eNaBlS

Education and NBS - bending the curve for biodiversity

DELIVERABLE D2.2

eNaBlS online platform – initial version

CERTH (Apostolos Malamakis, George Banias)

APRIL 2025

Funded by the European Union

eNaBLS

www.enabls.eu

Document information

Title	eNaBLS - **e**ducation and **Na**ture-**B**ased Sol**u**tions: enable **S**ociety to bend the curve for biodiversity (GA No 101135035)
Start - end date	1/1/2024 – 31/12/2026 (36 months)
Project type	Coordination and Support Action
Programme	Horizon Europe – Cluster 6
Funding	2,951,847.33€
Coordinator	University of Hohenheim (UHOH) Dr. Ann-Catrin Fender (anncatrin.fender@uni-hohenheim.de)
Project overview	**eNaBLS** will set the basis of networking and collaboration to promote, embed and unfold Nature-based Solutions (NBS) concepts and approaches within universities and vocational schools, the professional sphere and society at large through transdisciplinary dialogue. eNaBLS envisions the creation of 7 Living Labs (DE, NL, FI, AT, LT, EL, CZ), incorporating all 'voices' and leaving no one behind. The goal is to enable society to bend the curve for biodiversity by mainstreaming both NBS and biodiversity in higher education and Technical and Vocational Education & Training (TVET). The ultimate objective is for eNaBLS to contribute more generally to i) the advancement of a Nature Positive society through the necessary transformative change of communities, business models and lifestyles, and, specifically, ii) put biodiversity and climate on the path to recovery responding to the objectives of the EU biodiversity strategy for 2030 and the EU climate adaptation strategy.

Consortium

UNIVERSITÄT HOHENHEIM
WAGENINGEN UNIVERSITY & RESEARCH
UNIVERSITY OF EASTERN FINLAND
BOKU UNIVERSITY
VYTAUTAS MAGNUS UNIVERSITY
ICA Association for European Life Science Universities
3s
IDEA training
CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS
FOCUS strategic thinking consultants
BIO EAST HUB

info@enabls.eu

@enabls.eu @enabls-eu @eNaBlS_eu @eNaBlS_eu @eNaBlS-eu

Document Information

Document ID	D2.2		
Title	eNaBlS online platform – initial version		
Work Package	WP2 - STRUCTURING: Providing support to Living Labs throughout the eNaBlS lifetime		
Due Date	30/04/2025	**Delivery date**	30/04/2025
Dissemination Level	PU-fully open		
Partner Responsible	CERTH		
Main Authors	Apostolos Malamakis - CERTH George Banias - CERTH		
Contributors			

Peer Reviewers

Reviewer 1	Dora Psoma - IDEA
Reviewer 1	Julia Fellinger – 3s
Coordinator	Ann-Catrin Fender – University of Hohenheim (UHOH)

Document History

Version	Date	Main Modifications	Author(s)
0.1	02/02/2025	Deliverable structure	CERTH
0.2	15/03/2025	Enhanced structure and detailed operational model	CERTH
0.3	27/04/2025	Oppla provided structure of Chapters 4 and 5	CERTH
0.4	29/04/2025	Feedback from internal review process was added	CERTH
1.0	30/04/2025	Final version ready for submission	CERTH

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Table of Abbreviations

Abbreviation	Description
D	Deliverable
WP	Work Package
NBS	Nature Based Solutions
VET	Vocational Education and Training
TVET	Technical and Vocational Education and Training
HE	Higher Education
WIA	Whole Institution Approach
API	Application Programming Interface
UI	User Interface
WCAG	Web Content Accessibility Guidelines

Executive Summary

Deliverable D2.2 documents the design, development, and launch of the initial version of the eNaBlS online platform—an integral component of the eNaBlS project's strategy to promote Nature-Based Solutions (NBS) across educational, policy, and research domains. The platform serves as a digital knowledge hub and dissemination tool that enhances the visibility, accessibility, and longevity of the project's outputs. This deliverable presents the platform's objectives, technical and operational model, content, functionalities, and implementation timeline.

The platform has been developed as a dedicated microsite within Oppla (www.oppla.eu), Europe's largest online community focused on Nature-Based Solutions. This integration offers strategic benefits, including permanent archiving, zero long-term maintenance costs, and access to a large audience of NBS practitioners, researchers, and policymakers. The updated Oppla platform is based on Drupal 10.4.6, an open-source, secure, and modular content management system, allowing for adaptability, stability, and high levels of interoperability with other EU knowledge systems.

The eNaBlS microsite is accessible through https://oppla.eu/enabls and offers user-centric functionalities tailored to the project's diverse stakeholder base. These include two core content libraries, the Repository and TVET Curricula, dedicated pages for the project's seven Living Labs and administrative features for content moderation and platform management. All content is categorized using Oppla's standardized taxonomy system to enhance searchability and usability.

A core strength of the platform lies in its foundation on user needs. A targeted consultation gathered user stories from project partners, structured using the "As a [who], I want [what], because [why]" model. These responses informed the design of the platform, resulting in a focus on simplicity, accessibility, intuitive navigation, and strong metadata structuring. Key user requests such as improved content findability, streamlined content submission workflows, and visual clarity were translated into specific features and interface decisions.

The operational model provides clear role definitions for three user types: Administrators (who manage structure and content), Contributors (who can upload and manage their own materials), and General Users (who can access all public content without login). Content creation is facilitated through intuitive webforms that support images, metadata tagging, and documentation uploads. A moderation system ensures quality control and relevance before public dissemination. Validated resources are made visible across the broader Oppla network and beyond through integration with APIs and promotion via newsletters and social media. Design elements, such as tailored section banners created by project partner FOCUS, enhance navigation and brand consistency. The platform is fully mobile-responsive and tested across devices and browsers.

The initial version of the platform includes curated content from WP1, T2.3, T2.4, and T3.2, including high-quality policy documents, educational materials, NBS case studies, and strategic outputs such as curricula. A planning tool in Mural was used to determine which sections and types of content would be activated for the initial launch. The platform will be continuously updated in alignment with future deliverables and stakeholder input, maintaining relevance throughout and beyond the project lifecycle.

1 Introduction

Addressing the global biodiversity crisis necessitates collaborative, informed, and coordinated action across multiple societal sectors, ranging from education to research and professional practice. eNaBlS aims explicitly at enhancing European institutional capacities to integrate Nature-Based Solutions (NBS) effectively into Vocational Education and Training (VET) and Technical and Vocational Education and Training (TVET) curricula, Higher Education (HE) and practical applications. To accomplish this goal, an essential element is establishing a robust, fully accessible and user-friendly digital infrastructure that serves as a centralized repository. This infrastructure is the eNaBlS online platform, designed to enable the project's consortium to engage and disseminate critical information produce throughout the project effectively.

Deliverable 2.2 details the initial launch phase of the eNaBlS online platform, providing a comprehensive description of its functionalities, operational model, and the specific content it initially hosts. Scheduled to become operational by the end of April 2025 (project month 16), the platform is envisioned not merely as a static repository but as a dynamic, evolving space aligned closely with the project's progression. It will facilitate consortium interactions, support knowledge exchange, and disseminate research and educational outcomes extensively.

To optimize the platform's effectiveness and long-term visibility, the eNaBlS consortium, after consultation with the Project Officer, has established a strategic partnership with Oppla (www.oppla.eu), a renowned community and repository specializing in NBS and biodiversity-related initiatives. Leveraging this partnership, the eNaBlS platform will be developed as a dedicated microsite within the newly enhanced Oppla digital environment, which itself is scheduled for a full launch in early Q2 2025. This integration significantly benefits the project by providing immediate access to a comprehensive set of pre-built digital tools, ensuring rapid development, scalability, and efficient long-term management.

