΣ ΠΕΡΙΟΧΕΣ Collapse todo

Λεκάνη Απορροής Αγιάς



- Έκταση: 53 km² περίπου
- Ελληνικό και Διεθνές Δίκτυο Μακροχρόνιων Περιβαλλοντικών Παρατηρήσεων, με την ονομασία "Υδρολογικό Παρατηρητήριο Πηνειού"
- Κυριαρχεί η γεωργία (μήλα, κερσιά)
- Άρδευση με υπόγεια ύδατα

Δέλτα Πηνειού

- Πεδιάδα υψηλής παραγωγικότητας έκτασης περί τα 75 km²
- Κυρίαρχες καλλιέργειες: ακτινίδια, μηδική, καλαμπόκι, ενεργειακές καλλιέργειες
- Άρδευση κυρίως από επιφανειακά και επικουρικά από υπόγεια ύδατα
- Υφαλμύριση
- Τουριστική δραστηριότητα στην παράκτια περιοχή

ΠΟΙΟΙ ΕΙΜΑΣΤΕ

IEYΠ

Ινστιτούτο Εδαφοϋδατικών Πόρων

Το Ινστιτούτο Εδαφοϋδατικών Πόρων (IEYΠ) αποτελεί ένα από τα 11 Ερευνητικά Ινστιτούτα του Εθνικού Γεωργικού Οργανισμού "ΔΗΜΗΤΡΑ". Το ΙΕΥΠ αποτελεί το μεγαλύτερο εξειδικευμένο ερευνητικό Ινστιτούτο της χώρας μας στους τομείς της προστασίας και διαχείρισης των εδαφικών και υδατικών πόρων, καλύπτοντας ένα ευρύ πλαίσιο επιστημονικών αντικειμένων. Σήμερα, το ανθρακικό δυναμικό του Ινστιτούτου αποτελείται από 21 ερευνητές, 21 ειδικούς επιστήμονες, 21 άτομα διοικητικό και τεχνικό προσωπικό και 25 συνεργαζόμενους συμβασματούχους επιστήμονες που απασχολούνται σε ερευνητικά έργα και έργα τεχνικού συμβούλου. Το ΙΕΥΠ έχει συμμετάσχει διαχρονικά σε ένα ευρύ πλήθος εθνικών και ευρωπαϊκών ερευνητικών έργων, ενώ μόλις την τελευταία δεκαετία το ΙΕΥΠ έχει συμμετάσχει (συμμετέχει σε ευρωπαϊκά ερευνητικά έργα που χρηματοδοτούνται από τα Προγράμματα HORIZON 2020 (REKUS, ATLAS), PRIMA (LENSES, MEDSAL) και LIFE+ (SoS, EcoPest, SAGE10, oliveCLIMA, AgroClimateWater). Τα ερευνητικά έργα που συμμετέχει το ΙΕΥΠ αφορούν τη διαχείριση των εδαφοϋδατικών πόρων, με επίκεντρο τη μελέτη του δασυοδεσμικού συστήματος Νερό-Ενέργεια-Γεωργία-Κλίμα, την εγκατάσταση και ανάπτυξη καινοτόμων τεχνολογικών λύσεων και αειφόρων περιβαλλοντικής παρακολούθησης, την ανάπτυξη και εφαρμογή καλών αγροτικών πρακτικών, την αβιολόγηση των επιπτώσεων της κλιματικής αλλαγής, την αβιολόγηση των περιβαλλοντικών επιπτώσεων στη γεωργία και την ανάπτυξη συντηριών με Ουδρές Ενδιαφερόμενων Μερών. Ένα από τα βασικά γνωρίσματα των ερευνητικών και αναπτυξιακών έργων που διαχειρίζεται το ΙΕΥΠ αφορά την εφαρμογή εθνικών και ευρωπαϊκών πολιτικών, που σχετίζονται με τα ερευνητικά του ενδιαφέροντα. Το ΙΕΥΠ εγκαθίσταται και λειτουργεί το Υδρολογικό Παρατηρητήριο Πηνειού, το οποίο περιλαμβάνεται στο Διεθνές Δίκτυο Μακροχρόνιων Περιβαλλοντικών Παρατηρήσεων (International Long Term Ecosystem Research, ILTER) και στο Ευρωπαϊκό Δίκτυο Υδρολογικών Παρατηρητηρίων (European Network of Hydrological Observatories, ENCHA). Επιπλέον, το ΙΕΥΠ συμμετέχει στη λειτουργία του Εθνικού Δικτύου Παρακολούθησης των ποτικών συστημάτων της χώρας μας, στο πλαίσιο εφαρμογής της Οδηγίας 2000/60.

