

Nature-based Solutions

& Innovative Finance

Valuing ecosystems for increased resilience to climate change

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Managing Partner Business Development Group, Romania

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The Nature Conservancy 

CAF
DEVELOPMENT BANK
OF LATIN AMERICA

Swedish Agency
for Marine and
Water Management

Business Development Group

Private consultancy (SME, 1992) specialized in **streaming innovation** in practice to ensure sustainable water management, increased resilience to climate change and functional circular economy models.

Active in international consortia implementing demonstration and pilot projects based to facilitate **sustainable and inclusive economic growth**;

Presence in Romania and in the region **creating and strengthening alliances** to facilitate long-term impact action

Working closely with local communities, business sector, research and education as well as public entities for **adapting of legal and institutional frameworks** to facilitate replication and upscale of different implementation models

What we do:

Research & Education

Applied research

Demonstration projects

Business modeling and market uptake

Training programs

Educational Platforms

Knowledge transfer & Capacity building

Public policy development

Legislation and institutional frameworks

Social and economic models

Strategic partnerships

Stakeholders' Engagement Communication & Dissemination

Stakeholders mapping and activation

Engagement matrices

Collaborative platforms

Communication and dissemination





Nature Insurance value: Assessment and Demonstration

H2020 Program

2016- 2020

23 Partners, 11 European Countries

Coordinated by the Duero River Basin Authority (Spain)



Business Development Group

Member of the project consortium

NAIAD Assumption:

Ecosystems can contribute to mitigate extreme water risks & increased resilience of the society in a context of climate change

NAIAD Objective:

Demonstrate the Assurance Value of Ecosystems

= Role ecosystems can play in reducing water related risks and other co-benefits as “Natural Assurance Schemes”

HAZARDS

Flood
Drought
Water quality
Land subsidence

SCALES

Micro (0.5ha)
Meso
Large (250km)

ENVIRONMENT

Urban
Peri-urban
Rural

Levels of DEVELOPMENT

Simulation ex ante
ex post analysis
Deployment
Replication

CITY OF ROTTERDAM

Cloudbursts, floods, droughts
Urban Area

THAMES BASIN

Storm surges, urban drainage
flooding, fluvial flooding
Peri-urban Area

LA BRAGUE BASIN

Floods (torrential floods)
Peri-Urban area

LEZ BASIN

Severe droughts
Urban area

MEDINA AQUIFER

GW pollution, aquatic
ecosystems degradation, floods,
droughts
Rural area

CITY OF COPENHAGEN

Pluvial floods, sea level rise, rising water
tables
Urban Area

CITY OF LODZ

Water shortages, heat waves, pluvial
flooding, poor water quality
Rural and Urban areas

GLINSCICA CATCHMENT

Flooding, biodiversity loss, poor water
quality, GW depletion
Rural and Urban areas

LOWER DANUBE

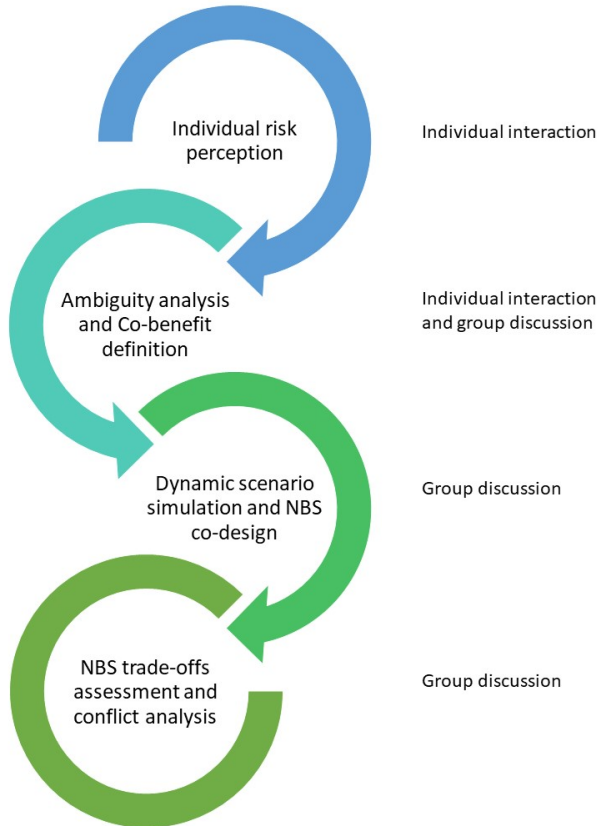
Floods, desertification, riverbed erosion
and silting, poor water quality
Rural and Urban areas