The new Oppla platform presents an advanced technological landscape featuring innovative functionalities. Central to this new digital environment is the concept of software components. These are modular, ready-to-use functionalities that can be seamlessly combined to create customized websites, collaborative workspaces, and specialized online environments tailored precisely to a project's unique requirements. Through the utilization of these components, Oppla ensures that the eNaBlS microsite development proceeds more swiftly and efficiently compared to traditional website development approaches, thereby significantly reducing the overall build and deployment time.

The Oppla microsite integration brings multiple strategic advantages. Firstly, it connects the eNaBlS project directly to Oppla's established community, which comprises over 5,000 engaged members, more than 500 curated products, and 600 documented case studies. This established community presence will substantially amplify the project's visibility, fostering wider stakeholder engagement and enhancing the impact and reach of eNaBlS-generated content. Secondly, the integration guarantees long-term sustainability beyond the project duration, offering a reliable solution for continuous hosting, maintenance, and enhancement of the eNaBlS community resources. Last, the interoperability of Oppla through its advanced Application Programming Interface (API) supports seamless sharing and integration of eNaBlS content with other digital platforms and projects across Europe and globally. This interconnectedness ensures that the resources developed by the eNaBlS consortium can easily contribute to broader biodiversity and NBS communities.

The platform’s content, initially populated from the mapping activities completed under Work Package 1 (WP1) and tasks T2.3, T2.4, and T3.2, will encompass an extensive range of resources. This content includes existing educational curricula related to biodiversity and NBS from eNaBlS partner universities and TVET institutions.

Crucially, the eNaBlS online platform will also feature dedicated sections focused on innovative TVET and skill development programmes specifically designed by the consortium. It will document and

disseminate the outcomes of transdisciplinary dialogues focused on developing holistic university curricula, encompassing the Whole Institution Approach (WIA), a systemic method designed to integrate sustainability comprehensively within educational institutions. Moreover, the platform will showcase collaborative schemes aimed at curriculum development, networking opportunities, and strategic operational objectives developed by the consortium for upcoming project phases.

2 Platform Objectives and Scope

The eNaBlS online platform is a cornerstone of the consortium's overarching strategy to enhance institutional capacity across Europe for mainstreaming Nature-Based Solutions (NBS) in education, research, policy, and practice. As a dynamic, open-access digital environment, the platform serves as a central repository and collaborative hub to engage project partners, external stakeholders, and broader target audiences. The platform's operational model responds to pressing biodiversity and sustainability challenges by strengthening the visibility, accessibility, and usability of knowledge and tools that support transformative education and systemic action through NBS.

2.1 Main objectives of the eNaBlS online platform.

The eNaBlS platform has been developed with a set of clear, interlinked objectives that support both the internal coordination of the consortium and the broader external dissemination of results. These objectives reflect the strategic goals of Work Package 2 (WP2) and are informed by user needs and priorities captured through dedicated consultation activities. They meant to:

1. *Serve as a shared repository of curated resources.* The platform is designed to function as a centralized digital repository hosting high-quality, curated resources generated by the eNaBlS project and related initiatives. These include policy documents, curricula, standards, case studies, and outputs from Work Packages 1, 2, and 3. This objective ensures that relevant content is made easily accessible to project partners and external users, and that it is preserved and updated over time.
2. *Support the integration of NBS into education and training.* A core aim of the platform is to facilitate the development and dissemination of educational resources that embed NBS in learning settings. Through sections dedicated to curricula and skills development programmes, the platform acts as a vehicle for mainstreaming sustainability insights into vocational, technical, and higher education systems across Europe.
3. *Enable effective internal coordination and external outreach.* The platform plays a dual role in serving both internal project coordination and external stakeholder engagement. Internally, it supports communication among partners, facilitates content sharing, and promotes collaborative activities such as the development of TVET materials and Living Lab planning. Externally, it enables the dissemination of results, promotion of events, and interaction with diverse audiences, from researchers and educators to policymakers and citizens.
4. *Ensure long-term visibility and sustainability of project results.* By partnering with Oppla, the platform is integrated into a well-established European digital ecosystem that offers long-term hosting, discoverability, and interoperability. This objective ensures that eNaBlS resources remain available and visible beyond the project's funded period, enhancing its legacy and impact. The eplatform is developed with Web Content Accessibility Guidelines (WCAG) 2.2 in mind. WCAG2.2 covers a wide range of recommendations for making web content more accessible.
5. *Foster knowledge exchange and stakeholder networking.* The platform fosters an open and participatory space where stakeholders can connect, exchange ideas, and build synergies. It offers thematic access points and user-friendly navigation that encourage cross-sectoral collaboration, enabling users to explore and contribute to the evolving conversation around NBS and biodiversity resilience.
6. *Demonstrate the Whole Institution Approach (WIA).* Through its structured content, the platform demonstrates how sustainability and biodiversity principles can be embedded in institutional practices and curricula. It showcases strategies, examples, and operational

objectives developed within the eNaBlS project for integrating the WIA into university and TVET settings, thus functioning as both a knowledge base and a change agent toolkit.

These objectives are not static but dynamic, growing in tandem with the project's evolution. As additional data and outputs are generated, and as new users engage with the platform, its functionalities and content will be enriched and refined.

2.2 Targeted Users

The eNaBlS online platform is purpose-built to serve a diverse community of users with different backgrounds, roles, and informational needs. Each user group benefits from tailored content and functionalities that ensure the platform is both inclusive and effective in meeting their expectations.

1. *Educators and Trainers.* These users include teachers, trainers, curriculum developers, and education managers from VET, TVET, and HE institutions. The platform supports them with model curricula, guidelines, and open educational resources that help integrate NBS into teaching. The design prioritizes ease of access.
2. *Learners and Students.* Students and young professionals interested in NBS and biodiversity are encouraged to explore the platform. It provides accessible, structured content that supports formal education as well as self-directed learning. The platform's design ensures usability and engagement for this digitally fluent audience.
3. *Policymakers and Public Authorities.* Local, regional, and national policy actors can use the platform to access policy briefs, guidance materials, and case studies that inform the development of evidence-based strategies for biodiversity and NBS. These users benefit from a repository that connects education with policy action.
4. *Researchers and Scientific Communities.* The platform enables academic and applied researchers to access datasets, literature, and case-based insights. It supports scholarly inquiry and cross-project synthesis, particularly through its search and filtering capabilities, timeline features, and potential for data visualization.
5. *Civil Society and Citizens.* Informed citizens and community leaders involved in sustainability projects can find accessible summaries, educational tools, and event listings. The platform helps demystify complex topics and promotes civic engagement with NBS and environmental education.
6. *EU Project Consortia and Networks.* Other EU-funded initiatives and networks focusing on biodiversity, education, or sustainability can use the platform as a reference point for alignment, collaboration, and co-dissemination. Through Oppla's integration, cross-project visibility and mutual reinforcement are facilitated.

3 User Stories

User stories serve as foundational components in the design and development of the eNaBlS online platform, providing clear insights into the requirements and expectations of different stakeholders. CERTH, as the responsible partner for the platform development (D2.2), conducted a consultation with the eNaBlS project partners to collect these user stories. The consultation has been performed through the eNaBlS mailing list and the responses received were 13 in total. The consultation divided responses into two distinct categories:

- the needs of project partners and
- the needs of external stakeholders and other users.

This analysis synthesizes the collected responses, providing a detailed narrative on identified priorities and implications for platform development. The collection of responses was made through the internal mailing list of eNaBlS consortium and they were uploaded into a dedicated Mural (app.mural.co) created by the Oppla team.

3.1 Analysis of Project Partner Needs

The analysis of partner responses highlights several critical functionalities desired by project participants, emphasizing ease of use, efficient information retrieval, effective dissemination, and comprehensive administrative control. In Figure 1 the Mural board used to collect the responses is depicted.