Figure 7. Lenses Window Pinios (GR) pilot overview

The screenshot shows a web interface with a navigation bar at the top containing 'Inicio', 'Áreas personal', 'Eventos', 'Mis Cursos', 'Sede curso', and 'Oficial site'. Below the navigation bar, there are five stakeholder profiles arranged in a grid. Each profile consists of a square photograph on the left and a text block on the right. The text blocks contain the name of the stakeholder, their title, and a brief description of their research and professional work in the field of water management and agriculture.

Figure 8. Lenses Window Pinios (GR) pilot stakeholders

ΠΡΟΚΛΗΣΕΙΣ ΠΟΥ ΠΡΕΠΕΙ ΝΑ ΑΝΤΙΜΕΤΩΠΙΣΤΟΥΝ



- 1
 - Χωρική και χρονική μεταβολή της στάθμης του υπόγειου υδροφορέα στη λεκάνη απορροής Αγιάς.
 - Χαμηλή απόδοση συστημάτων εφαρμογής και μεταφοράς αρδευτικού νερού.
 - Υφαλμύριση υπόγειων υδάτων στο Δέλτα Πηνειού.
 - Κατά τόπους υψηλές συγκεντρώσεις νιτρικών στα υπόγεια νερά.
- 2
 - Διατήρηση της οικολογικής παροχής του ποταμού Πηνειού.
 - Υψηλές πιέσεις στους παράκτιους οικοτόπους του ποταμού Πηνειού.
 - Μη ορθολογική διαχείριση των χρησιμοποιημένων αγροτικών συσκευασιών.
- 3
 - Αυξημένο κόστος παραγωγής.
 - Μη ορθολογική χρήση φυτοφαρμάκων και λοιπών αγροτικών εφοδίων.
 - Περιορισμός διαθέσιμων αγορών για εξαγωγές αγροτικών προϊόντων.
 - Ανάγκη διατήρησης της υψηλής δυναμικότητας των μήλων και ακτινιδιών στην ελληνική και διεθνή αγορά.
 - Ευαισθησία καλλιεργειών στην ξηρασία στο Δέλτα Πηνειού, λόγω μείωσης συνεισφοράς της τριχοειδούς ανύψωσης στην κάλυψη των αρδευτικών αναγκών

ΚΥΡΙΟΙ ΣΤΟΧΟΙ



✓ Επίτευξη καλής ποιότητας και διασφάλιση επαρκούς ποσότητας υδατικών πόρων ✓ Μετριασμός υφαλμύρισης στους παράκτιους υδροφορείς ✓ Μείωση χρήσης αγροτικών εφοδίων ✓ Προώθηση προσαρμοστικότητας και ενίσχυση ανθεκτικότητας στην κλιματική αλλαγή (πλημμύρες και ξηρασίες)



✓ Διατήρηση οικολογικής παροχής ✓ Διασφάλιση επαρκούς ποσότητας νερού για την αγριοπανίδα των ορεινών περιοχών ✓ Βελτίωση εδαφολογικών χαρακτηριστικών ✓ Μείωση αγροτικού αποτυπώματος ✓ Ενίσχυση επιπέδου διατήρησης των προστατευόμενων περιοχών NATURA 2000



✓ Διατήρηση αγροτικής παραγωγικότητας ✓ Ενίσχυση βιωσιμότητας και ανταγωνιστικότητας του αγροτικού τομέα ✓ Βελτιστοποίηση κόστους παραγωγής ✓ Προώθηση ποιοτικών πλεονεκτημάτων των τοπικών προϊόντων για την ενίσχυση της θέσης τους στις εγχώριες και διεθνείς αγορές

Figure 9. Lenses Window Pinios (GR) pilot goals

▼ ΕΝΗΜΕΡΩΤΙΚΑ ΔΕΛΤΙΑ

Η λειψυδρία, (07-11-2022)

οι πλημμύρες Η λειψυδρία, οι πλημμύρες και η αντιμετώπισή τους.

