



General information

Description	This study uses a connectivity index to help prioritize post-fire emergency actions for soil erosion reduction.	
Geographical area	Galicia	
Date	June 2018	
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Tool type	Case studies	
Tool format	Text	
Language	Spanish	
Risk management plans to which the tools can be added	Soil degradation risk management plan	
Risk management plans link	https://plurifor.efi.int/wp-content/uploads/WP2/plans/Soil-degradation-plan_ES.pdf	
This tool is...	<input checked="" type="checkbox"/> a new tool	<input type="checkbox"/> an improved tool
Original tool of which this one is an improvement	Crema, S., & Cavalli, M. (2018). SedInConnect: a stand-alone, free and open source tool for the assessment of sediment connectivity. Computers & Geosciences, 111, 39-45.	

Topic

Risk	Soil degradation		
Risk component	<input checked="" type="checkbox"/> hazard	<input type="checkbox"/> impact	<input checked="" type="checkbox"/> vulnerability
Risk area	Risk management		
Risk phase	Rehabilitation/restoration		
Risk phase (alternative terms)	Response		
Level	Regional		
Sendai priorities	<input checked="" type="checkbox"/> Priority 1: Understanding disaster risk <input checked="" type="checkbox"/> Priority 2: Strengthening disaster risk governance to manage disaster risk <input checked="" type="checkbox"/> Priority 3: Investing in disaster risk reduction for resilience <input type="checkbox"/> Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction		
Contribution to Sendai targets	<input type="checkbox"/> Reduce global disaster mortality <input checked="" type="checkbox"/> Reduce the number of affected people <input checked="" type="checkbox"/> Reduce the direct disaster economic loss <input checked="" type="checkbox"/> Reduce disaster damage to critical infrastructure <input type="checkbox"/> Increase the number of national and local disaster risk reduction strategies <input type="checkbox"/> Enhance international cooperation to developing countries <input checked="" type="checkbox"/> Increase availability of and access to multi-hazard early warning systems and disaster risk information and assessment		



Description and analysis

Summary

The selection and prioritization of areas with high risk of post-fire soil erosion is a critical step of the soil conservation carried out for the Forestry authorities in Galicia. This index will help in this task because it considers the susceptibility for the movement of sediments through a particular burned area.

Place in national/regional policy

Soil erosion mitigation plans after forest fires that is included in the Plan de prevención y defensa contra incendios forestales de Galicia (PLADIGA)

Goals and achievements

This index in combination with the soil burn severity will help to prioritize emergency actions to reduce post-fire erosion losses.

Stakeholders involved

Forestry authorities, managers and public companies

Implementation stage

It was implemented in a case of study. The results are available

State of technical knowledge

The modification of the hydrological connectivity index is based in previous research that quantifies the effect of soil burn severity on post-fire soil erosion.

Regulatory and/or socio-economic contexts

Potentially important socio-economic benefits avoiding flooding risks

Impacts of the tool

It will help to a better implementation of the soil conservation plan after wildfire improving the prioritization of the areas to be treated, a critical step in the post-fire soil stabilization planning

Implementation requirements and durability

Description of the implementation steps

- DEM and hydrological connectivity factors computation
- Soil burn severity evaluation
- Weighting factor computation

Governance

Centro de Investigación Forestal de Lourizán will be responsible of the improvement and implementation in other wildfire-affected area.

Regulatory framework

The tool has no regulatory framework

Human resources requirements

Personnel with GIS knowledge is needed, as well as knowledge in the soil burn severity evaluation.

Financial requirements

Low requirements. The hardest effort is made in the soil burn severity field assessment.

Technical requirements

Computer with GIS

Priorities identified for successful implementation of the tool (political, technical, human, financial...)

The field assessment of soil burn severity is crucial. For that purpose, trained personnel is needed



Challenges or risk factors (legal, financial, safety...) expected during the implementation and solutions proposed

The main challenge is to improve the tools for prioritization of areas to be rehabilitated after fire. This will provide a more effective response in the post-fire soil erosion risk mitigation

Additional and non-formal experiences to help the implementation of good practice

Forest managers with access to GIS

SWOT analysis

Strengths	Weaknesses
Tested tool for evaluating hydrological connectivity	Mapping needs to be done after fire, as the definition of the areas of highest hydraulic connectivity depends of soil burn severity. That variable is not possible to be predicted
Opportunities	Threats
Allows planning to reduce sediment delivery to rivers and populations	There is a need to test the how the modified index affects post-fire runoff

Lessons learnt

Evaluation process, if exists (internal or external)

Verbal feedback with forest managers.

Assessment of results (quantitative and qualitative) and comparison with main goals

Tool meets the original goals

Negative aspects identified

It is not possible to develop a pre-fire risk planning

Unexpected consequences (short- / mid- / long-term) and corrective measures implemented

None

Access to complete tool

Files	Conectividad.pdf
Web links	https://plurifor.efi.int/wp-content/uploads/WP2/tools/Soil-degradation-Connectivity.pdf