Figure 1. Partner responses on what do the need from the eNaBlS eplatform.

Firstly, partners expressed a preference for **simplicity in uploading and organizing content**. One partner specifically mentioned the necessity of uploading good NBS practices related to Higher Education Institutions (HEIs) to promote results effectively from Work Package 1 (WP1). This functionality underscores the partners' goal of disseminating project outcomes widely and efficiently. Thus, it is essential to ensure the platform offers intuitive uploading processes, clear categorization, and tagging mechanisms that facilitate easy content classification and retrieval.

The **accessibility of policy recommendations** emerged as another significant requirement. Partners highlighted the need for making these resources readily available both within and outside the eNaBlS community, reflecting the broader dissemination goals of the project. The platform should therefore incorporate clear pathways and prominently featured sections dedicated explicitly to policy documents, ensuring seamless accessibility for various interested stakeholders.

A recurrent theme among partner responses is t**he demand for effective information organization and retrieval systems**. Multiple partners emphasized the necessity of a robust search functionality, emphasizing the need for swift, straightforward access to content. Given the partners' time constraints, such functionality is critical to ensure the efficient operation of the project. Implementing advanced search features, including filtering by keywords, themes, dates, or types of content, can address this need effectively.

Visibility and accreditation of uploaded content were also noted as important. Partners articulated the importance of clearly attributed authorship and sources, which enhances transparency and recognition of individual and institutional contributions. This feature not only ensures proper crediting but also fosters accountability and trust within the consortium. The platform design should incorporate mechanisms for transparent authorship display, facilitating visibility and acknowledgment.

Additionally, partners highlighted the significance of **administrative flexibility and responsiveness**. Specifically, the capability for multiple administrators to have access emerged as a key operational requirement. This need addresses practical concerns about administrative continuity, particularly in situations demanding urgent content management or troubleshooting. Consequently, ensuring the platform supports multiple administrative roles and streamlined user permissions is essential to maintain consistent operational effectiveness.

The partners also underlined the necessity of **robust integration capabilities with other digital repositories and websites**, including the project's own website and other generic repositories. This integration is aimed at enhancing visibility and findability of project outcomes, allowing efficient dissemination and reducing redundancy in content uploads across multiple platforms. Hence, platform development should prioritize interoperable design, API compatibility, and straightforward linking capabilities.

A **visually appealing, intuitive user interface** was noted by several partners as critical for efficient interaction and content contribution. Partners recognized the role of a clear and intuitive design in facilitating quick navigation and straightforward content discovery. Therefore, user experience design should emphasize intuitive layout, logical navigation structures, and a visually engaging interface to enhance usability and engagement among consortium members.

3.2 Analysis of External Stakeholders and Other Users' Needs

Responses from external stakeholders and general users provided a complementary set of insights, primarily highlighting simplicity, clarity, advanced research capabilities, and interactive functionalities. In Figure 2 the Mural board used to collect the responses is depicted.

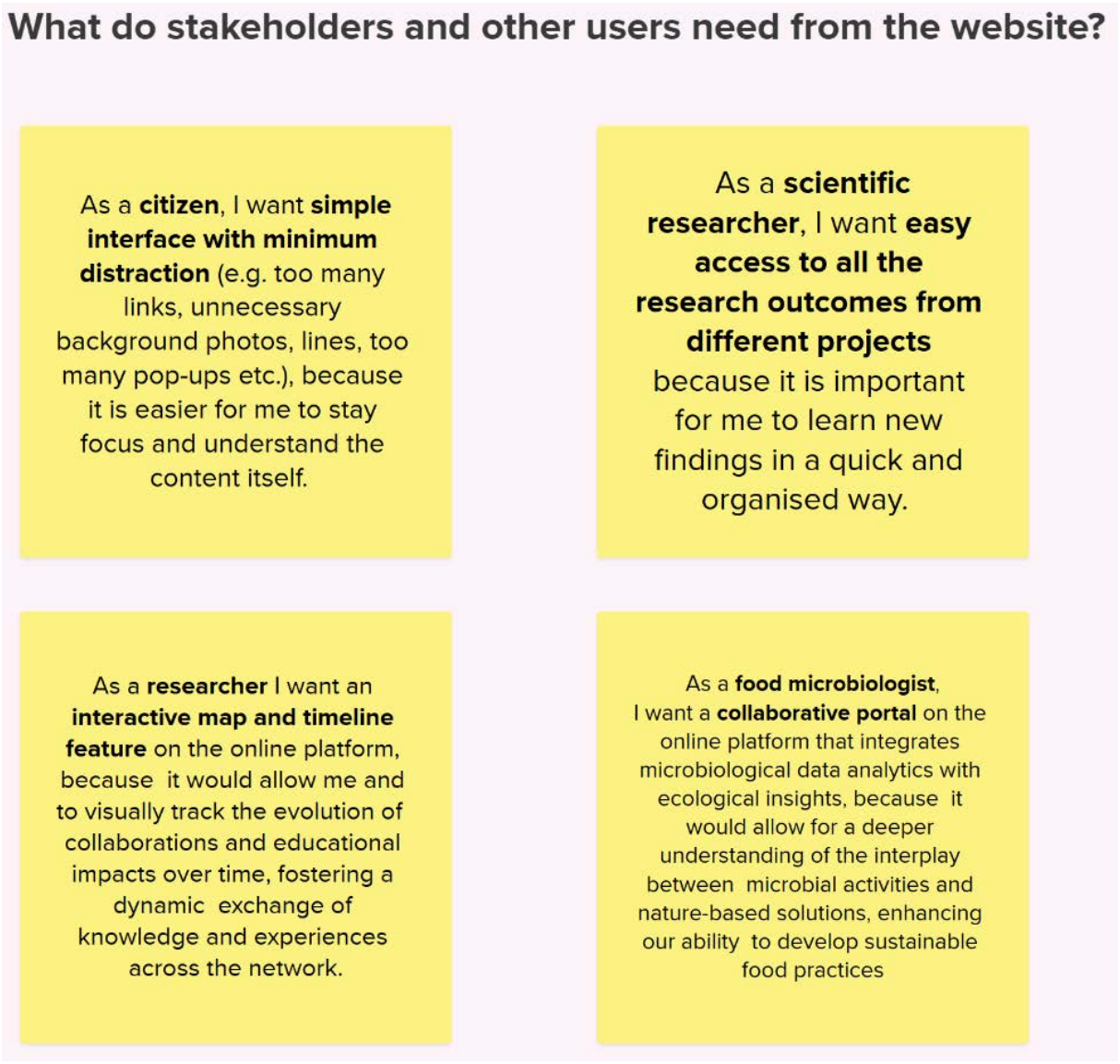


Figure 2. Responses from partners answering as stakeholders and other users on what do the need from the eNaBlS eplatform.

The eNaBlS partners responding as citizen users emphasized simplicity and minimalism in design as central to their experience. They specifically identified distractions such as excessive hyperlinks, unnecessary visual elements, and intrusive pop-ups as detrimental to their user experience. This suggests that the platform should adopt a minimalist yet functional design strategy, prioritizing content clarity and ease of use. Providing citizens with focused, streamlined interactions ensures higher engagement and content comprehension, crucial for meaningful public participation and awareness-raising.

Researchers, on the other hand, highlighted the need for advanced research functionalities and comprehensive access to diverse research outcomes. Their requirements explicitly indicate the necessity for a centralized repository that integrates results from multiple projects. Researchers emphasized the value of accessing a broad spectrum of research outcomes swiftly and efficiently. Therefore, the platform must accommodate a comprehensive, easily navigable library or database, enriched with advanced filtering and search capabilities to serve the research community effectively.