και η Άρθρο του κ. Λουκά Γεωργαλά, Δρ. Υδρογεωλογίας και Διπλής Σχεδιασμού και Διαχείρισης Υπηρεσιών Ύδατος

αντιμετώπισή Υπουργείου Περιβάλλοντος και Ενέργειας

τους (<https://energypress.gr/news/i-leipsydria-oi-plimmyres-kai-i-antimetopisi-toys>)

(01-02-2021)

Η λειψυδρία, οι πλημμύρες και η
αντιμετώπισή τους

Χάνουμε πολύτιμο νερό. Μήπως πρέπει να το αποθηκεύουμε;

Άρθρο του κ. Λουκά Γεωργαλά, Δρ. Υδρογεωλογίας και Διπλής Σχεδιασμού και Διαχείρισης

Υπηρεσιών Ύδατος Υπουργείου Περιβάλλοντος και Ενέργειας

(<https://energypress.gr/news/hanoyme-polytimo-nero-mipos-prepei-na-apothikeyoume>)

> ΕΚΔΗΛΩΣΕΙΣ

> FORUM

> ΕΠΙΚΟΙΝΩΝΙΑ

2.5 Menemen plain (Turkey)



> Cursos > Gediz

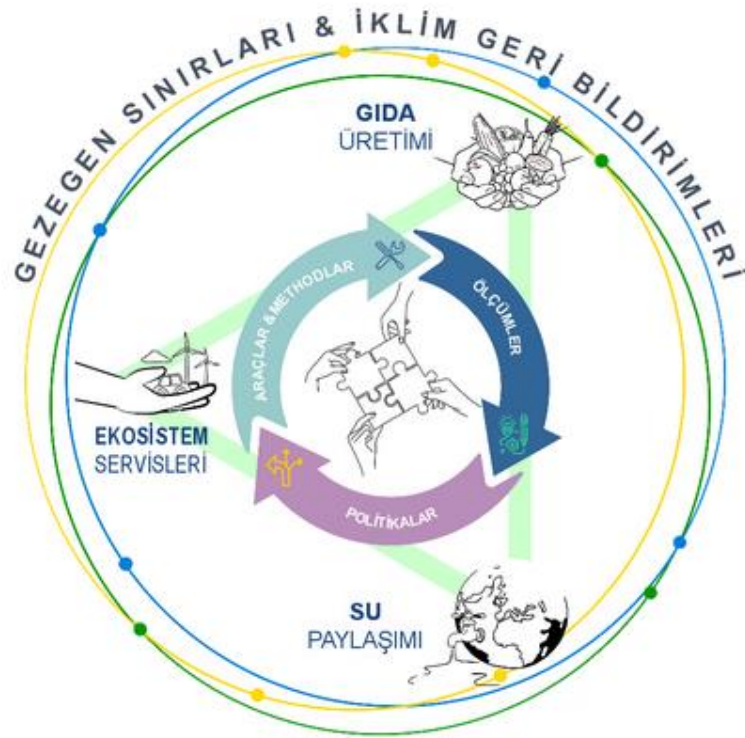

Gediz Havzası & Menemen Ovası ,TÜRKİYE
Colapsar todo



LENSES, su, ekosistem ve gıda (WEF) sisteminde esnekliği güçlendirerek sürdürülebilirliğine katkı sağlamayı amaçlamaktadır. Bu amaçla; projede farklı etkileşimler (su tahsisi, ekosistem hizmetleri, gıda üretimi, iklim uyumu) hakkında bir farkındalık yaratmayı hedeflemektedir.

LENSES, kolektif bir öğrenme süreci ve paydaş katılımı aracılığıyla ekosistemleri korurken aynı zamanda iklim değişikliğine adaptasyonu destekleyerek gelişmiş su tahsisine ve gelişmiş gıda güvenliğine katkıda bulunmayı amaçlamaktadır. **LENSES**, dinamik gelişimiyle sistemin daha iyi anlaşılması ve karmaşıklığı ortaya çıkarmak için bilgi toplamasını ve yapılandırmasını amaçlamaktadır. Belirsizliği ortadan kaldırarak karar alıcıların karar verme sürecinde öncü rol oynamaktadır.

