

Shelter

Sustainable Historic Environments
hoListic reconstruction through
Technological Enhancement &
community-based Resilience

**Extract of D.6.4. Historic area resilience
co-production playbook**

Strategic blueprints for the 1Baixa Limia-Serra Do Xures Natural Park in Galicia

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Glossary

Acronym	Full name
CNH	Cultural and Natural Heritage
CHM	Cultural Heritage Management
DRM	Disaster Risk Management
HA	Historic Area
NBS	Nature-Based Solutions
OL	Open Labs
OLC	Open Lab Coordinator
UR	User Requirements

1 Strategic Blueprints

The following report is dedicated to outlining the OL specific strategic blueprints that were developed through the co-creation workshops. The strategic blueprints consist of the identified solutions which were discussed with the participating stakeholder.

The design of the strategic blueprints follows the discussed questions per topic and for each identified solution an own strategic blueprint sheet was created. Each sheet includes a suggestion for the implementation timeline as well as an assignment of the identified solution to the phases of DRM.

In addition, the results of the questionnaire for DRM and communities it was possible to receive an overview of the specific situations and the involvement of communities in the disaster risk management. With the feedback of the stakeholder information sheet, an analysis of the participating stakeholder structure was done. The structure of the strategic blueprints follows the discussed questions per topic and each identified solution is described in an own strategic blueprint sheet.

1.1 Stakeholder structure analysis

With the results of the stakeholder information sheet, an analysis of the stakeholder structure was possible. Due to COVID-19 situation, not all identified stakeholders were able to join the online meetings and contribute their specific expertise but the participation was balanced and OL case study coordinators were in contact with stakeholder which were not able to join meeting to catch their expertise.

1.1.1 Baixa Limia-Serra Do Xures Natural Park in Galicia

In the following Figure 1 the stakeholder structure for the co-creation workshop in Baixa Limia-Serra Do Xures Natural Park in Galicia. The participants were assigned to local as well as regional governmental organizations and civil society. Also, representatives of governmental organizations from Portugal joined the workshop session and brought in their expertise.



Figure 1. Stakeholder structure for Baixa Limia-Serra Do Xures Natural Park in Galicia

1.2 Results of the questionnaire

In this subchapter, the results of the questionnaires are visualized, which were forwarded from the stakeholders to the OL case study coordinators. The answers were translated from the national language into English and summarized into the questionnaire template.

The results of the questionnaire show the situation for each OL due to the experience and evaluation of the involved stakeholders. Some results may be used for further evaluations in the sense of involvement of communities in disaster risk management in all phases. A balanced and developed DRM in the respective OL region would have resulted in a total YES to all 5 questions by the stakeholders. As the questionnaires show this is not the case. In any case, a respective need for action has to be evaluated with all care and specifically identified from OL to OL.

In the following the answers of the Baixa Limia-Serra Do Xures Natural Park OL are visualized.