The demand for interactive visual tools was also prominent among researcher responses, particularly in relation to mapping and timeline features. Researchers articulated the benefits of visually tracking the evolution of collaborations, educational impacts, and overall project development. Interactive features, such as dynamic maps and timelines, will significantly enhance users' abilities to comprehend complex temporal and spatial relationships, supporting in-depth analysis and collaboration across the eNaBlS network.

Moreover, a unique yet specific user story emerged from food microbiologists, who sought a specialized collaborative portal integrating microbiological data analytics with ecological insights. Such specialized features indicate the platform's potential to serve niche scientific communities by providing customized data analysis capabilities. Addressing these specialized needs through modular, tailored functionalities can enhance the platform's utility, attracting a diverse and engaged user base from specialized scientific fields.

3.3 Implications for Platform Development

Synthesizing these diverse user stories into practical design considerations highlights several critical implications:

- **Simplicity and Usability.** Prioritizing intuitive, minimalist interfaces to facilitate easy navigation, content discovery, and efficient interactions.
- **Comprehensive and Advanced Search Capabilities.** Essential to swiftly locate relevant content, especially valuable to time-constrained partners and researchers.
- **Transparent Attribution and Visibility.** Ensuring clear authorship and accreditation to enhance trust, accountability, and institutional recognition.
- **Administrative Flexibility and Robustness.** Allowing multiple administrator access to ensure continuity, responsiveness, and efficient management.
- **Interactivity and Visual Analytics.** Integrating dynamic mapping, timeline tools, and specialized portals for comprehensive data visualization and analysis.
- **Integration and Compatibility.** Emphasizing interoperability with other platforms and repositories to enhance content dissemination, avoid redundancy, and maximize the visibility of eNaBlS outcomes.

By closely aligning platform development with these articulated needs, CERTH and the eNaBlS consortium will ensure a highly functional, user-centric digital environment that robustly supports project objectives and fosters meaningful stakeholder engagement.

4 Overview of Platform Functionalities

4.1 Key Benefits of Oppla Integration

The eNaBlS microsite is fully integrated into Oppla as a "Group," leveraging a new service model developed by Oppla. This model allows projects to manage their own websites, workspaces, and online communities within the larger Oppla platform—the world's largest community focused on Nature-based Solutions (NbS). This strategic integration offers multiple significant advantages, ensuring the eNaBlS platform is sustainable, visible, and interconnected.

First, the integration ensures the permanent archiving of eNaBlS resources within the EU Repository of NbS. This includes the ability to share resources with external websites and platforms using the Oppla Application Programming Interface (API), enhancing cross-platform dissemination and visibility. The API acts as a software intermediary that enables secure and standardized sharing of content across multiple digital environments.

Second, the microsite benefits from high visibility and accessibility. Through Oppla's established community of over 5,000 members and a broad network of projects and initiatives, the eNaBlS outputs reach a wide range of stakeholders, increasing their dissemination impact and potential uptake by educators, policymakers, researchers, and citizens.

Third, the integration model results in no long-term hosting or maintenance costs for the eNaBlS consortium. The microsite benefits from continuous hosting, technical support, and software updates provided by Oppla without incurring additional expenses beyond the initial setup fee. This ensures the long-term sustainability of the platform, securing its role as a permanent repository and dissemination tool beyond the project's funded period.

4.2 Summary of eNaBlS Microsite Functionalities

Through the Oppla Groups system, the eNaBlS microsite has access to a wide range of functionalities, many of which are already active in the initial platform build. Additional functionalities are available and can be activated as the project evolves in response to emerging needs identified by partners and end-users. The current core functionalities are described below.

4.2.1 Resource Libraries

The eNaBlS microsite incorporates two key resource libraries:

- Main Repository: Hosts critical materials gathered through mapping and analytical activities of WP1, T2.3, T2.4, and T3.2. It includes policy documents, standards, reports, guidelines, transdisciplinary dialogue outcomes on Whole Institution Approaches (WIA), and research agendas outlining gaps and future directions.
- TVET Curricula Database: Focused specifically on educational resources related to Technical and Vocational Education and Training (TVET) programmes. It provides access to online courses, curricula models, and educational frameworks supporting NBS.

Both libraries are built using Oppla's standardized "Resources" system, ensuring structured categorization based on keywords, ecosystems, global goals, and other metadata. This system improves the findability and interoperability of the content, enabling users to search efficiently and even share resources beyond Oppla via the API.

4.2.2 eNaBlS Case Studies (Living Labs)

The microsite features a dedicated system for presenting the seven eNaBlS Living Labs established in Germany, the Netherlands, Finland, Austria, Lithuania, Greece, and the Czech Republic. Each case study entry highlights the Lab's activities, objectives, and outcomes related to enhancing education on NBS and biodiversity conservation. As Living Lab activities evolve, these entries will be expanded to include detailed case studies, multimedia elements, and cross-references to relevant resources in the Repository and TVET sections.

4.2.3 Microsite Administration, Management, and Membership

The eNaBlS consortium maintains full administrative control over the microsite:

- Administrator Accounts: Designated members have full administrative rights, enabling them to moderate content, create new pages, approve members, and manage events.
- Member Accounts: Initially restricted to project partners, member accounts allow users to submit content, receive platform notifications, and participate in platform-related activities. In future phases, membership may be expanded to external stakeholders to foster a wider community of practice.

This structure ensures administrative flexibility, operational security, and opportunities for participatory engagement.

4.2.4 Integration of "Related Content" from Other Projects

The Oppla integration allows eNaBlS microsite administrators to display "related content" from other projects hosted on Oppla:

- Related resources can be included in the TVET Curricula or Repository to enrich the offering.
- Automation features allow for the dynamic inclusion of new relevant content as it is uploaded on Oppla, with options for moderation to maintain thematic relevance.

This feature ensures that the eNaBlS platform remains updated and enriched beyond the life of the project, supporting long-term relevance and dynamism.

4.2.5 Additional Functionalities Available

While not all features are activated at the initial launch, the microsite architecture includes additional tools that can be deployed as needed:

- Events Calendar: A centralized space to advertise webinars, Living Lab events, workshops, and consortium meetings.
- News and Articles Section: A space for publishing project news, blog posts, articles, and media highlights.
- Webforms and Surveys: Tools for user feedback collection, consultations, event registration, and targeted surveys.

These functionalities provide the flexibility to scale and adapt the platform in alignment with evolving project activities and stakeholder needs.

5 Operational Model

The operational model of the eNaBlS online platform builds upon the robust digital architecture and community management framework of the Oppla platform. Designed for long-term scalability, openness, and ease of use, the microsite leverages both the technical sophistication of the underlying infrastructure and a structured user management system to support its evolving content and collaborative needs. This chapter outlines the microsite's technical foundation, user roles and permissions, and the workflows established for content creation, validation, and dissemination.

5.1 Summary of Microsite Technical Infrastructure

The eNaBlS microsite is built on the Oppla platform using Drupal (version 10.4.6), a mature and widely used open-source content management system (CMS). Drupal's modular and flexible architecture provides a powerful backbone for knowledge management platforms such as Oppla. Its features directly support the aims of the eNaBlS project by enabling structured content development and collaborative management. Key technical benefits of the Drupal-based system include:

- Open-source licensing: Ensures transparency and freedom for future adaptation, redistribution, and unrestricted usage of the software.
- Modular architecture: Supports the addition of new features, tools, or content types, responding flexibly to the project's evolving requirements.
- User-friendly content management: Enables non-technical users—such as educators and researchers—to manage content independently via intuitive web interfaces.
- Strong security protocols: Includes built-in security features supported by a large open-source community, ensuring prompt resolution of vulnerabilities.
- Interoperability: Drupal's compatibility with European Commission systems and other institutional digital infrastructures enhances potential integration with broader platforms.

