



UNIVERSITY OF
EASTERN FINLAND

Governing Nature-based Solutions for Urban Flood Management in Finland and Italy: A Legal Perspective on Sustainable Transitions

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Objectives

Nature-based Solutions (NbS)

Urban flooding risks

Rain gardens, bioswales, and constructed wetlands

Theoretical frameworks

Case studies rationale

EU law sources

Current steps

Integrate a legal perspective into Geels' transition theory

Explore links between NbS for flood
and SWM and EU law...

...and their implementation in Italy and Finland

Examine policymakers and public officials' perspective

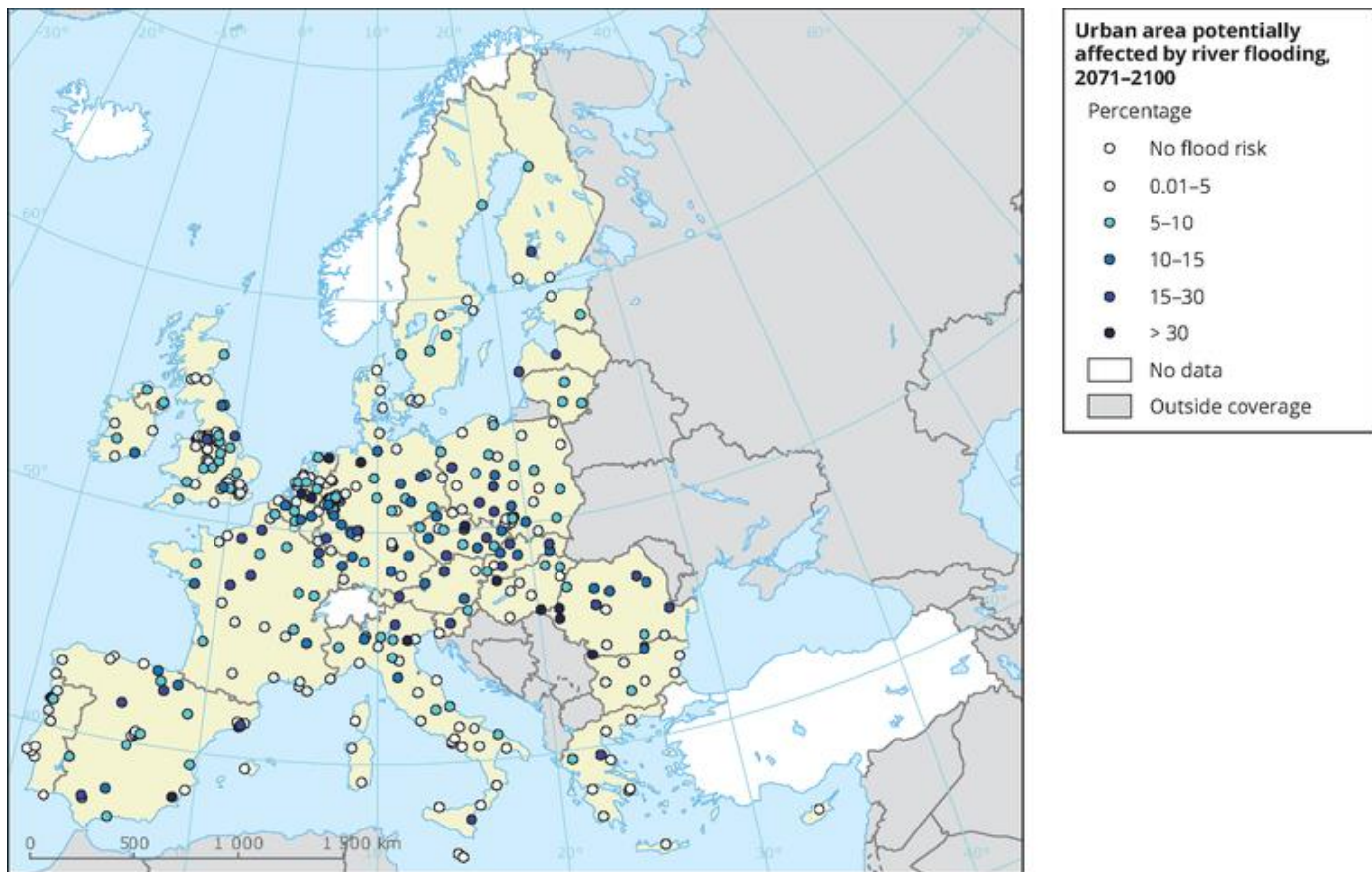
Inspired

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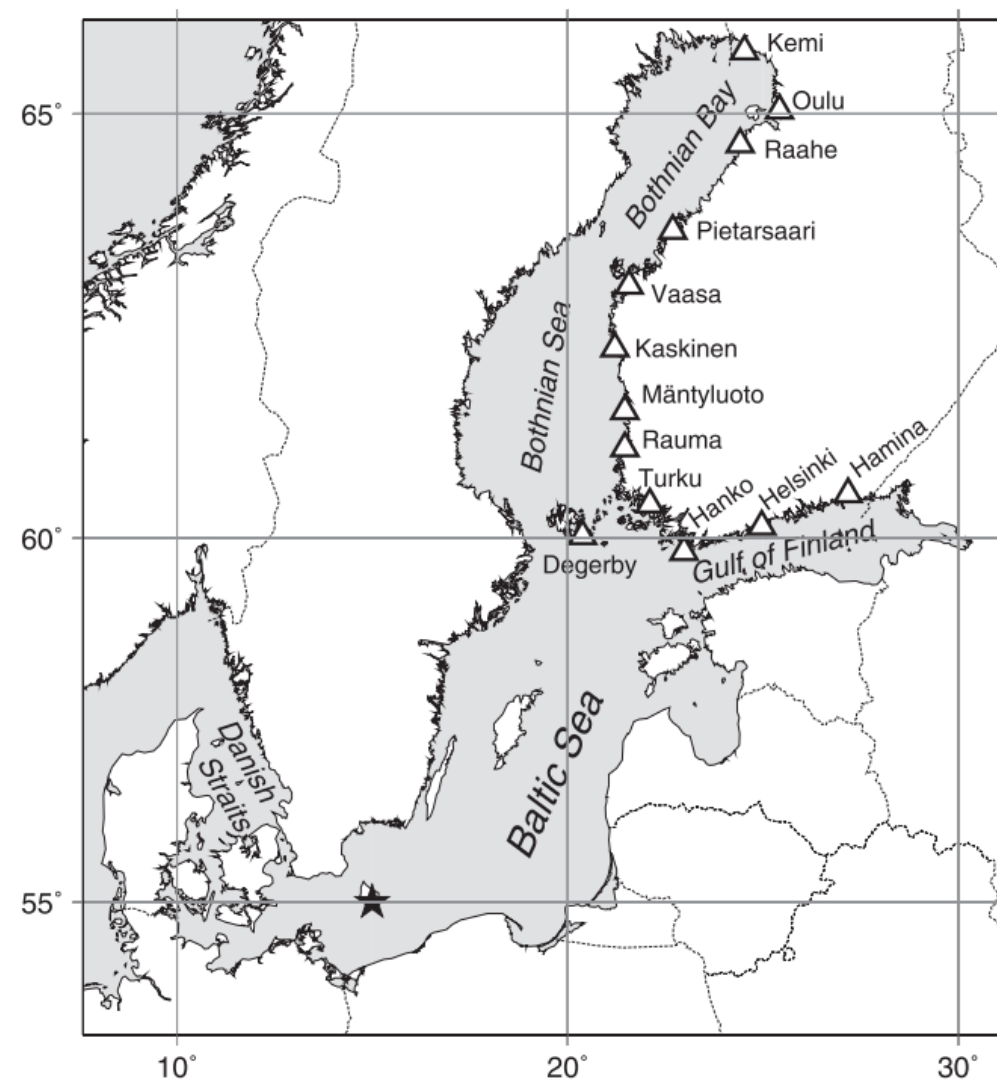
Supported

Adaptation_(EC, 2015)