NAIAD



Legacy and Lessons Learned

Participatory process for NBS analysis and trade-offs assessment



Acknowledging

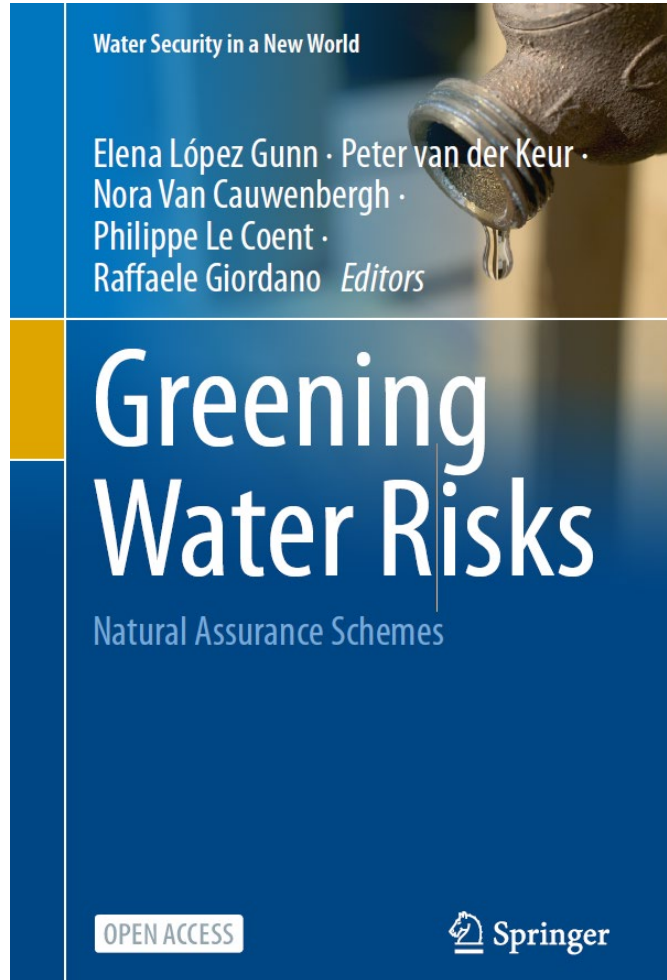
- Individual **risk perception** and **co-benefits definition**
- **Detection of the barriers** hampering NBS co-design and implementation
- **NBS scenario** simulation and **trade-offs** analysis

Understanding

- **Complexity** of the cause-effects chains affecting NBS effectiveness and the role of socio-institutional measures
- The need to account for the existence of **potential trade-offs** among different stakeholders benefiting from NBS implementation and co-benefits production;
- The role of **communication and information** exchange in facilitating NBS co-design and implementation.

Taking action:

- **partnership between authorities-research-private sector**



The Five possible “Hats” of Insurance Sector:

- Institutional investors
- Developers of climate-based insurance products - innovators
- Partners in PPP alliances: risk sharing/risk transfer with the public sector
- Data providers/data generators e.g. loss data /proxy indicators
- Insurers/re-insurers of e.g. infrastructure (risk disclosure)



Lower Danube Case Study

- detect and analyze differences in stakeholders' perceptions of the multi-dimensional benefits;
- raise awareness of what situations may produce a trade-off with an understanding of why (and what) trade-offs could result from NBS implementation;
- resolve potential conflicts and enhance equitable access to NBS co-benefits.
- Use of SDM approach as a structured method to blend stakeholders' knowledge for the design and evaluation of NBS as well as soft measures required for the implementation of NBS.