Figure 10. Lenses Window Gediz Basin (TR) pilot overview



Lenses Projesi Pilot Alan Tanıtımı

Toplam Alan: 29500 ha

Ortalama yükseklik: 10,3 m

Ortalama yıllık toplam yağış: 536,2 mm

Ortalama yıllık hava sıcaklığı: 16,90C

Başlıca toprak türleri: Entisol, Inseptisol ve vertisol

Arazi kullanımı: Ekilebilir arazi (sulu tarım) ve konutlar

Ürün deseni: Pamuk, mısır, tahıl, asma, zeytin, sebze

Sulama suyu ana su kaynağı: Gediz Nehri

Gediz havzası önemli bir tarımsal üretim alanıdır. Ürün çeşitliliği bakımından büyük öneme sahiptir. Sebze, meyve, bağ ve tarla bitkileri yetiştirilmektedir. Delta'nın ucunda Ramsar ve kuş cenneti yer almaktadır. Bölge iklim değişikliği nedeniyle kuraklık ve su sıkıntısı ile karşı karşıyadır.

Gediz deltasının en önemli problemlerinden biri drenaj

Figure 11. Lenses Project pilot Alan Tanıtımı

▼ HAVZANIN GENEL SORUNLARI VE ÇÖZÜM ÖNERİLERİ

Havzanın Genel Sorunları



Kuraklık ve sulama suyu yetersizliği



Drenaj sorunları



Toprak tuzluluğu



İklimsel dalgalanmalar ve çevresel etkiler nedeniyle ekosistemdeki dengenin bozulması



Yüzey sulama yöntemleri ile bilinçsiz ve aşırı su kullanımı

Figure 12. Lenses Project pilot genel sorunlari

Çözüm Önerileri



▼ Hedefler

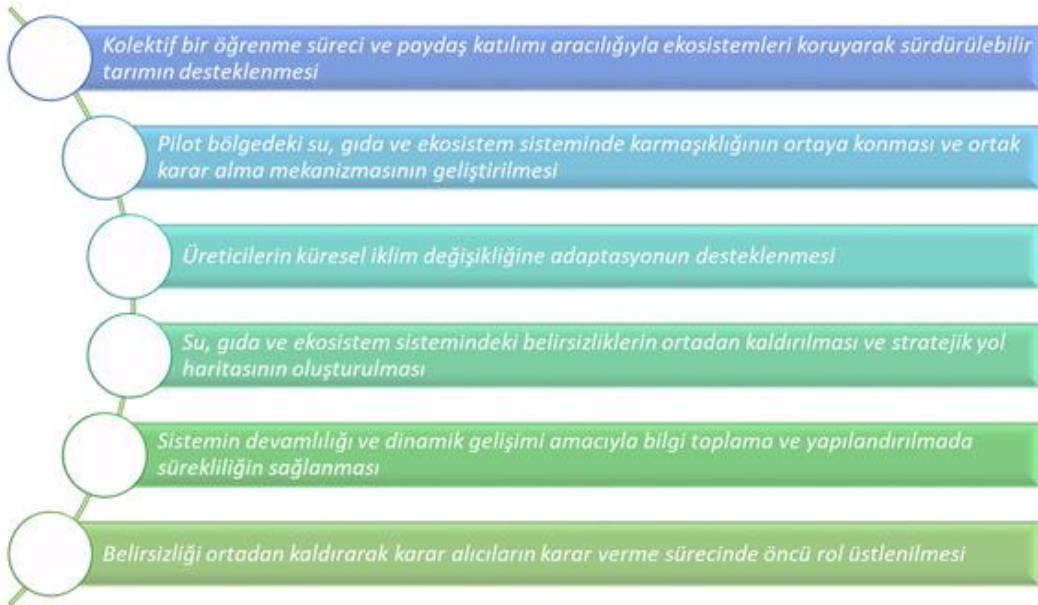


Figure 13. Lenses Project Gediz Basis pilot (TR)