Question	YES/NO	If "Yes" please short description	additional comments for the HA if necessary	additional comments for improvements based on your expertise
Are public awareness programmes executed? (Yearly frequency of execution of programs: once, sometimes, regular)	Yes	In Galicia there is a campaign about fires every summer in social media, TV, radio, newspapers and billboard. (yearly frequency, duration: at least 3 months)		
		The target of the campaign are not always the same, but mostly aim to empower people to be part of the solution by reporting negligent actions and fires. Last awareness programme was about taking care of the forest lands as part of the Galicia heritage (https://www.youtube.com/watch?v=6cK3vtZyf7I)		
		The Natural Park website, flyers, signposts, etc usually include information regarding the risk of fires and how could they damage the natural heritage		
Is regular (at least yearly) emergency response training and drills at multiple levels ongoing?	Yes	PLADIGA (Prevention and defense plan against forest fires in Galicia) includes training and drills, although in general, they do not include civilian population		
		Work Centres (public and private buildings) already have fire prevention plans because of the National regulation Ley 31/1995, the 8th of November about Occupational Risk Prevention.		
		Communication, collaboration and training activities practices between different units are done.	Example: Project ARIEM + is a collaboration mechanism between those responsible for managing and mobilizing resources in the face of major emergencies in southern Galicia (Spain), Castilla-León (Spain) and northern Portugal.	
Does a community risk management or emergency committee exist, that deals with prevention, mitigation, preparedness and response? (Meeting frequency: only during emergency, once in a year, at least quarterly)	Yes	The structure and functions are detailed in the PLADIGA (Prevention and defense plan against forest fires in Galicia)		
		In case of Emergency (not just fires), it is possible to create a consultive group in which it will be involved: Civil protection, Emergency management of the regional government and the councils affected. Its functions and structure are detailed in the PLATERGA (Galician Territorial Emergency Plan)		
		The PLADIGA plan is updated yearly		
Do local institutions (administration, police, fire brigade, hospitals, building sector, etc) receive training on joint risk management? (Frequency of training: once per year, every two years, other)	yes	PLADIGA (Prevention and defense plan against forest fires in Galicia) includes national, regional and local units, and their responsibilities are defined in the Plan.		
Is the private sector represented as member in the Management/emergency committee? (businesses, civil society, NGOs, etc.)	No	PLADIGA only includes public bodies		

Figure 2. Questionnaire results for Baixa Limia-Serra Do Xures Natural Park in Galicia

1.3 Strategic blueprints for Baixa Limia-Serra Do Xures Natural Park in Galicia

The co-creation workshop results in 7 strategic blueprints. In the following subchapters, the strategic blueprints are available. Especially for the Natural Park, two strategic blueprints (ID 19 and ID 20) were prioritised from the stakeholder for further research.

1.3.1 Strategic blueprint 19

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	19
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia
TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	Communities and Associations for fire risk prevention
How can the identified tool improve the current situation?	Create a more coordinated response to the firewires. Move the insight of the community putting in value the cultural and natural heritage in an integrated way.
How should the design of this tool look like?	Round tables, workshops and meetings involving all the stakeholders: Councils, forest communities, owners of rustic plots, heritage defence associations, associations of ranchers and farmers, hunters (xuretec), environmental NGOs (Axure), Portugal, neighbourhood associations, Emergencies, Xunta (rural development and natural park management departments). Responsible for the design are all the stakeholders with the leadership of Xunta: Councils, forest communities, owners of rustic plots, heritage defence associations, associations of ranchers and farmers, hunters (xuretec), environmental NGOs (Axure), Portugal, neighbourhood associations, Emergencies, Xunta (rural development and natural park management departments).
How should the implementation of the tool look like?	Definition of goals and a yearly plan with clear responsibilities for the Community. Specific performance KPIs should be defined. Organization of periodic meetings and workshop and also a review of the tasks developed pre and post. Final review of the implementation of the year Responsible for the implementation are all the stakeholders with the leadership of Xunta: Councils, forest communities, owners of rustic plots, heritage defence associations, associations of ranchers and farmers, hunters (xuretec), environmental NGOs (Axure), Portugal, neighbourhood associations, Emergencies, Xunta (rural development and natural park management departments).
What should be taken into account	Stakeholders engagement is challenging and clear leadership of the organization and facilitation should be defined



for the maintenance of the tool?	
ASSIGNMENTS/COMMENTS	
DRM PHASE	Prevention, preparedness, response
TIME PERSPECTIVE	Can be implemented SHORT TERM (within one year)
ADDITIONAL COMMENTS	<p>Communities and Associations for fire risk prevention (following the example heritage defence associations): analyze land stewardship agreements with landowners (recovering traditional practices as intangible heritage, for example, moisture retention). See how to move the insight of the community from a short term approach (intensive exploitation or tourist promotion) to a more long-term one (putting in value the cultural and natural heritage in an integrated way).</p> <p>The final users are all the stakeholders: Councils, forest communities, owners of rustic plots, heritage defence associations, associations of ranchers and farmers, hunters (xuretec), environmental NGOs (Axure), Portugal, neighbourhood associations, Emergencies, Xunta (rural development and natural park management departments).</p>
STAKEHOLDER STRUCTURE	
ORGANISATIONS	<p>Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA) Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestall Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidade de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal</p>