DANUBE FLOODPLAIN
Reducing the flood risk through floodplain restoration along the Danube River and tributaries
Lead partner: National Administration "Romanian Waters"



www.interreg-danube.eu/danube-floodplain



Current status:

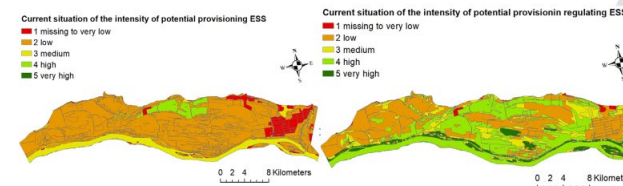
100 000 EUR/year
0.5 mil EUR
(erosion stabilization)

Realistic scenario:

25-30 mil EUR restoration
costs (green + grey
infrastructure)

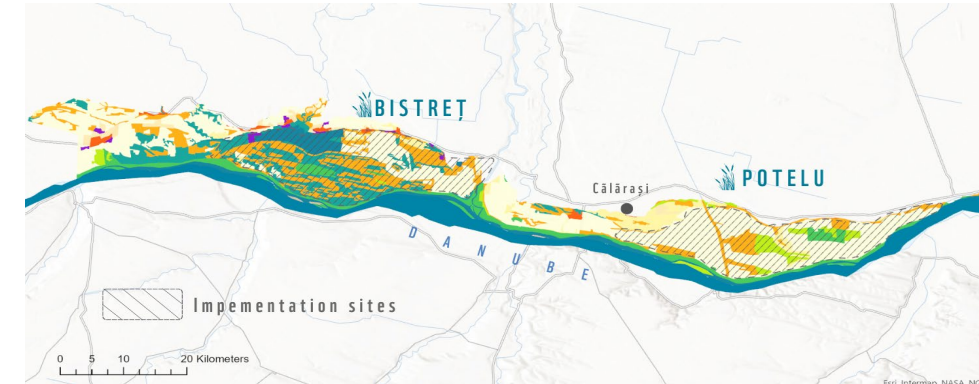
Optimistic scenario:

8.5 mil EUR land acquisition
0.5 mil EUR assets reallocation
3.5 mil EUR losses on 5000 ha
agriculture land



From research to practical implementation

- Research results included in RBMP and substantiated project proposal for the National Resilience and Recovery Plan (NRRP):
 - ✓ Removing obstacles from the UAT Bistret waterway in order to reconnect a section at risk of flooding for the restoration of habitats and water-dependent species in situ Nat 2000 ROSPA 0010Bistret and RO SCI 0045 Jiului Corridor. Similar for other areas Ciuperceni, Gruia, Salcia



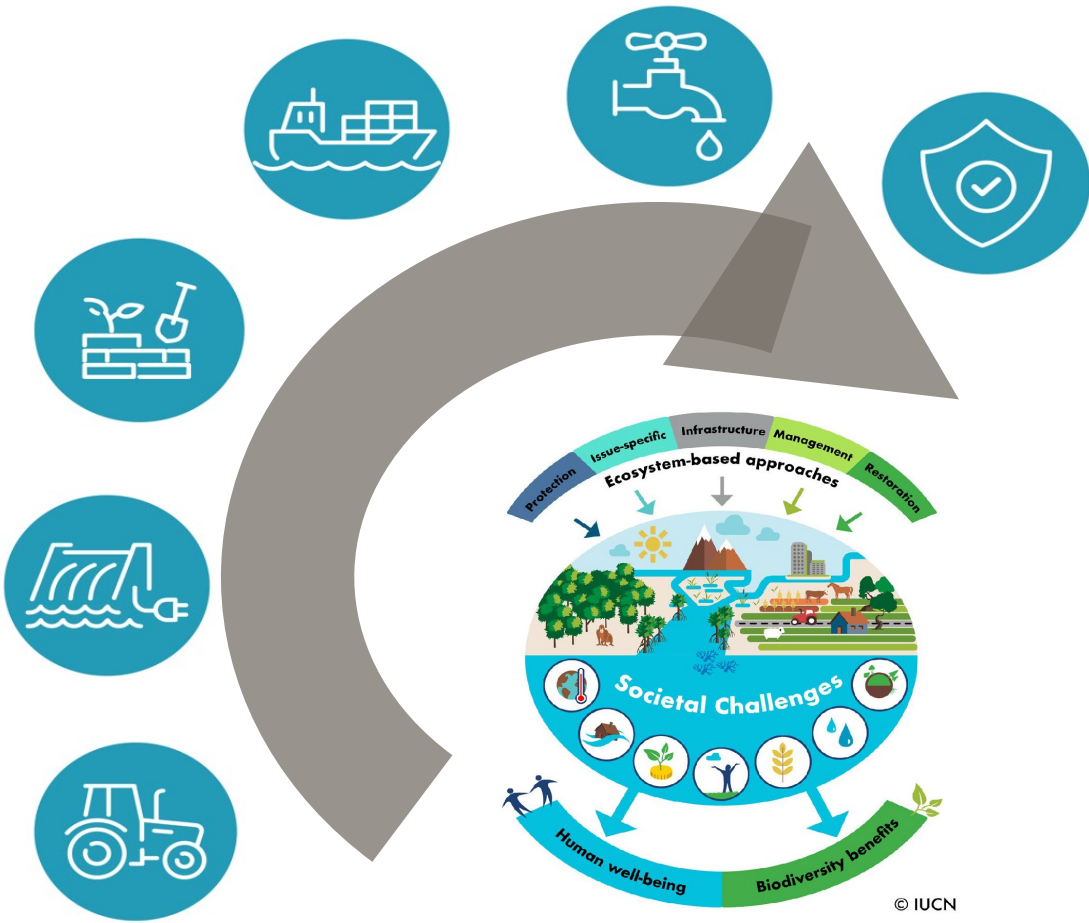
- Divergent institutional perspectives delayed implementation processes → NRRP opportunity lost
- New pathways currently investigated by water authorities (including PPP)

