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RESTORE OUR OCEAN & WATERS

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DIGEST of Deliverable 2.1

Methodology for Mission Relevant NBS Assessment

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DIGEST of D2.1

Methodology for Mission Relevant NBS Assessment

Deliverable D2.1 is the result of task T2.1, which involves developing a methodology to assess whether completed or planned restoration projects relevant to Mission Ocean and Waters targets can be classified as Nature-Based Solutions (NBS). This methodology will be used in T2.2 to create a list of best practices.

The scope was expanded to include a methodology for developing Mission-relevant NBS projects and interventions, serving as a guide for future restoration efforts in the Danube River Basin. Part of this methodology also applies to the NBS assessment defined in T2.1.

Thus, the purpose of the D2.1 and this digest is twofold:

Firstly, to present the methodology developed in T2.1 for identifying best practices from implemented and financed projects.

Secondly, to provide a guide for the preparation and implementation of future NBS projects.

Definition of Nature Based Solutions

Nature Based Solutions, NBS, is a relatively new term, which comprises restoration of environment, including settlements, primarily cities. It was first mentioned in 2002, and fully accepted by the EU, i.e. EC in 2015. (Described in chapter 2 of D2.1.)

This approach is also recognized by UNDP, USA, Canada, Australia, and some international eco and nature oriented institutions, e.g. International Union for Conservation of Nature (IUCN, from Switzerland. NBS is still under development, which is far from over.

There are numerous definitions of NBS, the one presented here is from the European Commission (EC):

> Nature-based Solutions provide integrated, multifunctional solutions to critical societal challenges. They are “solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and interventions. Nature-based Solutions must therefore benefit biodiversity and support the delivery of a range of ecosystem services” (European Commission).

Shortly, the most significant characteristics of Nature Based Solutions are:

1. *Contribution to solving environment, ecosystem, and biodiversity problems.*
2. *Simultaneous human wellbeing contribution.*
3. *Solutions are inspired and supported by nature.*

Solutions should be cost-effective. In line with this are the terms Nature Based Economy, Nature Positive Economy, and Nature Based Enterprise (Mcquaid et al., 2022).

Source: *Mcquaid, S., Kooijman, E., Rizzi, D. Andersson, Th, Schanté, J. 2022. The vital role of Nature-Based Solutions in a Nature Positive Economy. Publications Office of the European Union, Luxembourg.*

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Remarks

The development of solutions to environmental problems, even if they are innovative and highly ecosystem-based, does not automatically qualify them as NBS. However, such solutions can be considered valuable and highly beneficial for integration into NBS projects or interventions.

A key aspect of NBS is that their infrastructure must be green, blue, or a combination of both – not solely grey (e.g., concrete, steel). Hybrid infrastructure, which blends grey elements with green and blue components, can be accepted. However, the acceptable extent of grey infrastructure in hybrid solutions remains undefined in current literature. In some cases, meeting this requirement may be challenging. While these solutions may not be classified as NBS, this does not imply they are inferior.

The general conclusion and intention is: that whenever it is possible, NBS should be applied.

Perhaps the most notable aspect of the EC approach to NBS is its emphasis on defining **Societal Challenges** (illustrated in the figure), a crucial step that should be undertaken at the outset of project development. Examples of societal challenges relevant to the EcoDaLLi project include the following, with some being particularly essential (highlighted):

1. Climate Resilience
2. Water Management
3. Water Quality
4. Natural and Climate Hazards
5. Green Space Management
6. Biodiversity Enhancement
7. Participatory Planning and Governance
8. Health and Wellbeing
9. New Economic Opportunities and Green Jobs

