

LEARNING and action alliances for **NEXUS** ENVIRONMENTS
in an uncertain future

LENSES

WP1

D1.3 Knowledge management strategy

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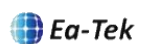
Project coordinator



Project partners



Project Website



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



LENSES Knowledge management strategy



Graphics: Francesco Ambrosini (CREA)



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1 Abstract

The knowledge management strategy of the LENSES project is outlined in this deliverable, including the methodology, activities and measures that will be employed for realizing this plan throughout the project's lifespan. It deals with the documentation of rules and definitions related to the management of knowledge and intellectual property, and reports on intellectual property assets that will be generated within the consortium, specifying factors related to their protection and accessibility. Furthermore, it involves a set of rules and agreements related to the management of scientific publications.

2 Introduction

The LENSES knowledge management strategy will use the principles and some techniques of Organic Knowledge Management, which emphasizes communities and human interactions.

The project coordinator will act as the "Chief Knowledge Officer" and: i) provide space, structures, and opportunities for identifying, consolidating and curating the co-created knowledge; ii) monitor the process and assess its coherence with LENSES objectives; iii) ensure that participation and gender issues are adequately taken into account; iv) provide incentives to encourage and reinforce those emerging patterns that benefit the project (and discourage those that do not).

The LENSES management strategy deals with the documentation of rules and definitions related to the management of knowledge and intellectual property, and reports on intellectual property assets that will be generated within the consortium, specifying factors related to their protection and accessibility. Furthermore, it involves a set of rules and agreements related to the management of scientific publications.

3 Basic definitions

Aiming to establish a management plan regarding the extracted knowledge and the created Intellectual Property (IP) assets during the project, the LENSES consortium has defined the following set of definitions.

3.1 Foreground

The project results, including information, whether or not they can be protected, which are generated by the project. Such results include rights related to copyright; design rights; patent rights; or similar forms of protection.

3.2 Ownership

Foreground resulting from the project is owned by the participant generating it.

When Foreground is generated jointly (i.e. where the separate parts of some result cannot be attributed to different participants), it will be jointly owned, unless the participants concerned agree on a different solution. In the case of "Joint Foreground", each of the joint owners shall be entitled to use their jointly owned Foreground on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and each of the joint owners shall be entitled to grant non-exclusive licenses to third parties, without any right to sub-license, subject to conditions that include fair and reasonable compensation being provided to the other joint owner(s); these conditions are specified in the CA.

In case of transfer of foreground ownership, each partner concerned shall pass on its obligations regarding that foreground to the assignee. The partners concerned shall provide to the other consortium members and to the EC prior notice of any envisaged transfer and with copy of any relevant information.

3.3 Protection

Valuable Foreground will be protected by its owner(s) through filing of patent applications where possible, or other Intellectual Property Rights (IPR) protection measures. The parties undertake not to leave valuable foreground unprotected. No public disclosure of Foreground will take place before a decision is made regarding its possible protection.

3.4 Background

This refers to background information that was held by Parties prior to their accession to the Grant Agreement, as well as copyrights or other IPRs pertaining to such information, the application for which has been filed before their accession to the Grant Agreement, and which is needed to carry out the Project or for using the Foreground.

3.5 Access rights

Access rights to another participant's Foreground or Background will only be granted if the requesting participant needs that access in order to carry out project activities or to use in its own foreground. The details pertaining to access rights have been specified in the CA, Section 9. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate Business Agreements.

4 Overview of rules set in LENSES Agreements

The management of intellectual property will be vital in LENSES, due to the pre-existing know-how distributed among the consortium partners and the need for proper sharing to positively impact project's results and long-term implementation.

A set of established rules related to the management of knowledge and intellectual property in the LENSES project have been agreed by project partners firstly by undersigning the Consortium Agreement (CA), and by undersigning the Grant Agreement (GA). These conventions (which are discussed and extended in the

following section) aim to ensure the protection of confidential information and patenting of important knowledge that will be created during the project's lifetime.

In particular, the GA establish in its Section 3, the rights and obligations related to background and results. Article 23a — “Management of intellectual property” in its paragraph 23a.1 “Obligation to take measures to implement the Commission Recommendation focus on the management of intellectual property in knowledge transfer activities”. It establish that beneficiaries that are universities or other public research organisations must take measures to implement the principles set out in Points 1 and 2 of the Code of Practice to the Commission Recommendation on the management of intellectual property in knowledge transfer activities. Furthermore, the beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

The CA defines for each partner in the consortium, the rules and obligations regarding existing knowledge (background) and the knowledge developed during the project (foreground knowledge). The granting of access rights to the background will depend on the acceptance of specific conditions, aimed at ensuring that these rights will be used only for the scope of LENSES and with the appropriate confidentiality obligations. LENSES partners have identified and agreed on the Background for the Project, which have been detailed in Annex 1 of the CA, and have also, where relevant, informed each other that Access to specific Background is subject to legal restrictions or limits (CA, Section 9.1 Background included).