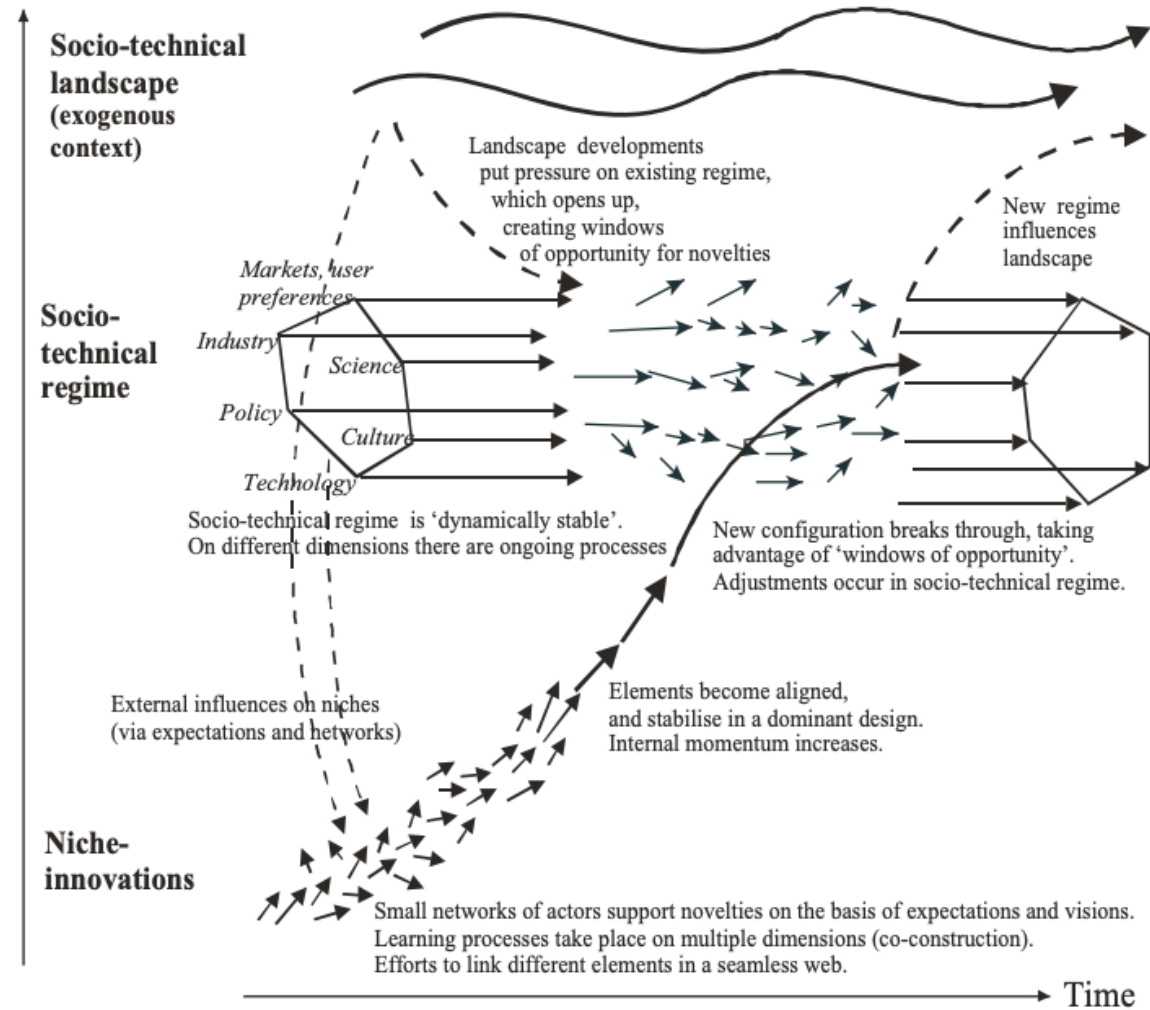
EEA, 2017



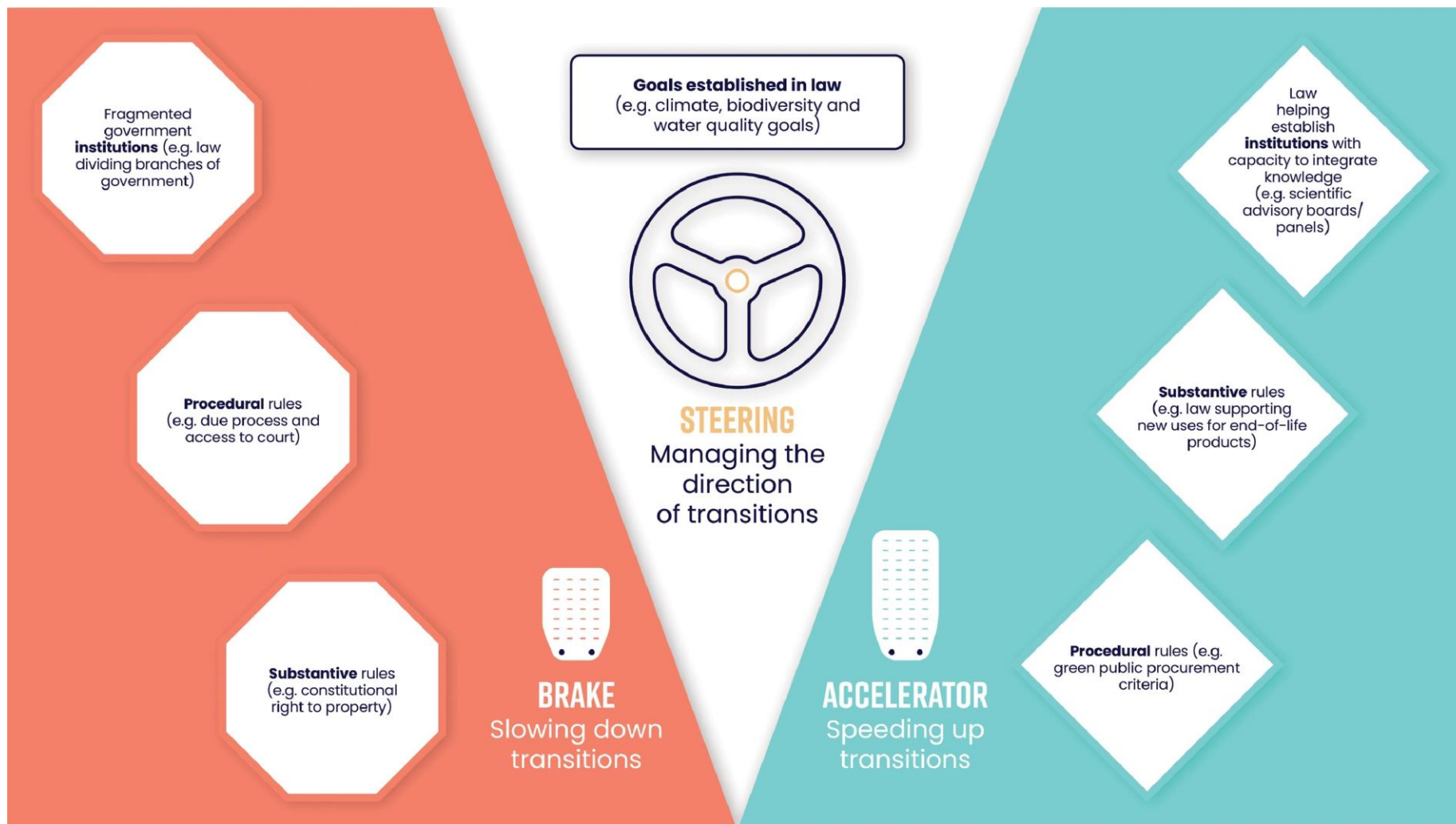