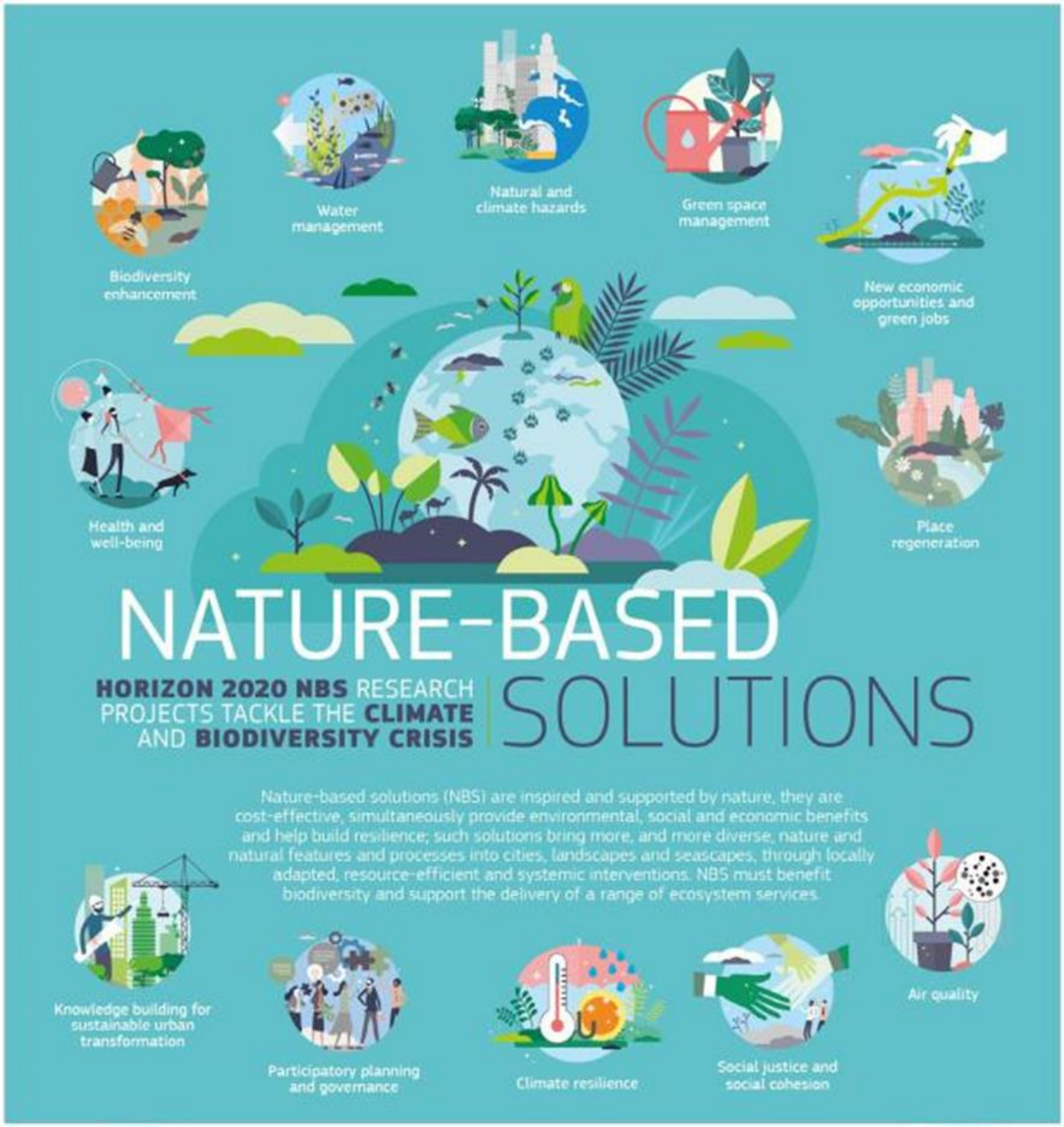
One of the initial steps in NBS project development involves conducting a thorough analysis of relevant publications. The following is a list of the most significant publications, with the final one specifically related to the Mission Ocean and Waters, Danube Lighthouse, and the EcoDaLLi project.

Dumitru, A., Wendling, L. (eds.). 2021b. Evaluating the impact of nature-based solutions, A handbook for practitioners. Publications Office of the European Union, Luxembourg.