During and after the project, as established in the CA, the partners will preserve the confidentiality of any data, documents or other material identified as confidential.

Access right to background is regulated to article 25 of the GA. According to the sub-article 25.1, to exercise access rights, this must firstly be requested in writing (‘request for access’). ‘Access rights’ means rights to use results or background under the terms and conditions laid down in the GA. Waivers of access rights are not valid unless in writing. Unless agreed otherwise, access rights do not include the right to sub-license. Furthermore, the beneficiaries must give each other access — on a royalty-free basis — to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has — before acceding to the Agreement —: (a) informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel), or (b) agreed with the other beneficiaries that access would not be on a royalty-free basis. The beneficiaries must give each other access — under fair and reasonable conditions — to background needed for exploiting their own results, unless the beneficiary that holds the background has — before acceding to the Agreement — informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel). Unless otherwise agreed in the consortium agreement, access to background must also be given, under fair and reasonable conditions, to affiliated entities, that unless agreed otherwise must make the request directly to the beneficiary that holds the background. Access rights for third parties is not applicable.

Regarding the **Foreground**, Art. 26 of the GA establishes that “results are owned by the beneficiary that generates them”. Results means any (tangible or intangible) output of the action such as data, knowledge or information — whatever its form or nature, whether it can be protected or not — that is generated in the action, as well as any rights attached to it, including intellectual property rights. Results’ joint ownership by several beneficiaries is applicable if they have jointly generated them and it is not possible to: (i) establish the respective contribution of each beneficiary, or (ii) separate them for the purpose of applying for,

obtaining or maintaining their protection. The joint owners must agree (in writing) on the allocation and terms of exercise of their joint ownership ('joint ownership agreement'). If a third party generates results, the beneficiary concerned must obtain all necessary rights (transfer, licences or other) from the third party, in order to be able to respect its obligations as if those results were generated by the beneficiary itself. If obtaining the rights is impossible, the beneficiary must refrain from using the third party to generate the results.

5 LENSES Knowledge management components

5.1 LENSES Background

According to the Grant Agreement (Article 24) Background is defined as "data, know-how or information (...) that is needed to implement the action or exploit the results". Because of this need, Access Rights have to be granted in principle. To this end, Parties must identify and agree amongst them on the Background for the project.

LENSES background has been defined and detailed in Attachment 1 of the CA which was signed by all project partners before the signature of the LENSES GA. Each Party shall remain the owner of its own background. Anything not identified in Attachment 1 shall not be the object of Access Right obligations regarding Background.

5.2 Type of knowledge created within LENSES

LENSES aspires to create a WEF Nexus narrative and Call to Action. The core message of this narrative is the paradigm shift from Nexus Thinking to Resilient Nexus Doing for strengthening resilience. The project will also reach out to a general public with visual tools to create an awareness of the WEF Nexus, the interactions among the four domains and their impact, as well as the potential to create new socio-economic opportunities. In order to maximize impact, the dissemination and communication strategy will focus on publicizing concrete results and positive feedback loops created by the participatory development and application of LENSES principles by the LAAs in the pilots. These results will be used to further advertise the potential of LENSES in informing and shaping policy, helping to break down silos among the four domains and overcome Nexus 'inertia'. This will be complemented by targeted presentation of the LENSES approach and its advantages: in advancing multi-stakeholder engagement through LAAs environments as a social innovation mechanism for Nexus Environments; defining concrete and workable indicators for socio-economic and technical analysis of the Nexus, Land use suitability mapping for Nexus assessments, Earth observations based calculated footprints; integrating existing policy elements; analyzing policy deficiencies; handling dynamic situations and creating a practical pathway to address climate and WEF challenges.