Pellikka *et al.* 2018

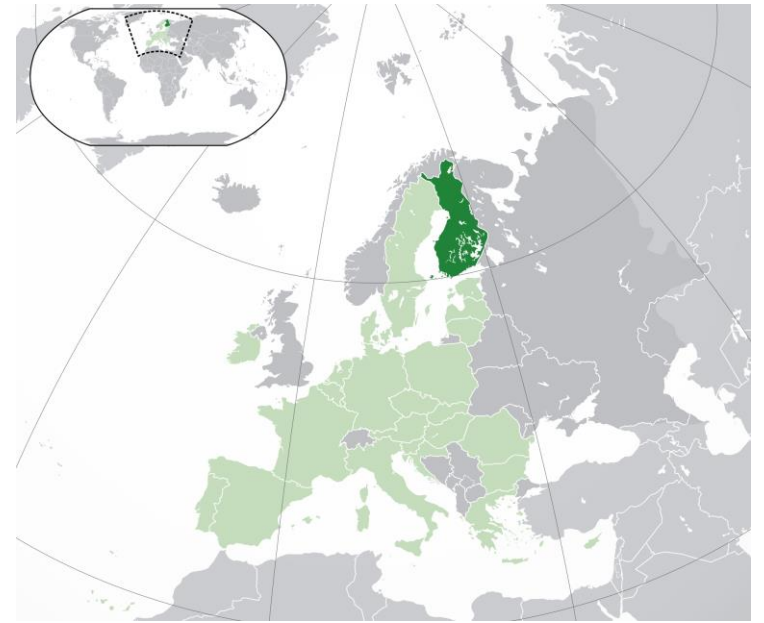
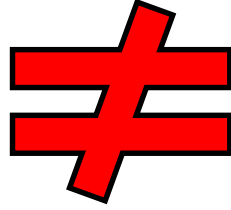