The eNaBlS microsite benefits from full integration into Oppla's overarching system. All routine technical maintenance tasks, including security updates, patches, and deployment of new functionalities, are centrally managed by Oppla. This shared infrastructure ensures consistency and technical reliability without burdening project partners with software management.

New functionalities developed within Oppla Groups will automatically become available to the eNaBlS microsite. This includes features currently under development or added in response to other projects' needs—further reinforcing the long-term value of hosting the microsite within a dynamic digital ecosystem.

Importantly, the microsite ensures complete ownership and control of content by contributors. All intellectual property remains with the originators, and content can be exported at any time upon request in widely used formats such as .csv or XML. Contributors also benefit from the ability to disseminate content externally via the Oppla API, allowing for seamless integration into other websites, tools, or repositories.

5.2 Roles and Responsibilities

The eNaBlS microsite incorporates a tiered user system to ensure structured collaboration and secure content management. This system includes three primary types of user accounts, each with clearly

defined roles and permissions described in the following chapters. By employing this access model, the microsite balances transparency and inclusivity with appropriate controls over quality assurance and technical security. It ensures that both internal collaboration and external dissemination can operate smoothly and sustainably.

5.2.1 Site Administrator

- Holds full editorial and operational control over the microsite.
- Responsible for moderating submitted content, managing users, creating new pages, configuring site structure, and maintaining consistency.
- Acts as the main liaison with the Oppla support team to request technical adjustments or resolve platform issues.
- Coordinates the rollout of new features and activates additional functionalities when needed.

5.2.2 Site Contributor

- Includes verified users—primarily eNaBlS project partners—who can submit, edit, and manage their own content.
- Contributors may create resources, case studies, and other page elements using standard Oppla templates.
- Accounts are granted through a simple verification process on the Oppla website.
- Once verified, contributors can also engage with other Oppla-hosted Groups, supporting cross-project collaboration within the wider NBS community.

5.2.3 Site User (General Visitor)

- The platform is open access; general users do not need an account to browse or download public-facing content.
- Users can access resource libraries, curricula, case studies, and events without logging in.
- Optional sign-up allows users to receive newsletters and submit news or events if these features are activated in the future.
- This tier of access supports broad public engagement and aligns with the project's dissemination objectives.

5.3 Workflow for Content Creation, Uploading, Validation, and Dissemination

The content workflow on the eNaBlS microsite is designed to be simple, efficient, and inclusive. It empowers project partners to contribute content directly while safeguarding editorial standards through an established moderation system. Through this structured yet flexible workflow, the eNaBlS platform ensures that content flows efficiently from creation to dissemination. It supports quality assurance, encourages collaboration, and maximizes the visibility and usability of eNaBlS outputs.

5.3.1 Content Creation and Submission

All core content types—resources, case studies, events, and web pages—are created using standard Oppla webforms. These forms:

- Require no technical expertise to complete.
- Include fields for main text, document uploads, images, and metadata (e.g. keywords, topic tags, geographic focus, target audiences).
- Ensure consistency across all Oppla Groups by following a shared template structure.

Contributors create draft content which is held in a moderation queue. This enables review and collaborative refinement before public dissemination.

5.3.2 Moderation and Validation

Administrators review submitted content to ensure clarity, relevance, and adherence to project branding and terminology. During this step, administrators may suggest revisions or update metadata fields to improve searchability and coherence. Once approved, content is published on the microsite and, if appropriate, pushed to the wider Oppla repositories.

5.3.3 Dissemination and Sharing

Validated content is automatically indexed in the main Oppla platform, making it accessible to all Oppla users. Additionally, it can be:

- Shared via API: Resources can be embedded into other websites or digital tools.
- Promoted internally: Related content can appear on other Oppla project microsites.

Disseminated externally: High-quality content from eNaBlS may be featured in the Oppla newsletter “Outline” and on Oppla’s social media channels, including LinkedIn and Instagram.

6 Platform Structure and User Navigation

The development of the eNaBlS online platform structure was systematically guided by insights from extensive consultations with project partners and stakeholders, translated into practical user stories, and reinforced by technical consultations with Oppla.

6.1 Proposed sitemap and navigation structure.

The finalized structure represents a strategic alignment between user expectations and advanced digital capabilities provided by the Oppla microsite components. Each section of the platform, carefully articulated in the planning process, directly addresses specific user needs and enhances the overall user experience, ensuring a robust, engaging, and efficient digital environment. The sections of the eplatform that were decided after the design procedure were:

- Home
- About
- TVET Curricula on NBS
- Repository
- Living Labs

6.1.1 Home/Dashboard

The home/dashboard serves as the introductory portal, integrating the most critical functionalities required by users. It is designed to provide immediate access to the latest content and essential navigation options. From the analysis of user stories, simplicity and clarity emerged as primary needs among stakeholders, especially citizens and busy project partners. Therefore, the home/dashboard integrates minimalistic design principles with prominent and clear navigation links to key platform sections. It features updates, recent additions, and shortcuts to the repository, TVET curricula, and news, therefore directly addressing user preferences for efficiency and clarity.

Figure 3. Banner created for the Home section of the eplatform.

6.1.2 About Section

The 'About' section offers transparency and clarity concerning the project's structure, partnerships, and scope, directly responding to user stories emphasizing visibility and accreditation. This area hosts

a comprehensive list of project partners, showcasing each partner's contributions clearly and transparently, thereby enhancing credibility and visibility as explicitly requested by consortium members. Additionally, a project team photo and direct links to the project's main website and social media channels address partner requests for enhanced findability and interconnectedness. This integration facilitates broader dissemination and promotes the project's wider reach, reinforcing cross-platform engagement.

Figure 4. Banner created for the About section of the eplatform.

6.1.3 TVET Curricula on NBS

Addressing partner and educator needs articulated in the user stories, this section collates existing university and TVET curricula in their available language, providing curated external links to exemplary practices. It also highlights new curricula and skill development programmes crafted by the consortium. Project partners specifically identified the need for a simple, accessible, and clearly structured repository for educational resources to streamline their teaching preparation and delivery processes. Consequently, this section emphasizes straightforward categorization and quick access to relevant educational content, allowing educators efficient retrieval of teaching resources.

Figure 5. Banner created for the TVET Curricula on NBS section of the eplatform.

6.1.4 Repository

The repository is a foundational feature addressing explicit user demands for a centralized, accessible hub of diverse informational resources. It hosts critical documents including pertinent policy papers, authoritative reports from organizations like the EU, IUCN, IPCC, and IPBES, and identified relevant EU-funded projects. The repository also incorporates outcomes from specific tasks (T2.3, T2.4, and T3.2), presenting systematically organized good practices and mapping results. The design of the repository addresses multiple user requirements by providing advanced search capabilities, including keyword

filters, thematic categories, and clear attribution of sources—requirements repeatedly emphasized in partner user stories. By incorporating these functionalities, the platform ensures stakeholders and researchers can efficiently access precise information, aligning closely with their expressed expectations.

Figure 6. Banner created for the Repository section of the eplatform.

6.1.5 Living Labs

The Living Labs section is strategically designed as an interactive hub reflecting the user stories' emphasis on engaging, dynamic user experiences. It serves as the primary digital space to document, track, and interact with ongoing practical implementations and collaborative innovations developed within the project. Project partners specifically requested a dynamic, visually appealing interface facilitating effective collaboration and dissemination. Hence, this section integrates interactive mapping tools, project timelines, and multimedia content, fostering enhanced interaction, clear visualization of project impacts, and dynamic engagement from diverse stakeholders, particularly researchers and educators.

Figure 7. Banner created for the Living Labs section of the eplatform.