Lessons learned

- Nexus approach to water management
- Local priorities better reflected in sector strategies including streamlining of NBS

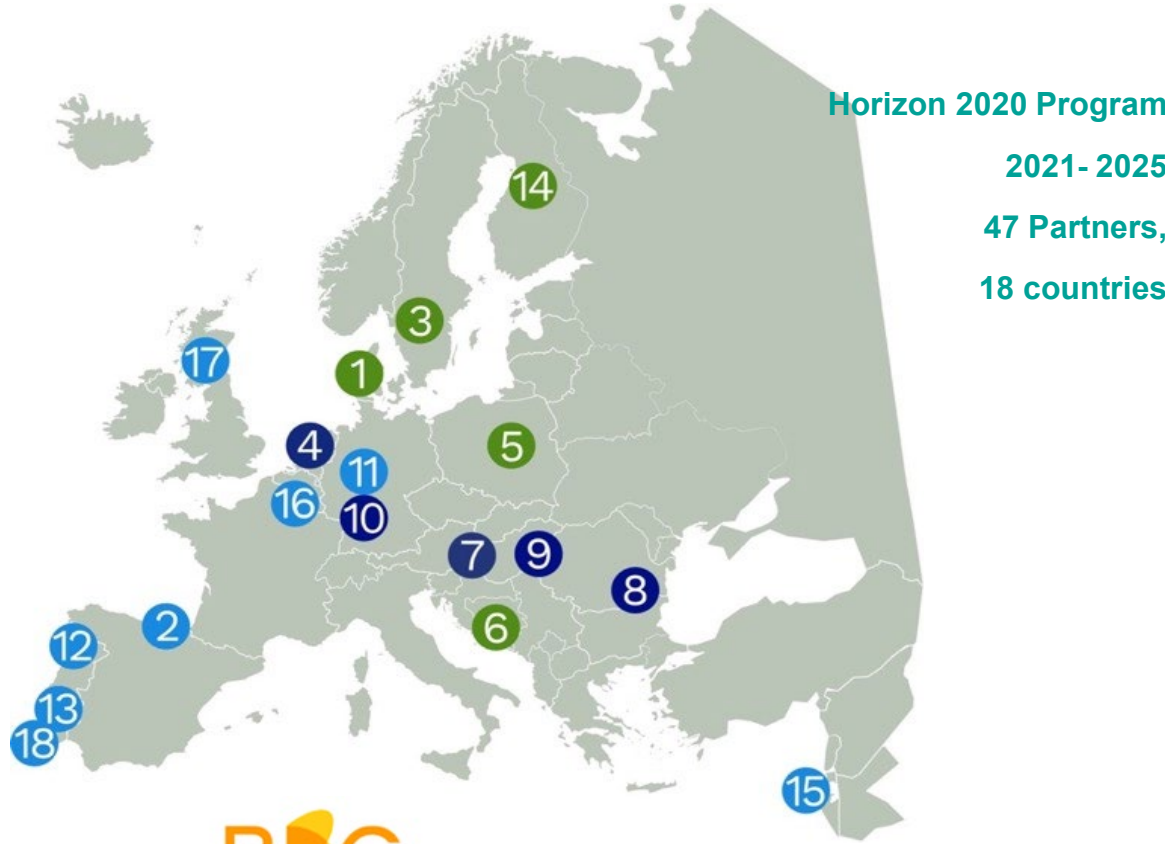
A glimpse into research groundwork

MERLIN Mainstreaming Ecological Restoration of freshwater context: INnovation, upscaling and transformation