Cardinali, M., Dumitru, A., Vandewoestijne, S., Wendling, L. 2021. Evaluating the impact of nature-based solutions, A summary for policy makers. Publications Office of the European Union, Luxembourg. doi:10.2777/521937.

Dumitru, A., Wendling, L. (eds.). 2021a. Evaluating the impact of nature-based solutions, Appendix of methods. Publications Office of the European Union, Luxembourg.

European Commission. 2023. Baseline study for the implementation of lighthouses of the Mission Restore our ocean and waters by 2030': Atlantic, Arctic, Danube and Mediterranean lighthouses, Final report. Publications Office of the European Union, Luxembourg.



Nature-based Solutions address societal challenges (Image © European Union, 2021)

The comprehensive desk analyses of NBS related publications is performed within this task, and presented in chapters 2, 3, 4 and 5 of D2.1.

Methodology of NBS Project Assessment and Development

The proposed methodology, illustrated using a flowchart, introduces three key decision points designed to minimize unnecessary costs and labor by identifying potential issues early in the NBS assessment process. For example, if it is determined by the first decision point that a planned restoration cannot qualify as an NBS, subsequent activities are halted. This methodology was developed in collaboration with experienced EcoDaLLi project partners and key regional stakeholders, ensuring its relevance and practicality.

The project realization is divided in the following three phases:

I Preparatory, NBS Assessment Phase
II Restoration Phase
III Operational Phase

Preparatory Phase

This phase contains three subphases.

1. NBS project initiation

The proposed restoration is analyzed to determine its applicability as an NBS, serving as a preliminary NBS assessment. This evaluation can be conducted using the guidance provided in Chapters 2 to 5 of D2.1, likely with little to moderate expert involvement. Additionally, this approach can be used to assess whether a project developed by others qualifies as an NBS.

2. Validation, and assessment, of the project as NBS

In this subphase, experts are engaged to further develop the project features. They are responsible for selecting relevant indicators, with a preliminary selection already made in the first subphase. These indicators, which may be characteristics or metrics (or non-metrics), are used to describe both the current and expected (planned) environmental status and the achievement of societal challenges. Detailed instructions for selecting indicators are provided in Chapter 5 of D2.1.

The following documents should be developed:

Baseline Data Collection

Theory of Change

Monitoring and Evaluation Plan

BASELINE DATA COLLECTION

This activity involves describing the current environmental status of the area to be restored, based on selected indicators.

THEORY OF CHANGE

This document outlines the expected improvements and results of the restoration project.

MONITORING AND EVALUATION PLAN

This document defines the procedures and timeline for monitoring the project's progress and evaluating its outcomes.

3. Creation of the NBS project’s conceptual design

Restoration Phase

This phase has a structure commonly used for other engineering restoration projects. An important difference is the participation of stakeholders in activities relevant to terms of reference, selection of performers, and performing/construction monitoring.

Operational Phase

This phase is explained in subchapter 6.1.2 of D2.1.

Particularities, Novelties and Specifics of this Methodology

Chapter 6 introduces a **novel methodology**, particularly in the form of a **step-by-step Flowchart** that outlines the NBS assessment process and project development, including the Operational phase. This flowchart is designed to be adaptable, allowing for modifications or branching to accommodate parallel activities when needed. It is user-friendly and easily understandable, intended for use by NBS developers, decision makers, authorities, IA projects, and stakeholders.

A key aspect emphasized in various sources is the necessity of conducting comprehensive desk analyses of relevant publications when developing an NBS project. The methodology presented in chapters 2 to 5 provides relevant information that significantly **reduces both time and costs** during the early stages up to decision point D.1.

Chapter 5 details the principles for selecting appropriate indicators, which is another **cost-reducing factor**. In many cases, especially for small-scale projects, a preliminary NBS assessment can be conducted using only this deliverable or with limited expert engagement, **resulting in cost and time savings**. This is considered a novel feature of the methodology.