6.2 Process of Connecting Structure to User Stories Analysis

The structured development of the platform sections was a rigorous process that began by systematically evaluating the collected user stories. Each story was scrutinized to extract clear functional requirements and user preferences. For instance, frequent references to "ease of use," "simplicity," and "clear visibility of resources" directly informed the design of the platform's user interface, navigation paths, and content presentation strategy.

CERTH then conducted a targeted alignment exercise, mapping the derived functionalities from user stories onto Oppla's advanced microsite components. Oppla's component-based digital architecture enabled rapid customization and flexible combination of pre-built features. This modularity not only accelerated development but also ensured that specific user requirements identified in the analysis could be seamlessly integrated into the platform's digital fabric. For example, advanced filtering and search functionalities, a clear preference among project partners and researchers, were readily integrated through existing Oppla search components, directly addressing this articulated user need.

Moreover, strategic discussions with Oppla guided the optimal use of available digital functionalities, aligning each user requirement with practical technological solutions. The outcome was a well-balanced digital structure that blended user-centric design with technical sophistication, ensuring comprehensive satisfaction of diverse user needs—from educators requiring structured, easy-to-access teaching resources, to researchers needing advanced data visualization and analytical tools, and citizens requiring simple, distraction-free access.

Finally, iterative consultation processes with project partners were conducted to refine and validate the initial structure. This participatory design approach allowed immediate feedback loops, ensuring the resulting platform structure and navigation scheme were robustly aligned with stakeholder expectations. Through these consultations, the eNaBlS platform structure was continuously refined, enhancing its functionality, usability, and relevance.

6.3 User interface design considerations

The user interface (UI) of the eNaBlS microsite was designed to reflect the project's core values: accessibility, simplicity, clarity, and inclusiveness. These priorities were consistently highlighted throughout the user story consultation process and were instrumental in shaping the platform's layout, visual identity, and user experience strategy. Oppla's modular microsite architecture enabled a design approach rooted in intuitive navigation and minimal cognitive load. Special attention was given to structuring the interface so that both frequent contributors (such as project partners and educators) and occasional users (such as students, policymakers, and the general public) could easily engage with the platform's content.

In line with accessibility standards, the platform integrates ideas from the WCAG 2.2, ensuring visual clarity, keyboard navigability, and screen reader compatibility. Text is structured using clear hierarchies, headings, and link styles, while color contrasts and legible fonts improve the experience for users. The homepage uses a clean and focused layout with shortcut boxes and banners linking to the five main sections: Home, About, TVET Curricula on NBS, Repository, and Living Labs. This direct entry into core content areas reflects the expectations of busy users who seek immediate access to relevant information without unnecessary scrolling or menu layers. Each section includes a dedicated introductory text block and a banner image, designed in collaboration with FOCUS, that visually reinforces the purpose of the section. These banners not only aid orientation but also establish a consistent and recognisable visual language across the platform. Navigation menus are persistent across all pages, allowing users to move quickly between sections.

Responsiveness across devices was a key consideration. The microsite is fully mobile-adapted and tested across major browsers and screen sizes, enabling engagement from a broad range of users, including those accessing content from tablets or smartphones during field or educational activities.

7 Content of the Initial Version

The content of the initial version of the eNaBlS online platform was carefully selected based on the project's strategic communication objectives and the technical possibilities offered by the Oppla microsite at the time of development. The platform's early content focuses on enabling knowledge exchange, showcasing exemplary practices, and laying a foundation for deeper engagement with a broader audience over the project's lifecycle. As indicated by stakeholder consultations and user story analysis, the most urgent needs related to accessibility, clarity, and educational utility have been prioritized. For selecting the type of content for each eplatform section a planning table has been set up in Mural. A depiction this table can be seen in Figure 8.

Figure 8. Selection table of types of content

7.1 Content Inclusion Criteria

A strategic decision-making process was undertaken to determine which features and materials would be included in the platform's initial launch. Guided by the functionality priorities visualized in the

planning table, only those content types that aligned with both immediate user needs and technical readiness were activated. These include:

- Resources (Curricula and Relevant policy documents/links)
- Case Studies (NBS good practices)
- Events (Living Labs activities calendar)

The content types for "News & Articles", "Related Content (from other projects)", and "Other Content" were deliberately excluded from the initial phase. These will be revisited during later platform development stages as the project matures and more diverse content is generated and curated.

7.1.1 Resources content type

The "Resources" content type serves as a foundational pillar for educational content on the platform. Within this section, two key types of material have been included from the outset:

7.1.1.1 Curricula

The platform highlights relevant Nature-Based Solutions (NBS) educational programmes. A notable addition is the Oppla-hosted resource "Nature-based Solutions in Higher Education" https://oppla.eu/product/32567. This content provides exemplary curricula structures and guidelines in English that support educators in integrating NBS themes into academic syllabi. It aligns directly with project partner needs as captured in user stories: easy-to-navigate, actionable content that supports teaching and capacity-building.

7.1.1.2 Policy Documents and Links

Foundational materials in this category include reports and frameworks that set the stage for understanding NBS from a policy perspective. Two critical resources have been uploaded:

- "Nature-based Solutions and the EU Green Deal: Delivering Green Infrastructure and Biodiversity Gains through the EU Biodiversity Strategy for 2030" https://oppla.eu/product/32566
- "Nature-based Solutions and Standards: Creating a New Knowledge Architecture for Biodiversity and Climate Resilience" https://oppla.eu/product/32586

These entries enrich the platform with internationally relevant insights, which fulfill the project's dissemination goals and meet researcher expectations for high-quality, policy-relevant documentation.

7.1.2 Case Studies content type

The "Case Studies" content features good practices and examples collected during the mapping phases of Work Package 1 and Tasks 2.3 and 2.4. This section is particularly valuable for users seeking real-world applications and implementation experiences. The inclusion of these resources addresses one of the main partner-reported needs: showcasing the diversity and effectiveness of NBS in various educational, professional, and ecological contexts.

In alignment with user preferences for interactivity and visual clarity, the platform presents case studies with accompanying summaries, contact points, and thematic tags. While the platform will evolve to include an interactive map and filter features, the initial display focuses on clearly labelled listings that support exploratory learning.

7.1.3 Events

An upcoming events calendar is featured under the "Events" section. This component supports project transparency and promotes opportunities for interaction between the consortium and the wider community. It is designed to include the Living Labs (LLs) activities calendar, enabling all users to stay informed about pilot initiatives, local workshops, and collaborative sessions hosted by eNaBlS partners.

User stories emphasized the need for a straightforward tool to track upcoming events, particularly among educators and administrative partners who manage multiple engagements. In this initial version, the events calendar includes key dates and relevant links, with plans for gradual integration of registration forms and downloadable agendas.

7.2 Visual and Navigational Enhancements

To ensure each section of the platform offers a cohesive and visually engaging user experience, FOCUS—a key partner in the eNaBlS project—provided tailored graphic banners for each section, conforming to the technical specifications requested by Oppla. These banners enhance the visual identity of the platform and guide users intuitively through its structure.

In addition to these visual elements, the project's full set of partner logos and overall branding guidelines were integrated into the platform, reinforcing the professional identity of eNaBlS and ensuring consistent visual communication. Basic introductory texts were drafted and approved for each website section to orient new visitors and provide immediate clarity about the content and purpose of each area. These texts were designed to reflect the project's language tone and terminology, consistent with the broader dissemination and communication materials.

7.3 A User-Centric Launch

The launch version of the platform not only reflects strategic content selection but also the eNaBlS consortium's commitment to a user-first philosophy. The prioritization of educator-relevant curricula, policy materials, and practice-based resources ensures that the platform meets real-time needs of the project's most active user groups.

Each content piece was reviewed and uploaded with careful attention to source attribution, meta-data quality, and tagging, thereby supporting the platform's long-term goals for searchability and reusability. These choices align with user stories requesting clear accreditation and visibility for contributor work, which are essential for academic and professional recognition.