5.3 System of processes, technologies and roles used to manage knowledge within LENSES

LENSES aims to take full advantage of the project foreground, beyond the use by the partners and at the pilot sites, so that they will be used in other research, innovation, educational, and policy activities after the project end. With the aim to support the identified target audiences to use the LENSES findings, concepts, tools and technologies for WEF Nexus resilience strengthening in their challenges, LENSES will design an ad hoc **exploitation and sustainability strategy** (D9.4), which will be initially documented in M6, then updated until the end of the project (M36). LENSES exploitation and sustainability strategy (D9.4) will identify a strategy for each project output, setting targets, indicators and milestones for ensuring project sustainability after its end. At the end of the project, it will highlight approaches and procedures to replicate pilots in other geographical territories (e.g. sub-catchments/catchments) and countries. For this purpose, a specific **LENSES Replication Guide** (to be reported in the final version of D9.7) will be disseminated through activities defined within the **Dissemination and Communication strategy (D9.1)** whose final version will be documented in M36. This will include the identification of follower catchments, and their involvement in a Community of Practice, which will entail providing user requirements and testing components of the LENSES approach. The Community will be supported by the **LENSES Learning Platform (D2.3)**.

Finally, a **business plan (D9.7)** will be designed to ensure the long-term sustainability, commercialization and take-up of its results and products, as well as address legal and security aspects (see session 4 for details).

The initial (draft) list of exploitable methods and results which will be better detailed in D9.4, includes the following elements:

- ❖ The Learning & Action Alliances approach tailored to Nexus environments (as a testbed for Nexus Actions);
- ❖ The PSDM approach as documented in guidelines (to support Nexus understanding and planning);
- ❖ The knowledge base from the policy and legal frameworks analysis (subject to transferability);
- ❖ The coupling of cross-sectoral and multi-discipline indicators for the assessment of Nexus resilience;
- ❖ The LENSES data analytics and visualization platform;
- ❖ The LENSES Observatory (with Climate projections, land use mapping tool, etc.);
- ❖ The Ecosystem Services assessment methodologies and the framework for NBS selection and viability check.

Draft plan for scientific exploitation: The partners will strongly promote the scientific exploitation of the project foreground. All generated data (subject to privacy and GDPR agreements) and methodologies will be shared and provided to the research community for further exploring the potential of use of the LENSES approaches. All relevant research outputs (e.g. evaluation data, papers, case studies, co-creation models) will be released on an open access basis in peer-reviewed journals. Moreover, the LENSES research partners will consider alternatives for exploiting the project results for scientific and research purposes, e.g. for educational/training purposes or under new research projects. Publications of project results will be made

available on the project website (reports and other “grey literature”, unless they contain confidential data – D9.3) or through “gold” or “green” models in peer-reviewed journals.

Draft plan for commercial exploitation: LENSES sees market opportunities as a promising pathway to achieve sustainability of the results and promote its core (resilience of Nexus Doing) objective. The SMEs of the consortium will create products and services for new market segments and also non-consortium businesses can equally benefit from the results. The business plan (based on long-standing experience of SME partners) will take into account the incipient and expanding market opportunities to ensure the long-term sustainability, commercialization and take-up of its results, products and services, as well as address legal and security aspects. This business plan will consider practical and financial considerations concerning cost, pricing and cost schemes, organization of the supply-side, demand analysis, and potential sources of financing. This analysis will also allow identifying ways to further increase the TRL of the products. Among the new products and services to different potential customers are:

- ❖ Climate risk assessments and energy/water accounting/footprints as (i) a business to government (B2G) service, e.g. ministry of agriculture or water secretariats, or (ii) as a business to business (B2B) service, e.g. to asset owners.
- ❖ PSDM will be offered as an extremely powerful tool (offered as a service) for governments to design long-term strategies and cross-sectoral policies in the WEF space.
- ❖ ESS Assessment and NBS selection methodologies, including financial viability assessments, will be used to design appropriate mitigation schemes with the private and public sector.
- ❖ Similarly, land use planning and WEF audit decision support tools and services will enable suitable agro-food development strategies (particularly in light of Environment and Resource Cost recovery).

A **LENSES learning platform (D2.3)** will be created using existing communication and educational software, to be the central tool to facilitate the activity of the different LAAs and to promote the continuity of the LAAs communities. It will be connected via the **website (CREA)** and include several functionalities (e.g. repository, a LAA dashboard, news updates, an online forum, a calendar and an activity planner, a section for describing successful stories etc.). It will launch by month 8 and continuously update based on the feedback of LAA leaders and stakeholders. A complementary capacity building track will be designed by UTAEM and integrated with this task, which will be in close connection with WPs 7, 8, 9.