Stakeholder engagement, particularly involving citizens, is integral to all stages of the project, including evaluation and decision-making processes.

Subchapter 6.1.2 discusses the importance of monitoring and evaluation during the Operational phase. It highlights the use of trained volunteers, especially for frequent and simpler monitoring tasks, as a cost-effective approach that can also increase citizen participation.

This chapter concludes with an overview of the flowchart, tables of activities, and key documents.

First part of Flowchart for NBS project assessment or realization

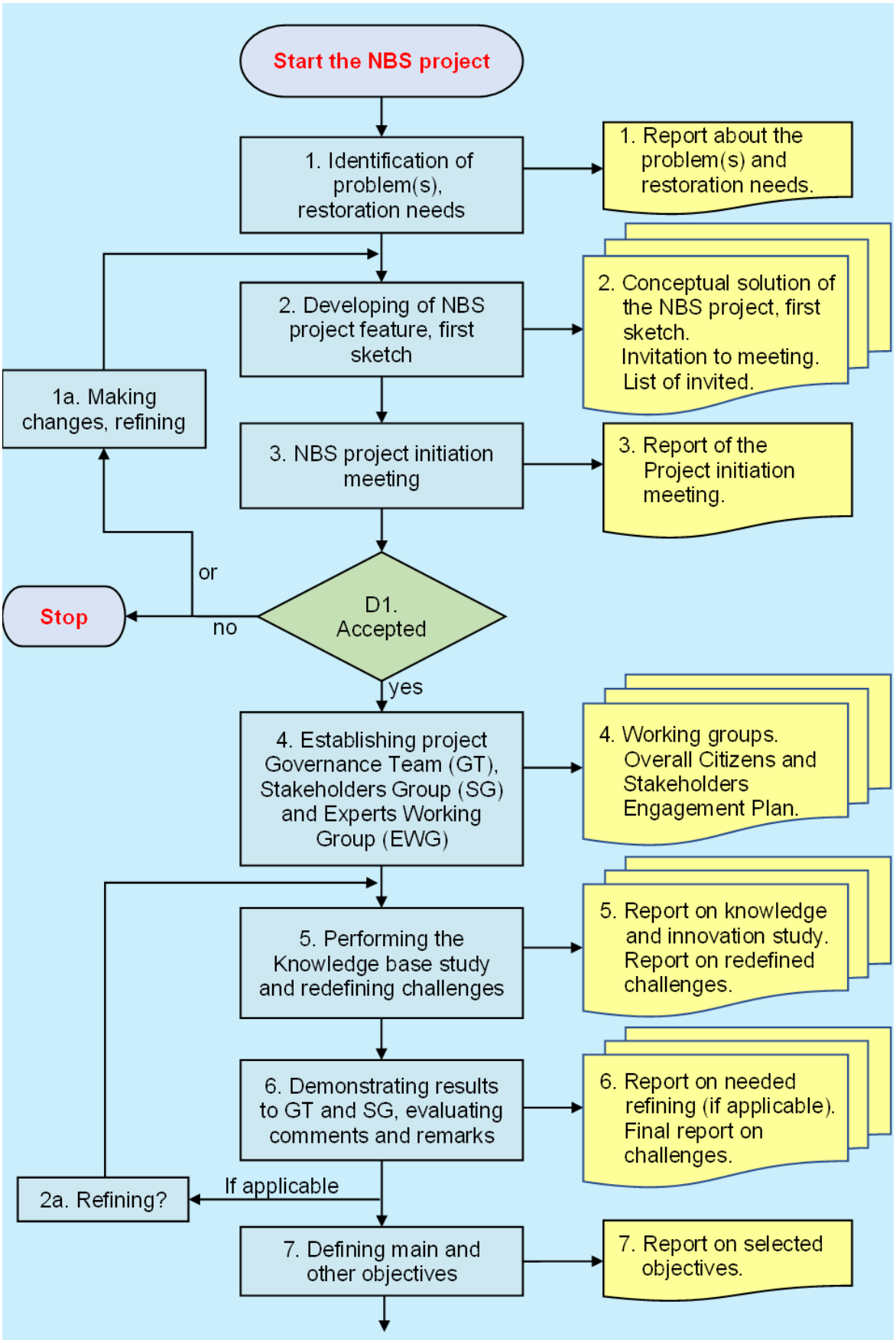


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Table of activities, excerpt from Tab. 6.2