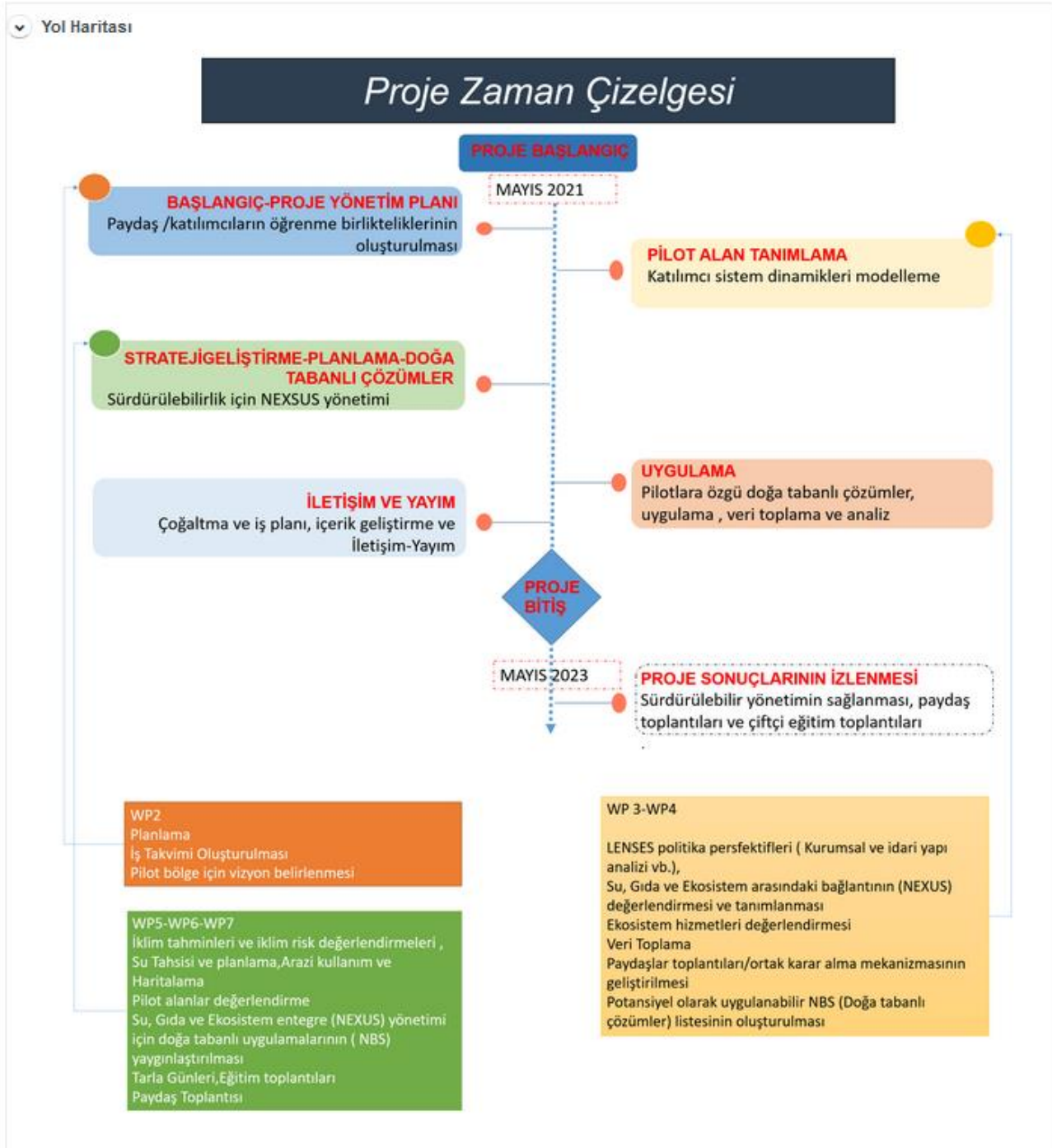


Figure 14. Lenses Project Gediz Basis pilot (TR)

Proje Zaman Çizelgesi



Doğa Tabanlı Çözümler

"Doğa temelli çözümler, insanlar olarak karşılaştığımız zorluklara doğanın sunduğu çözümlerdir."
Cecil Konijnendijk

Doğaya Dayalı Çözümler, toplumsal zorlukları etkin ve uyumlu bir şekilde ele alan, aynı anda insan refahı ve biyolojik çeşitlilik faydaları sağlayan doğal ve değiştirilmiş ekosistemleri korumaya, sürdürülebilir bir şekilde yönetmeye ve eski haline getirmeye yönelik eylemlerdir.
International Union for Conservation of Nature (IUCN)