Increasing structuration
of activities in local practices



Geels 2011, adapted from Geels 2002





Culture (EU law implementation) (Häyrynen *et al.* 2022)

Precipitations trends (EEA, 2021)

Floods Directive

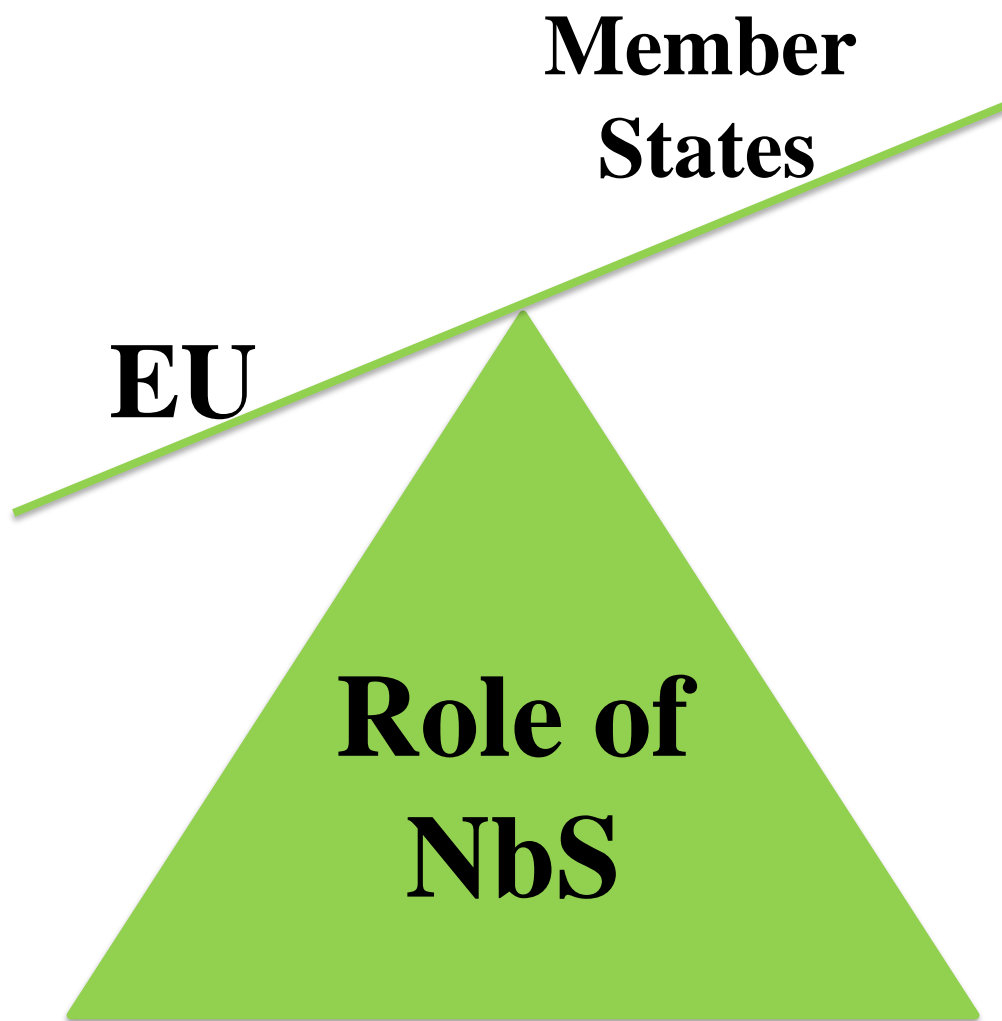
‘Multi-purpose use of bodies of water...’ (Recital 19)