No	DESCRIPTION
1.	To be performed by initiator, institution, enterprise, individuals, etc. It could be public, private, public-private, governmental institutions, scientific or technical advisors. Defining the location and scale. Defining land and water ownership and other legal issues. Addressing the problem(s) of river(s) or/and other water body(s) and riparian areas, biodiversity enhancement (connectivity, habitats, etc.) in line with Mission Ocean and EcoDaLLi. Considering needed restorations and expected effects, enhancements. A screening analysis is necessary to find the NBS measure best suited to the local conditions. Preparing a rough estimation of project realization timing, overall costs, and potential finance sources. Establishing the Project Core Team, (PCT). PCT (together with different stakeholders/ citizens) should provide **visioning**: by working with stakeholders, visioning would seek to transform a commonly perceived unsatisfactory situation by defining a shared vision for the future. Different time horizons can inform the exercise. Typically, decision-makers engaged in "forward planning" have concentrated on a time span of 10–20 years into the future. Choices connected to other types of interventions might involve a longer time horizon, hence being consistent with those considered in impact studies (typically half of the 21st century). See Chapter 3.1
2.	To be performed by PCT and, potentially, invited experts, outsourcing. Developing the first conceptual solution of the project. Defining societal challenges (see Chapter 4), relevant for project nomination as NBS and compatibility with Danube River Lighthouse Mission. Propose leading and other stakeholders. Important participation of citizens, NGOs, environmentalists, academia, public authorities… Proposing organization of *Project Initiation Meeting*. Propose an Organizing team. Preparing a List of invited participants. Date, venue, agenda.
3.	PTC and invited experts, citizens' representatives, authorities, etc. present the projects and open discussion. Comments, changes, considering possible restructuring of the project. Considering innovations. See Chapter 4.3
D1.	The initiators and stakeholders consider comments, remarks, ideas presented and evaluate whether the Project proposal can be validated as NBS and be performed. They decide at the end of the meeting, or afterward. The result can be: ➢ The Initiative accepted with no, or minor corrections. ➢ The initiative needs refining and repetition of checking and deciding. ➢ The Initiative not accepted.
1a.	Reconsidering the initiative considering comments, recommendations, and conclusions from the Project Initiation Meeting. Repetition of checking and deciding.

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Table of documents, excerpt from Tab. 6.3

No	DESCRIPTION
1.	Report about problems, expectations/vision and proposed NBS project/intervention. The document explains identified problems or opportunities. Tries to identify root causes of the identified problems. Defines general-overall objectives. Vision. It should also contain a proposal of several possible NBS and alternative grey/hybrid solutions based on local characteristics. Defines the provisional title of the project.
2.	Conceptual solution of the Project (the first sketch). Invitation to Project Initiation Meeting, Agenda. List of invited.
3.	Report of the Project initiation meeting and decision on how to continue: start the Project, perform the suggested changes and reconsider the decision (short additional meeting), cessation of the activity. Includes induction application of innovative solutions and/or development of new ones.
4.	The decision about the structure and the roles of GT, SG and EWG. Overall Citizen and Stakeholder Engagement strategy.
5.	Report on knowledge and innovation study. List of criteria for assessing the performance of NBS in dealing with specific challenges. Document assessing NBS' effectiveness prepared by EWG. Report on redefined challenges.
6.	Minutes of different meetings with the stakeholders with detailed explanations of comments, suggestions, and recommendations. Report on refinements needed. Final report with redefined challenges.
2a.	List of possible trade-offs. Recommendation how to avoid or minimize trade-offs.