Understanding sectoral dependences and NBS

-related ecosystems in a Landscape



Horizon 2020 Program
2021- 2025
47 Partners,
18 countries



Expert input for WWF Romania:
sector-based assessment of natural resources
management policies for NBS inclusivity

A glimpse into research groundwork



The insurance sector's capacity to serve as a powerful tool for incentivizing the uptake of NbS by the agriculture sector to prevent damages due to climate change (floods and droughts)



Value chain analysis
and
incentivizing NbS adoption
in the specific context of
the agricultural sector in
Romania.

Main recommendations for incentivizing NBS adoption by insurance and agriculture sectors

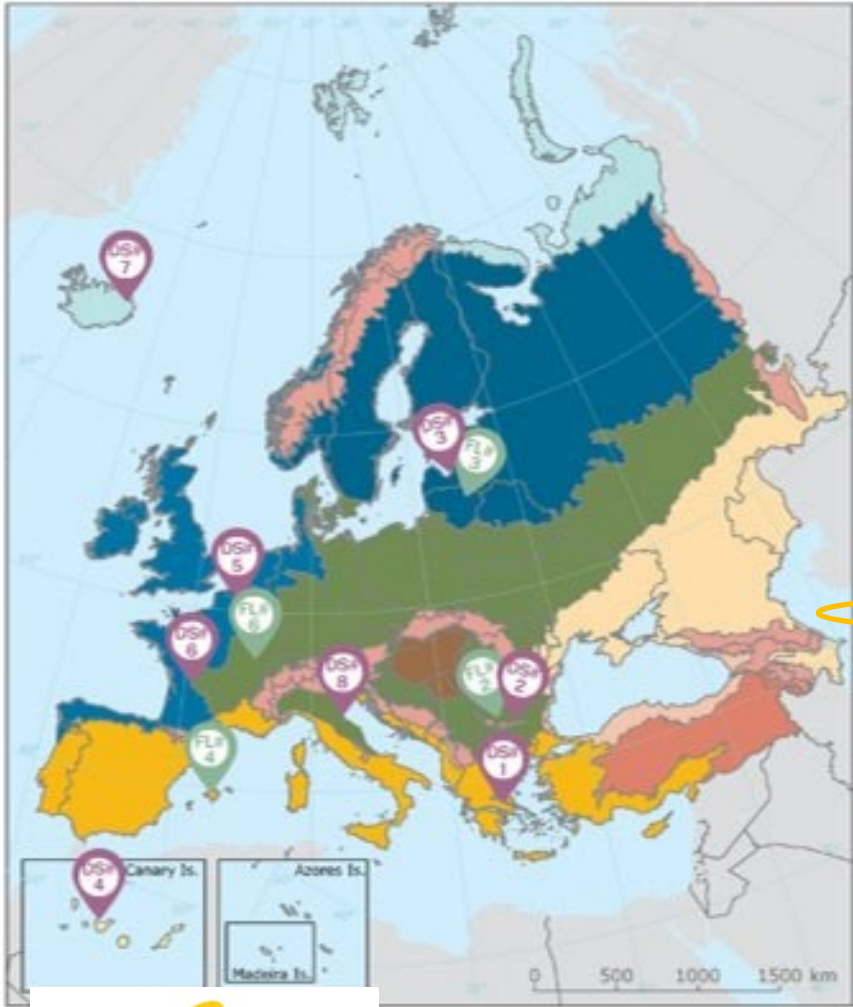
- Establish and sustain **intersectoral dialogue platforms**, with sector associations co-creating realistic solutions for insurance and agriculture, including nature-based adaptation measures to support policy and financing frameworks.
- Promote successful NBS through **joint trainings and knowledge-sharing events**, using tools like the NAS canvas to encourage co-creation and practical implementation.
- Expand **risk pooling mechanisms**, such as parametric microinsurance at landscape scale, to enhance smallholder resilience and support adoption of NbS in agriculture.
- Highlight **best practices** of NBS in farmer trainings and extension services to increase visibility and uptake.