 <p>TARIM</p>	<p>İyileştirilmiş toprak ve su yönetimi Ürün türü çeşitlendirmesi ve rotasyonu Tarımsal ağaçlandırma (Meyve bahçesi kurulumu) Azaltılmış toprak işleme Ara ziraati Mikrobiyal gübre uygulamalarının yaygınlaştırılması Yeşil Gübreleme ve kompost Rejenaratif tarım Ürün uygunluk alanlarının belirlenmesi Toprak özellikleri belirleme ve haritalama</p>	<p>Su ve toprak muhafaza Hastalık ve zararlıların kontrolü Karbon tutma Biyçeşitlik Kuraklık stresinin azaltılması Toprak verimliliği</p>
 <p>ORMAN</p>	<p>Ormanların korunması ve restorasyonu Sürdürülebilir orman yönetimi Ağaçlandırmaların peyzaja entegrasyonu</p>	<p>Su akışlarının düzenlenmesi Taşkınların azaltılması Şev stabilizasyonu Hastalık ve zararlı kontrolü Karbon tutma Biyçeşitlik Rekreasyon ve estetik beğeni</p>
 <p>İKLİM DEĞİŞİKLİĞİNE ADAPTASYON</p>	<p>Sürdürülebilir ekosistem yönetimi Alternatif kurakça dayanıklı ürün deseninin belirlenmesi Kuraklık risk alanlarının belirlenmesi Su tahsis ve adil paylaşımı Ürün çeşitliğinin artırılması Geleceğe düşük iklim projeksiyonlarının modellenmesi</p>	<p>Biyçeşitlik Verimlilik İklim değişikliğine adaptasyonun geliştirilmesi ve etkisinin hafifletilmesi Risk yönetimi ve dayanıklılığı geliştirilmesi</p>
 <p>BİYOÇEŞİTLİLİK</p>	<p>Ürün çeşitlendirmesi Ekosistem restorasyonu</p>	<p>Ekosistem rejenarasyonu Biyçeşitlik Genetik kaynakların korunması</p>
 <p>YERLEŞİM ALANLARI</p>	<p>Parklar, ormanlar, sokak ağaçları Yeşil binalar (ör. yeşil çatılar, yeşil duvarlar) Su hasadı Atık suların tarımsal sulamada değerlendirilmesi</p>	<p>Su akışının düzenlenmesi Karbon tutma Biyçeşitlik İnsan sağlığı ve esenliği Su kalitesi Su muhafazası</p>
 <p>AFET RİSKİNİN AZALTILMASI</p>	<p>Ekosistem tabanlı yaklaşımlar ile afet riskinin azaltılması Çok işlevli doğaya dayalı havza yönetimi Erken uyarı sisteminin geliştirilmesi Ekosistemin korunması</p>	<p>Su akışlarının düzenlenmesi Taşkınların ve toprak erozyonunun azaltılması Ekonomik zararın azaltılması Bozulmuş ekosistemlerin restorasyonu Risk yönetimi ve dayanıklılığı geliştirilmesi</p>

Figure 15. Lenses Project Gediz Basis pilot (TR)



UTAEM İletişim



**Uluslararası Tarımsal Araştırma ve Eğitim
Merkezi**

Adres: Camikebir Mah, Menemen Maltepe Yolu No: 27/1, 35660 Menemen/İzmir

Telefon: (0232) 831 10 52



UTAEM Resmi Websitesi



UTAEM Facebook Hesabı



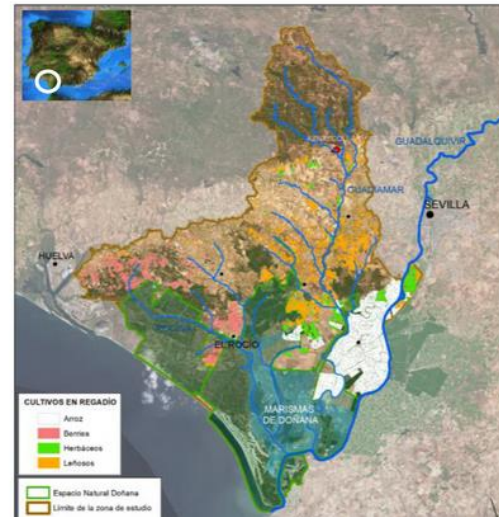
UTAEM Instagram Hesabı

ADDRESSING THE SUSTAINABILITY OF AGRICULTURE AND ECOSYSTEM SERVICES IN THE DOÑANA REGION

The pilot area includes the Doñana marshlands, one of the most valuable wetlands in the Mediterranean region, being the wintering site for more than 500,000 water fowl each year. Moreover, the region is the largest berry producer and one of the most important rice cultivation areas across Europe. Climate change and intensive use of resources are seriously compromising the sustainability of irrigated agriculture and the conservation of the environmental heritage of Doñana. Novel and holistic solutions and approaches are required to ensure resilience of the whole agro-ecological system.