EU Action Plan on Sendai Framework

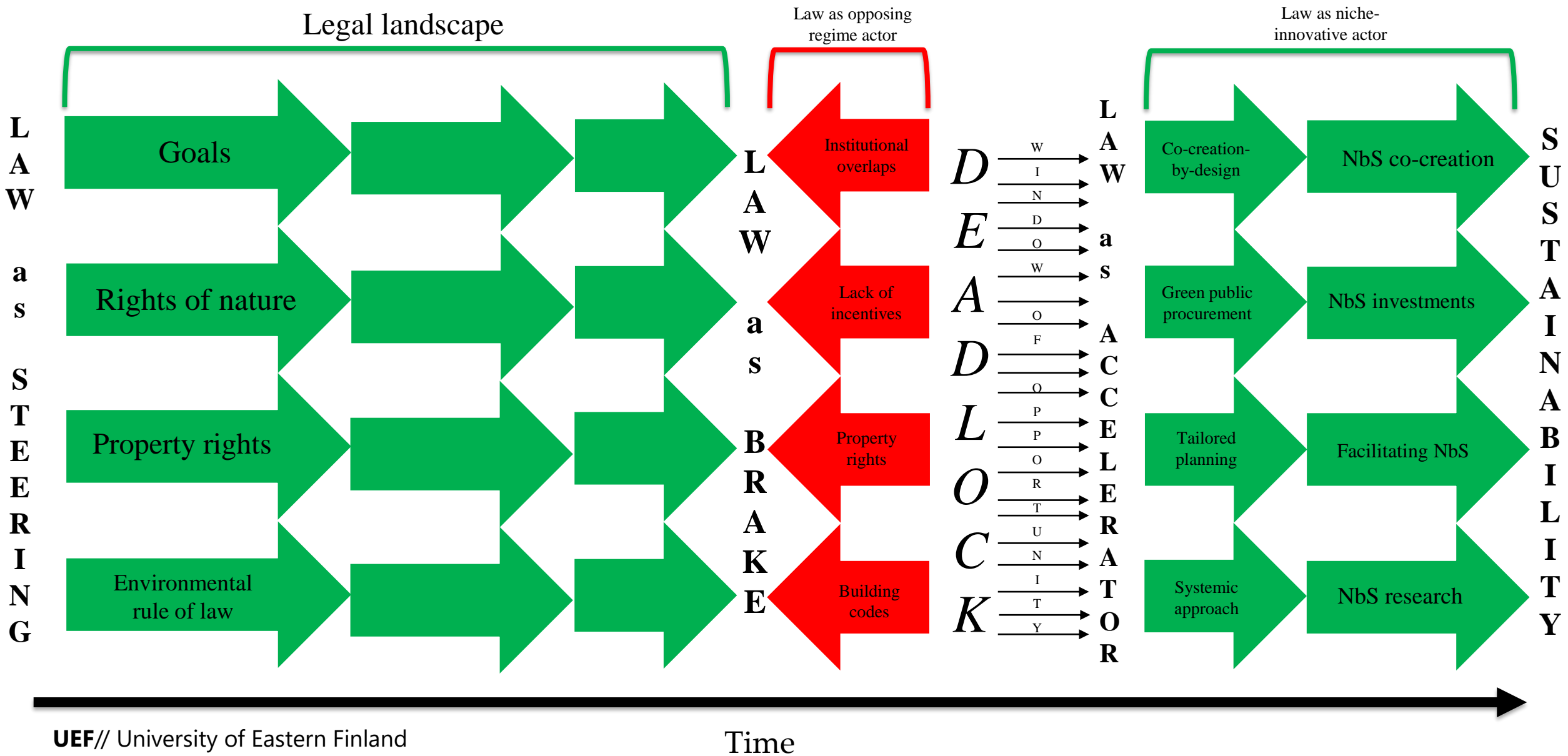
Explicit reference but...

EU Strategy on Adaptation to Climate Change

‘No-regret’, ‘triple dividend’ measures



LEGAL MLP IN GEELS' TRANSITION THEORY



HARMONISED FLOOD RISK EVALUATION METHOD

‘Blue factor’

Catchment, river, portion of river

3 flood return periods

Number of NbS x area covered

Blue factor for 1st return period

Blue factor for 2nd return period

Blue factor for 3rd return period

EC (2015) *Towards an EU Research and Innovation policy agenda for Nature-Based Solutions and Re-Naturing Cities: Final Report of the Horizon 2020 Expert Group on Nature-Based Solutions and Re-Naturing Cities*. Luxembourg: Publications Office of the European Union.

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Geels, F.W. (2002) Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy* 31, pp. 1257-1274.

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Häyrynen, S., Farinella, D., Mononen, T. (2022) The Local Culturalisation of Pro-Environmental Policy: Cultural responses to organic farming in Sardinia and Finnish Kainuu. *International Journal of Sociology of Agriculture and Food* 28(1), pp. 23-39.

Pellikka, H., Leijala, U., Johansson, M.M., Leinonen, K., Kahma, K.K. (2018) Future probabilities of coastal floods in Finland. *Continental Shelf Research* 157, pp. 32-42.

Soininen, N., Romppanen, S., Huhta, K., Belinskij, A. (2021) A brake or an accelerator? The role of law in sustainability transitions. *Environmental Innovations and Societal Transitions* 41, pp. 71-73.