A step forward:



Funded by Horizon Europe Program under the Adaptation to Climate Change Mission

Accelerating and mainstreaming transformative NATure-bAsed solutions to enhance resilience to climate change for diverse bio-geographical European regions



- Biogeographical regions in Europe, 2016**
- Alpine
 - Anatolian
 - Arctic
 - Atlantic
 - Black Sea
 - Boreal
 - Continental
 - Macaronesia
 - Mediterranean
 - Pannonian
 - Steppic
 - Outside data coverage
- DS#1- Lelantine plain - GR
DS#2- Vacaresti Natural Park - RO
DS#3- Zemgale Region - LV
DS#4- Canary Islands - SP
DS#5- Blue Horizon Limburg - BE
DS#6- Vienne River - FR
DS#7- Arctic - IS
DS#8- Venice - IT
- FL#2- Bucharest Children's Park - RO
FL#3- Lithuania - LT
FL#4- Balearics - SP
FL#6- Grand Est - FR



Sept 2023
August 2028



43
Partners



13
Countries



19.2 M€
Project Budget



natalieproject.eu



Business Development Group

Member of the project consortium

ecosystem -based adaptation in Europe

Investing in Ecosystem based adaptation for Climate Resilient Development



Testing an Investment Bundle to:

1. Identify main funding and financing streams to help leverage funding for speeding-up and scaling-up adaptation instruments.
2. Apply a bundle of tried and tested methodologies to catalyse NBS project starting in the early pre-feasibility stage of project organisation process, accelerate their bankability and **help leverage private investment into nature**.
3. Document the impact from the processes, projects and investments by making them easily accessible and replicable to others.
4. Case Study based:
 - Implementation of the Investment Bundle Tool(s) with the demo and/or follower sites.
 - Identify together with the individual case study which of the Tools (s) are best fitting their needs and challenges.
 - Support for accelerating the bankability of the NBS projects in the NATALIE project, including an assessment of costs and benefits.
 - Identification existing and possible funding and financing instruments that could support projects upscale in the case studies contexts.

The Investment Bundle Tools

	Nature Investment Launchramp	Natural Assurance Business Canvas	Sustainable Asset Evaluation
Maturity level of NbS project	Project origination phase (pre-feasibility)	Concept phase prepare an outline of the business case - feasibility phase for NbS interventions. Existing projects under development with potential to be replicated and/or upscaled	As the assessments are customized to each individual project, it could be applied in any stage of the project cycle.
Identifying financing for NbS	Yes	Yes	Yes (including financial modelling)
Cost-Benefit Analysis of NbS measures	Yes (including grey infrastructure or hybrid options as well)	Yes (Focus on NbS under different scenarios)	Yes (including grey infrastructure or hybrid options as well)
(Climate) Challenges	Water-related challenges (floods, droughts, water-quality)	<ul style="list-style-type: none"> - Climate-related risks, such as drought, floods, heatwaves, among others. - Environmental challenges (e.g., groundwater overexploitation, desertification, erosion) 	Holistic valuation of projects, taking into account environmental, social and economic externalities of NbS projects
Data Collection	<ul style="list-style-type: none"> - Workshops, site visits, Interviews and questionnaires and Desk-based research (e.g., government databases, newspapers, research centres etc). 	<ul style="list-style-type: none"> - Via stakeholders, interviews and participatory workshops with stakeholder. 	<ul style="list-style-type: none"> - Collecting project-level data from project proponents and relevant stakeholders - SAVi database, including our literature review and our SAVi track record - Best-in-class climate data from the EU Copernicus Climate Data Store (built in to all SAVi models).

Components and elements to analyze in the NABC

Red:

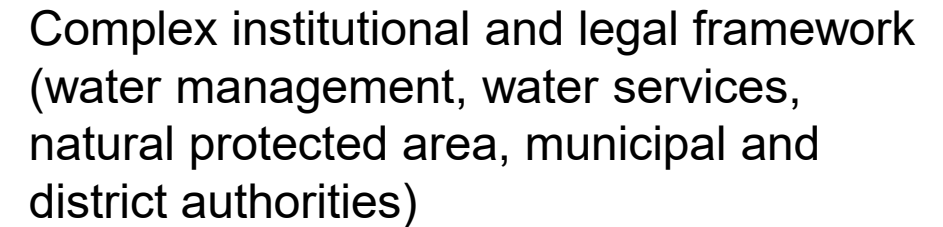
Traditional
business
canvas

Purple: PPP
business
canvas

Green: Natural
Assurance busi
ness canvas

2.SUPPLY SIDE	1. PROBLEM, SERVICE AND VALUE	3.DEMAND SIDE
CLUSTER C. SUPPLY	CLUSTER A. FLOW OF ES SERVICES	CLUSTER E. DEMAND
STEP 4. WHO IMPLEMENTS <i>Who takes the responsibility</i>	STEP 1. PROBLEM TO BE ADDRESSED	STEP 9.WHO OWNS THE PROBLEM <i>Who is affected</i>
STEP 5. KEY ACTIVITIES <i>Measures composing the strategy to address the problem</i>	STEP 2. VALUE PROPOSITION <i>Main service provided</i> <i>Damage costs/avoided costs + value of co-benefits</i>	STEP 10. CUSTOMER SEGMENTS
STEP 6. KEY RESOURCES <i>Needed to implement the measures, e.g. knowledge, people and capacity, legal frame, political support, other, ...</i>	2A. Primary service and value <i>Risk reduction service and avoided costs</i>	10A. Direct Beneficiaries <i>Those who benefit directly from the primary value, i.e. risk reduction value</i>
STEP 7. KEY PARTNERS <i>Key stakeholders you need to engage with to obtain the resources</i>	2B. Secondary service and value <i>Co-benefits and associated values</i>	10B. Clients <i>Those who pay for the service</i>
	CLUSTER B. REGULATORY CONTEXT	10C. Extended Beneficiaries <i>Those who benefit indirectly of the main value and co-benefits</i>
	STEP 3. REGULATION	CLUSTER F. REVENUE STREAMS
	4.SUPPLY ↔ DEMAND	STEP 11. REVENUE STREAM <i>Income streams associated with services/value generated, including private sector and private investments</i>
CLUSTER D. COST STRUCTURE	CLUSTER E. SUPPLY-DEMAND INTERACTIONS	STEP 12. FUNDING COMING FROM
STEP 8A. Life Cycle Costs <i>Costs of implementing the NBS measures including capital, operation and maintenance</i>	STEP 13. CUSTOMER RELATIONSHIPS <i>Type of communication between service provider and clients</i>	12A. Tariffs
STEP 8B. Opportunity costs <i>Avoided benefits from implementation of alternatives</i>	STEP 14. CHANNELS <i>Means of communication between service provider and clients</i>	12B. Taxes
		12C. Transfers
		12D. Private
	5.IMPACT	
	CLUSTER H. IMPACT	
	STEP 15. IMPACT THROUGH KPIS	

Will be elaborated for the Demo Case in Romania: Vacaresti Natural Park in Bucharest



Diverse stakeholders' landscape: activation and engagement

Capacity building for maintenance and monitoring

Tailored financing and funding streams, alliances and partnerships

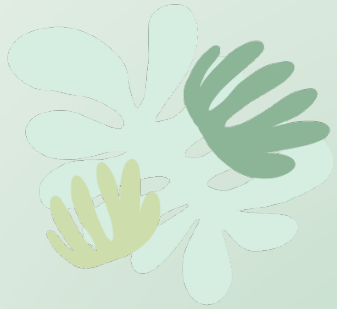
Upscale ambition:

Bucharest's main river as a green-blue urban axis



Transforming NBS into systemic responses for climate adaptation

- Conceptual frames and sound research work **validated by application in specific local contexts**
- Implementation of pilot projects essential for **raising awareness and build capacity** of decision makers
 - **intersectoral cooperation is mandatory**
- Considering the complexity of cause-effect chains impacting NBS require **dynamic approaches for assessing effectiveness and highlight co-benefits**; time is a key variable
- **Early stakeholders' engagement in co-creation and collective decision processes** instrumental in overcoming barriers for NBS acceptance as best risk mitigation alternatives
 - results are strongly dependent on the representativeness of the participating stakeholders
 - the preferences of the general public maybe misrepresented by stakeholders or unknown, which may lead to suboptimal choice
- Strong, committed **private-public alliances** to facilitate implementation, multiplication and upscale



NATALIE

Accelerating and mainstreaming
transformative NATure-bAsed solutions to
enhance resiLIEence to climate change
for diverse bio-geographical European
regions

Thank you!

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<https://www.natalieproject.eu/>



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