8 Implementation Timeline and Next Steps

8.1 Timeline of platform launch and subsequent updates.

At the time of the submission of Deliverable 2.2, the Oppla platform is undergoing a critical transitional phase, moving from its development environment to full online deployment. This migration process involves transferring all platform components, including the eNaBlS microsite, from internal development servers to live, production-level hosting. The transition ensures enhanced performance, security, and long-term operational stability for the platform and all associated microsites. In Figure 9 two screenshots of the eNaBlS Oppla microsite eplatform are depicted.

Figure 9. Screenshots of the eNablS Oppla microsite. Home (left) and About (right) tabs are shown.

As the migration progresses, the eNaBlS microsite remains in a preparatory phase, with the foundational structure, initial content, and graphical elements already in place. Full public access to the platform will be enabled once the Oppla migration is finalized. The link to access the platform is **https://oppla.eu/enabls**[1] **.**

Following the public launch, additional updates will be scheduled in alignment with project milestones and emerging needs identified through user feedback and content development under Work Packages 2 and 3. These updates will involve the gradual enrichment of platform sections with new educational resources, case studies, event listings, and collaborative features, ensuring that the eNaBlS microsite remains a dynamic, evolving repository supporting the project's strategic goals.

8.2 Milestones and checkpoints leading to the full functionality of the platform.

The development and launch of the eNaBlS online platform are structured around key milestones and checkpoints to ensure systematic progress toward full operational functionality. The first critical checkpoint is the submission of Deliverable 2.2 on 30 April 2025. This submission marks the official documentation of the platform's initial version, its operational model, and the content structure, ensuring that the project meets its contractual obligations and providing a reference for subsequent development stages.

An important intermittent milestone is the internal introduction of the working version of the platform to eNaBlS project partners, also targeted for 30 April 2025. Through this milestone, project partners will gain early access to the platform, allowing them to familiarize themselves with its structure, functionalities, and initial content. Their feedback will be essential in refining user experience and addressing any outstanding technical adjustments prior to public launch.

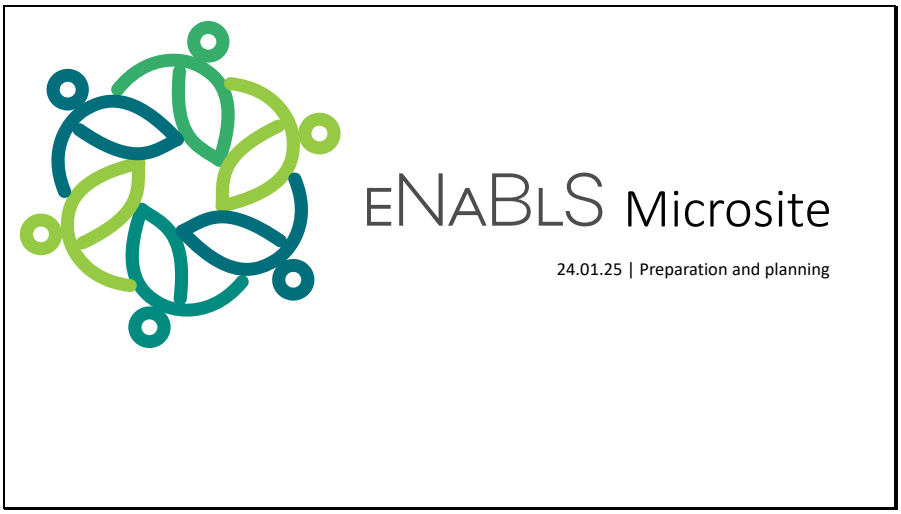
The primary milestone, and a major project achievement, will be the full public launch of the eNaBlS platform during the days after D2.2 submission. This launch will coincide with the completion of Oppla's migration process and the activation of all public-facing functionalities, ensuring that the platform is fully accessible to all targeted users and stakeholders.

[1] Due to the migration of the Oppla development environment to full online deployment, website availability might present shortages in the days following the submission of the deliverable.

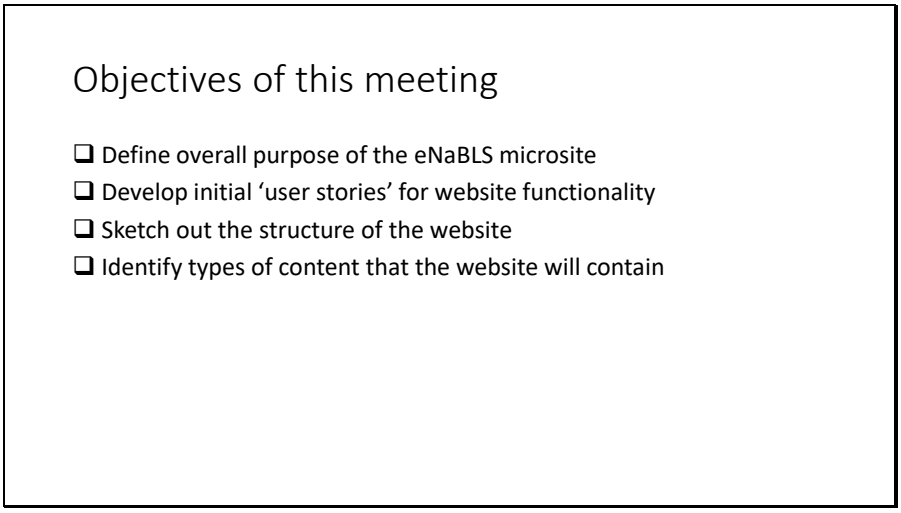
Annexes

Annex 1 – Slides presented by Oppla during preparation and planning meeting on 24/01/2025

Slide 1



Slide 2



Slide 3

oppla

Slide 4

Oppla is a **community**

Slide 5

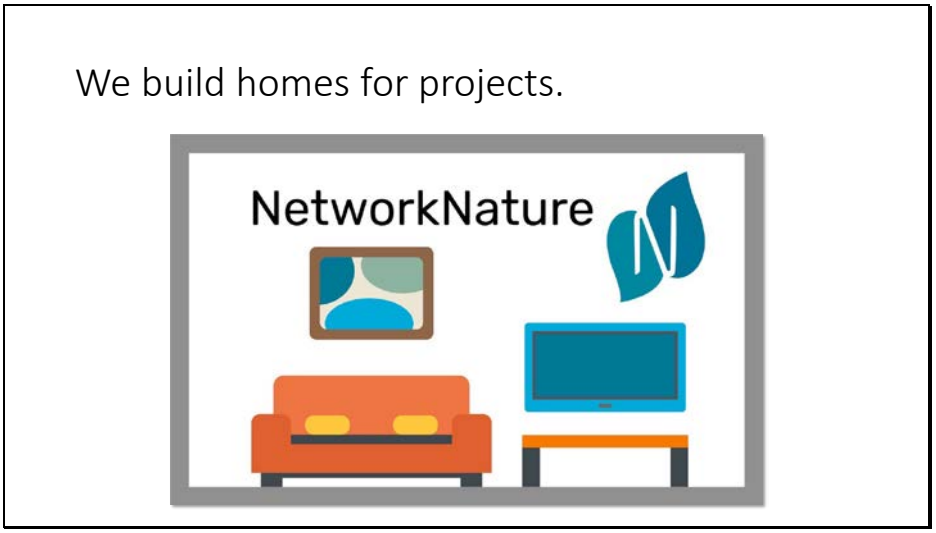
Oppla community

- >5000 members
- >500 products
- >600 case studies
- Partner in 13 EU Horizon projects

Slide 6

Slide 7

Slide 8



Slide 9

And help to connect them ‘under one roof’.

Slide 10

Oppla 2.0 launching soon

Slide 11

Oppla Groups

Groups: workspaces for sharing and creating around projects, topics and tasks.