1.3.2 Strategic blueprint 20

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	20
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia
TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	Germplasm Bank
How can the identified tool improve the current situation?	Is a collection of living plant material; on that terms is an NbS. The general objective of this tool is to create a methodology to locate, collect and conserve plants considered of priority interest for the conservation of the natural heritage of the Open Lab.
How should the design of this tool look like?	<p>For each specie, a file will be generated with the identification and collection methodology, as well as other environmental recommendations to be taken into account, so that the collection does not affect the natural environment of the park. In the context of SHELTER project and in order to study the feasibility and effectiveness of this tool, a specific pilot study of hydrological-forest restoration with birch will be carried out in an area of degraded troughs of the Open Lab.</p> <p>Responsible for the design should be Xunta of Galicia (Conselleria de Medio Ambiente, Territorio e Vivenda. Dirección Xeral de Patrimonio Natural)</p>
How should the implementation of the tool look like?	<p>Xunta (natural park management) will lead the development that will be subcontracted</p> <p>Responsible for the implementation should be Xunta of Galicia (Conselleria de Medio Ambiente, Territorio e Vivenda. Dirección Xeral de Patrimonio Natural)</p>
What should be taken into account for the maintenance of the tool?	Financing resources are key and the maintenance should include a clear definition of the applicability of the plant material.
ASSIGNMENTS/COMMENTS	
DRM PHASE	Prevention, preparedness, recovery
TIME PERSPECTIVE	Can be implemented in MID TERM (1-3 years)
ADDITIONAL COMMENTS	<p>This tool implies no sensors to be used that requires an official Request Letter (already presented and approved)</p> <p>The Open Lab already has 4 Meteorological Stations (3 inside the natural park and another in the surroundings) that can provide meteorological information that also is useful to assess the fire propagation capacity</p>

	The final user is Xunta of Galicia (Conselleria de Medio Ambiente, Territorio e Vivenda. Dirección Xeral de Patrimonio Natural)
STAKEHOLDER STRUCTURE	
ORGANISATIONS	<p>Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA) Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestal Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidade de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal</p>

1.3.3 Strategic blueprint 21

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	21
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia
TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	Collaborative mapping of land uses (regional scale) and/or Collaborative mapping of roads (local scale and quick update)
How can the identified tool improve the current situation?	
How should the design of this tool look like?	

How should the implementation of the tool look like?	Responsible for the implementation should be Xunta-OT, Concellos and Extinction Services.
What should be taken into account for the maintenance of the tool?	
ASSIGNMENTS/COMMENTS	
DRM PHASE	Prevention, preparedness
TIME PERSPECTIVE	NTR
ADDITIONAL COMMENTS	Not prioritized
STAKEHOLDER STRUCTURE	
ORGANISATIONS	Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA) Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestall Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidade de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal

1.3.4 Strategic blueprint 22

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	22
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia

TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	An edaphological study that can be generic (Galicia) or specific for the study area
How can the identified tool improve the current situation?	The evolution of Galicia is towards the loss of soil because geology gives poor soil and with fires and climate change the loss of soil is a matter of great relevance and that is increasing.
How should the design of this tool look like?	
How should the implementation of the tool look like?	Responsible for the implementation should be University, Xunta
What should be taken into account for the maintenance of the tool?	
ASSIGNMENTS/COMMENTS	
DRM PHASE	Prevention, preparedness
TIME PERSPECTIVE	
ADDITIONAL COMMENTS	Not prioritized
STAKEHOLDER STRUCTURE	
ORGANISATIONS	Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA) Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestal Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidade de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés

	Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal
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1.3.5 Strategic blueprint 23

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	23
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia
TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	Coordination in Surveillance (at the local level and especially for periods in which there is no established surveillance)
How can the identified tool improve the current situation?	Lack of coordination allows identifying the opportunity of malice and also allows addressing the threat that the origin of the fires is multiple and dispersed.
How should the design of this tool look like?	
How should the implementation of the tool look like?	Responsible for the implementation should be Councils, mountain communities, owners of rustic plots, associations of ranchers and farmers, environmental NGOs (Axure), neighbourhood associations, Emergencies, Xunta (various Departments), Rural development
What should be taken into account for the maintenance of the tool?	
ASSIGNMENTS/COMMENTS	
DRM PHASE	Prevention, preparedness, response
TIME PERSPECTIVE	
ADDITIONAL COMMENTS	Not prioritized
STAKEHOLDER STRUCTURE	
ORGANISATIONS	Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA)

	<p>Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestall Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidade de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal</p>
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1.3.6 Strategic blueprint 24

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	24
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia
TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	112 invested, risk self-management and citizen co-responsibility
How can the identified tool improve the current situation?	
How should the design of this tool look like?	
How should the implementation of the tool look like?	Responsible for the implementation should be Emergencies, Councils, forest communities, owners of rustic plots, associations of ranchers and farmers, environmental NGOs (Axure), neighbourhood associations, Xunta (various departments), and park management
What should be taken into account for the	

maintenance of the tool?	
ASSIGNMENTS/COMMENTS	
DRM PHASE	Preparedness, response
TIME PERSPECTIVE	
ADDITIONAL COMMENTS	Not prioritized
STAKEHOLDER STRUCTURE	
ORGANISATIONS	<p>Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA) Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestall Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidad de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal</p>

1.3.7 Strategic blueprint 25

STRATEGIC BLUEPRINT – SHELTER PROJECT	
ID	25
OL ASSIGNMENT	Baixa Limia-Serra Do Xures Natural Park in Galicia
TOPIC	NBS solutions against wildfire risks
DESCRIPTION	
IDENTIFIED SOLUTION	Dashboard, data services on fire risk: customization of the data to be used by the agents.
How can the identified tool	

improve the current situation?	
How should the design of this tool look like?	
How should the implementation of the tool look like?	Responsible for implementation should be Concellos, Emergencies, Xunta-Meteor Galicia and Xunta-OT, Rural Development and park management.
What should be taken into account for the maintenance of the tool?	
ASSIGNMENTS/COMMENTS	
DRM PHASE	Prevention, preparedness, recovery
TIME PERSPECTIVE	
ADDITIONAL COMMENTS	Not prioritized
STAKEHOLDER STRUCTURE	
ORGANISATIONS	Dirección Xeral de Calidade Ambiental e Cambio Climático Dirección Xeral de Desenvolvemento Rural Subdirección Xeral de Meteoroloxía e Cambio Climático Axencia Galega de Emerxencias (AXEGA) Subdirección Xeral de Espazos Naturais Dirección Xeral de Defensa do Monte Dirección Xeral de Patrimonio Cultural Dirección Xeral de planificación e ordenación forestall Axencia Galega de Innovación (GAIN) Instituto de Estudos do Territorio (IET) Concello de Bande Concello de Lobeira Concello de Muíños Concello de Calvos de Randín Concello de Lobios Comunidade de montes Rural land owners (Propietarios de parcelas rústicas) Galician Forestry Association (https://asociacionforestal.gal/quen-somos/) Cultural Heritage Associations- NGOs Agricultural cooperatives in Xurés Cooperativas agro-ganaderas de Xurés (http://agaca.coop/) Hunters Associations- Asociación de Tecores del Parque Natural Baixa Limia-Serra do Xurés Neighbourhood associations Environmental NGOs- AXURE Key stakeholders in Portugal