The LENSES Observatory (Task7.1) will deal with the technological aspects of knowledge management (i.e. data management). The LENSES observatory will provide a data repository that will hold all data collected within the LENSES pilot cases. The repository will also allow for data harmonization and visualization. A data collection protocol will be defined that outlines how the required datasets will be collected, stored and structured. The LENSES platform will effectively allow the collection of data from the pool of available sources. Thereby, several data connection services will be defined and implemented to enable seamless access to the required datasets. Each connection service will provide data in a way that will satisfy specifications and standards that will be included into the LENSES data collection protocol. A detailed analysis about the interconnections with the data providers will be performed in order to adapt their data flow and structure with the LENSES activities and additionally to design the respective interfaces. Different alternatives will be examined regarding how the different types of incoming datasets will be optimally integrated and

maintained into state-of-the-art, distributed and scalable warehouses and architectures (relational, NoSQL, Quad/Graph stores). Visualisation in flexible databases and with the use of GIS will allow for drawing relationships among Nexus components. **D7.1** will describe the initial strategy and results, to be updated at the project end.

The **Data Management Plan (D1.4)** will regulate data handling, in accordance with the GDPR. It will detail what data the project will generate, whether and how these will be exploited and/or made accessible for verification and re-use, and how they will be curated and preserved. According to the Grant Agreement (GA), a first version of the Data Management Plan will be delivered by M6 (D1.4) with updates included at later stages (M19, M36).

The outputs generated by all WPs in all pilots will be collected and synthesized periodically (every 6 months) within Task 8.5 "Strategic integration". The outcomes produced by each WP in all pilot, will be analysed through visual and analytical means (diagrams, spreadsheets, indicators, webGIS layers, story boards). Task 8.5 will serve as the basis for updating the planning and as a source of material for the pilot stories (developed in WP2 and WP9). The outcome of the synthesis will be shared internally and documented at the end of each year in **D8.5 LENSES synthesis products**.

Communication activities will follow an integrated approach, creating a mix of news and learnings from the LENSES approach.

Two Nexus e-dialogue webinars (**D9.5**) will **disseminate the results and learnings from the LENSES approach** in the pilot sites, in partnership with LAAs and pilots (WP2/8), while two webinars will focus on more technical aspects. On M34, the closing event will feature the case studies, their results and their exploitation potential also through the related business plans (**D9.7**).

Storytelling will be employed as a powerful tool of communication that can be engaging, memorable, provides context and relevance, can be more persuasive than data alone and is a testimonial for impact. As a contribution to LENSES knowledge management goals, the storytelling realized within task 9.5 Story as a driver of change, will support knowledge management, by sharing success stories from case studies and their impact among participants of LAAs and by enhancing the dissemination of LENSES approach and results, with the aim to inspire replication and scaling up of solutions piloted, disseminate success stories to diverse audiences to instigate mind shift and change. LENSES stories will be created in various forms: interviews, narratives adaptable in size, podcasts and short videos (**D9.6**).

5.4 Publication of project results

Publications of project results will be made available on the project website (reports and other "grey literature", unless they contain confidential data) or through "gold" or "green" models in peer-reviewed journals. Scientific results from all LENSES WPs will be published in peer-reviewed journals and presented at key conferences.

The members of the LENSES consortium agreed on and put in place a simple, lightweight publications notification procedure, so that partners wishing to publish or otherwise disclose project activities and results notify the other partners in good time to enable IP protection to be obtained if necessary. This process is detailed in Session 8.4.2 of the CA. According to this process, prior notice of any planned publication shall be given to the other partners at least 45 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Project Coordinator and to the partner(s) proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

5.5 Accountability for each individual action foreseen within the present strategy

The project coordinator will act as the "Chief Knowledge Officer" and: i) provide space, structures, and opportunities for identifying, consolidating and curating the co-created knowledge; ii) monitor the process and assess its coherence with LENSES objectives; iii) ensure that participation and gender issues are adequately taken into account; iv) provide incentives to encourage and reinforce those emerging patterns that benefit the project (and discourage those that do not).

LENSES is structured in nine well-defined and interlinked Work Packages (WPs). The main WPs dealing with the management of the project background and foreground of LENSES are: WP1 (Project management); WP2 (Learning and Action alliances); WP3 (LENSES Policy perspectives); WP7 (Nexus operationalization for SDG delivery); WP8 (Implementation of Pilot cases) and WP9 "Pathways to Impact". In particular, the latest WP is critical to the success of the knowledge management processes, because it will embed actions aiming to maximise the impact of LENSES beyond the duration of the project and across scales beyond the project partnership.

The following table reports all LENSES WPs, activities, deliverables and related responsible which are key for the achievement of the goals established within the present LENSES Knowledge Management Strategy.