Supergroups: collections of Groups that be combined to create more complex websites.

Slide 12

Oppla Supergroups

Slide 13

Group functionality

'Off the shelf' functions:

- ✓ Resources library for deliverables and other outputs
- ✓ Case studies database with interactive map
- ✓ Events calendar
- ✓ News and articles
- ✓ Members list and user accounts for both members and admins
- ✓ Webforms (e.g. surveys)
- ✓ Related content from other projects hosted by Oppla

Slide 14

What do we want from the eNaBLS microsite?

Slide 15

User stories

- A user story is a short, simple description of the needs of an end-user.
- It describes a specific product or feature from the user's perspective and outlines **who** the user is, **what** they want and **why** they want it.
- A user story makes sure to put the end users in the centre of conversation and capture product functionality from their perspective.

Slide 16

User stories

User stories are written like this:

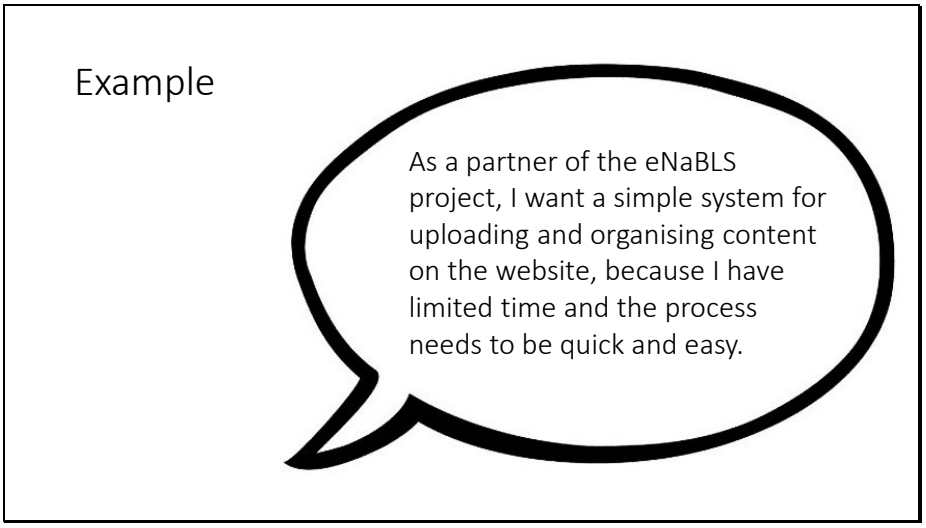
As a *[who?]*
I want *[what?]*
Because *[why?]*

Slide 17

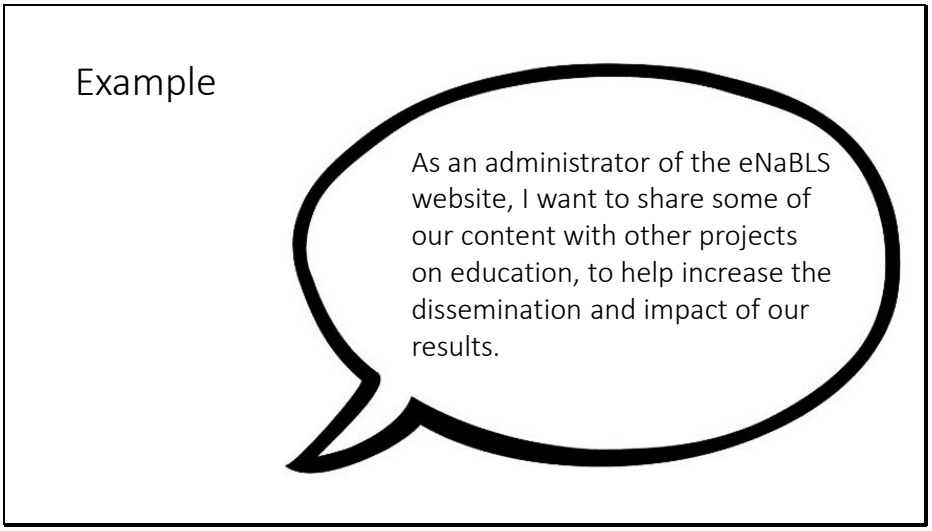
Example

As a person browsing the website, I want to be able to easily filter its content based on keywords, because I want to find information relevant to my interests.

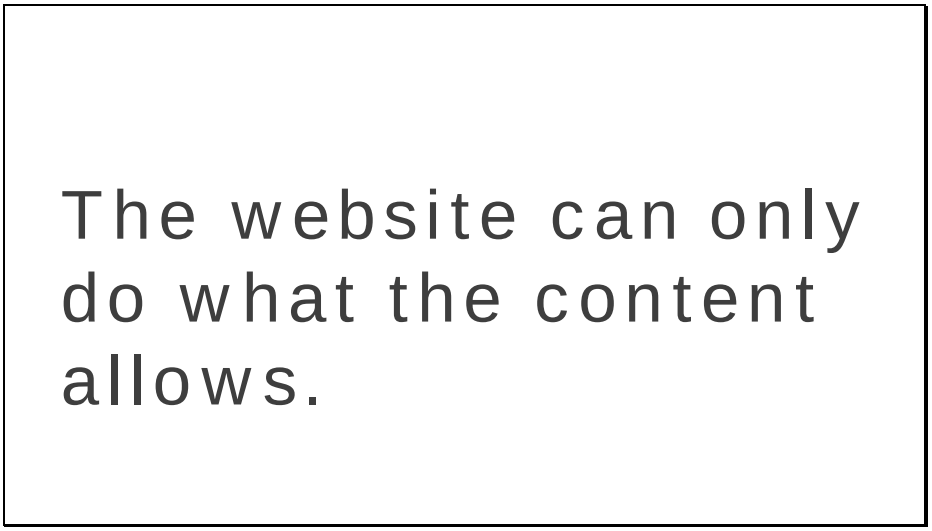
Slide 18



Slide 19



Slide 20



Slide 21

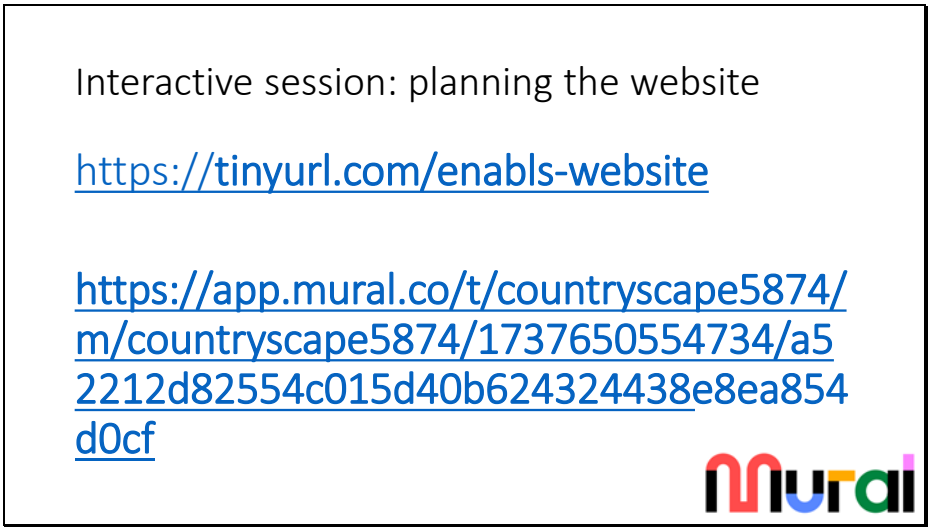


Table 1: Table example.

Column 1	Column 2
Line 1a	Line 1b
Line 2a	Line 2b

eNaBLS

Education and NBS -
bending the curve for biodiversity

www.enabls.eu