GENERAL CHARACTERIZATION

- ✓ The pilot area encompasses the Doñana National and Natural Parks as well as the cultivation areas sharing water resources (i.e. surface and groundwater) with the Doñana natural space.
- ✓ **Location:** South-West of the Iberian peninsula, within Andalusia region.
- ✓ **Main economic activities:** Agriculture and (eco)tourism.
- ✓ **Area:** 3,700 km².
- ✓ Doñana is an UNESCO World Heritage site because of its exceptional value for in situ conservation of biological diversity.
- ✓ More than 8,500 ha of berries; 23,000 ha of rice and 15,000 ha of woodlands are irrigated in the Pilot area.



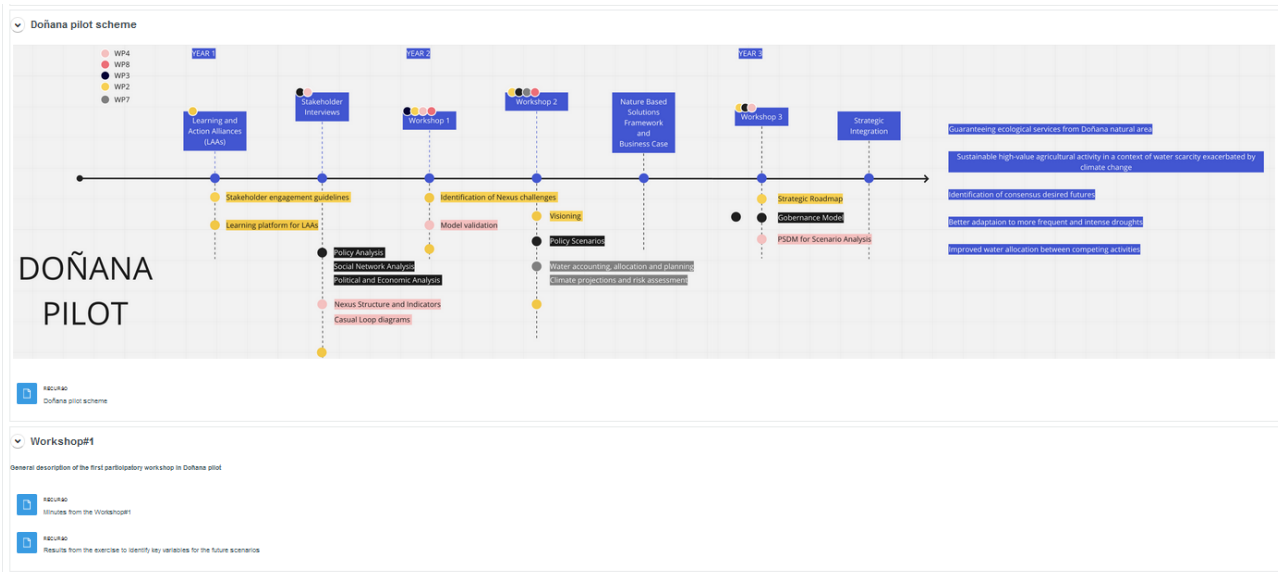
<https://lenseswindow.eu/course/view.php?id=12#> is currently activated



LENSES GOALS

Contribute to improve water resources management by creating a systemic view to help address Nexus challenges:

- ✓ Sustainable high-value agricultural activity in a context of water scarcity exacerbated by climate change
- ✓ Better adaptation to more frequent and intense droughts
- ✓ Guaranteeing ecological services (i.e. provision, regulation, cultural) from Doñana natural space, currently limited by a decrease in rainfall and water contribution
- ✓ Improved water allocation between competing activities
- ✓ Identification of consensus desired futures





What we have done so far

Tras llevar a cabo la ronda inicial de entrevistas en noviembre de 2021, se detectaron los principales retos sectoriales relacionados con la agricultura, el agua y el medio ambiente con el fin de mejorar la sostenibilidad de los recursos naturales en el área de Doñana.