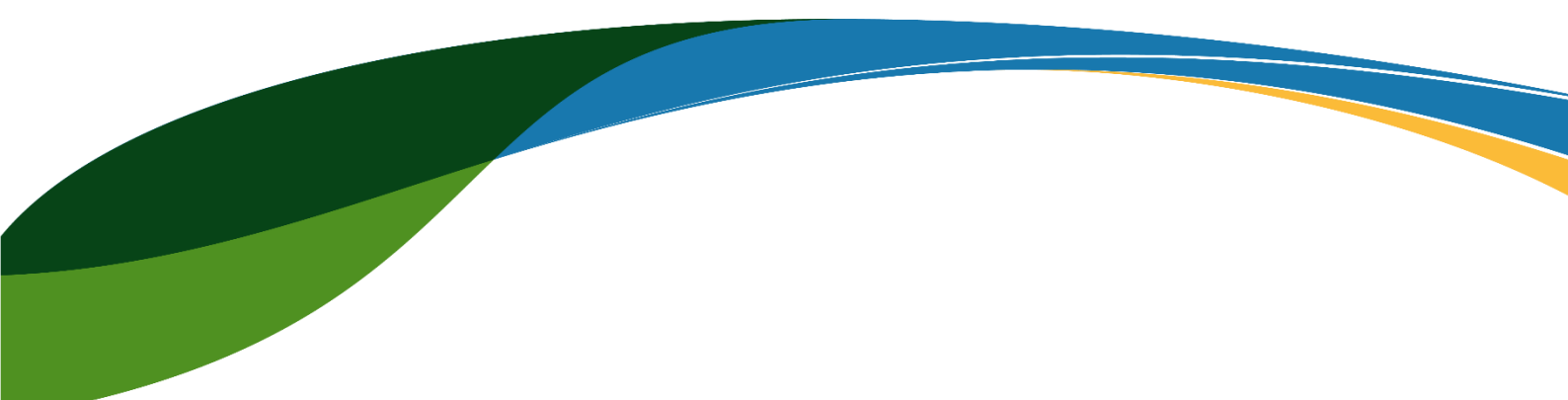
Table 1 List of WPs, activities, deliverables and related responsables key for the achievement of the goals established within the LENSES Knowledge Management Strategy

Code	Deliverable Title	Related Work Package Number	Responsible person
D1.1	Project Management Handbook	WP1:Project Management	Stefano Fabiani (CREA)
D1.2	Innovation Strategy	WP1:Project Management	Stefano Fabiani (CREA)
D1.3	Knowledge Management Strategy	WP1:Project Management	Stefano Fabiani (CREA)
D1.4	Data Management Plan	WP1:Project Management	Stefano Fabiani (CREA)
D2.3	LENSES learning platform	WP2:Learning and Action Alliances	Manuel Bea Martinez (ECOADAPTA)
D3.2	Toolkit for Nexus policy and institutional analysis	WP3: Policy perspectives	Raffaele Giordano (IRSA_CNR)
D4.3	Guidelines for PSDM replication of LENSES approach	WP4:Participatory SDMs	Alessandro Pagano (IRSA_CNR)
D7.1	Data Integration and Visualisation: strategy and results	WP7:Nexus operationalization for SDG delivery	Leon Kapetas (DRAXIS)

D7.5	Nexus-SDG toolkit as a serious game	WP7:Nexus operationalization for SDG delivery	Leon Kapetas (DRAXIS)
D8.5	LENSES synthesis products	WP8:Implementation in Pilot Cases	Anna Osann (AGRISAT)
D9.1	Dissemination and Communication Strategy	WP9:Pathways to Impact	Tiziana Pirelli (CREA)
D9.3	Project website, social media and Serious Game	WP9:Pathways to Impact	Tiziana Pirelli (CREA)
D9.4	Exploitation and sustainability plan (draft)	WP9:Pathways to Impact	Leon Kapetas (DRAXIS)
D9.5	Nexus e-dialogues (#2) and Webinars (#2)	WP9:Pathways to Impact	Tiziana Pirelli (CREA)
D9.6	LENSES Stories (podcasts & short videos)	WP9:Pathways to Impact	Anna Osann (AGRISAT)
D9.7	Business plan (draft and final)	WP9:Pathways to Impact	Juan Diego Restrepo (ETIFOR)

6 References

1. LENSES Grant Agreement nr. 2041;
2. LENSES *Consortium* Agreement;
3. LENSES Communication and Dissemination Strategy.



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