A partir de ahí, se construyó una "red ecológica" y una "red social". La red ecológica representa los recursos y procesos ecológicos que influyen en la producción y el suministro de servicios ecosistémicos, mientras que la red social conecta a las diferentes partes interesadas y responsables de la toma de decisiones involucrados en la producción, suministro y uso de los servicios ecosistémicos que garantizan la seguridad del sistema en su conjunto (como la disponibilidad de agua con la calidad adecuada o la conservación del suelo).

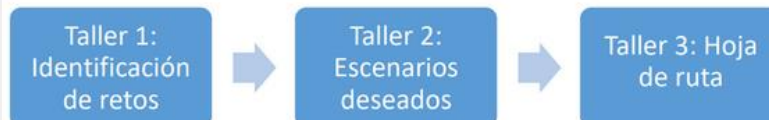
Estas redes conforman un modelo cualitativo que servirá de base para desarrollar un modelo cuantitativo que permitirá analizar el comportamiento del sistema ante cualquier variación.

Plan de actividades participativas (talleres)

Durante 2022 y 2023, el proyecto LENSES organizará tres talleres para incluir la experiencia y conocimiento de diversos actores e individuos en la elaboración de una hoja de ruta que muestre una visión sistémica para el abordaje de los principales retos identificados.

Dentro de estos talleres:

- i) Transformaremos los retos sectoriales en retos globales
- ii) Elaboraremos visiones de futuros deseados (a qué futuro aspiramos para la región de Doñana)
- iii) Crearemos (con apoyo del modelo y otra información generada en el marco de LENSES) una hoja de ruta hacia estos futuros deseados



▼ **LEARN MORE ON REXUS TOOLS AND METHODS**

PARTICIPATORY SYSTEM DYNAMIC MODELLING



PÁGINA

What is Participatory System Dynamics Modelling



PÁGINA

Causal Loop Diagram for Doñana (initial version)

NATURE-BASED SOLUTIONS



PÁGINA

NbS Preliminary Design for Doñana region

CLIMATE RISK ASSESSMENT

▼ FORUM AND CHAT ROOM



FORO

Forum for Doñana Pilot Case



CHAT

Chat room for Doñana pilot case

▼ CONTACT

LENSES

lenses-prima.eu

info.lenses@crea.gov.it

ECOADAPTA

ecoadapta.org/

Manuel Bea

manuelbm@ecoadapta.org

Estrella López Moya

estrellalm@ecoadapta.org

Tomás Vázquez

tomasvi@ecoadapta.org

3. Conclusions and next steps

In the last project-LAA, pilot leaders and WP2 have thought of a series of meetings, with the objective of establishing a closer relation with each pilot, to reach the final goal, which is, plainly, to enhance participatory processes and make knowledge actionable using an educational tool, in this specific case. We have thought of a series of milestones that we will tailor according to the needs.

- The beta version of the platform should be designed to appeal to a larger audience and promote cross-scale stakeholder interaction. There is a general agreement that the platform lacks appeal from the design perspective; therefore, a core need that has been identified to move forward is to improve the general appearance of the platform as means to make stakeholders want to remain on it for some time.
- The LENSES website, blog, and observatory are relevant resources for stakeholders and there needs to be an easy way to make stakeholders visit all these platforms.
- A new international section will be created and will seek collaboration and interaction between stakeholders from different pilots.
- Automatic translation may be a helpful feature.
- Taglines are needed to trigger stakeholder engagement; and engage keeping in mind what is really they are interested in (aspects in which LENSES could really help them).
- Feedback from stakeholders will be accepted for future improvements.
- Pilots have different expectations and needs for assistance with the platform:
 - Pinios pilot will use the platform to contact local stakeholders, share news, and present details in Workshop 2.
 - Doñana will also present the platform to stakeholders during workshop 2.
 - The platform targets stakeholders with technical knowledge, rather than nexus stakeholders with local or practical knowledge, such as farmers.
 - Gediz pilot will share activities on their social media and send the link from time to time.
 - Tarquinia pilot finds logging in not practical, and stakeholders may get lost.
 - Deir Alla pilot will analyse the section and upload content during meetings.
 - Hula Valley and Koiliaris pilots have not requested assistance to update their sections.



LENSES learning platform (update)



This publication reflects only the author's view and the PRIMA Foundation is not responsible for any use that may be made of the information it contains

