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Forest restoration, biodiversity and ecosystem services

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Prof. dr Koen Kramer – WFC. 02-05-2022
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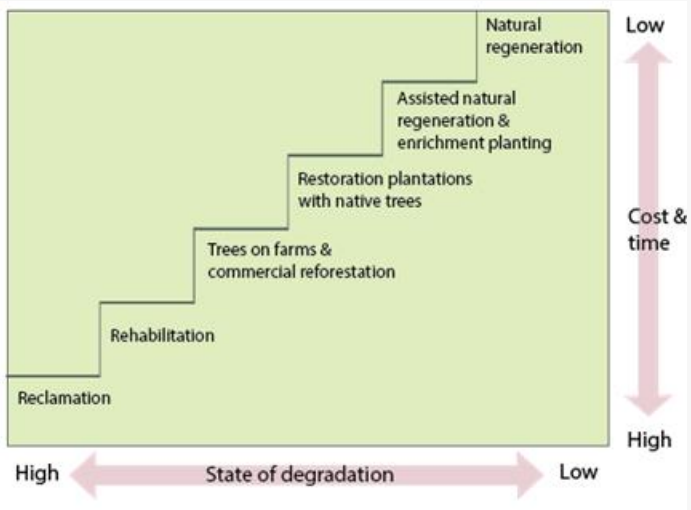
forest restoration in the face of climate change:

if you do what you did you don't get what you got

establishment conditions differ ->
consider regeneration strategy

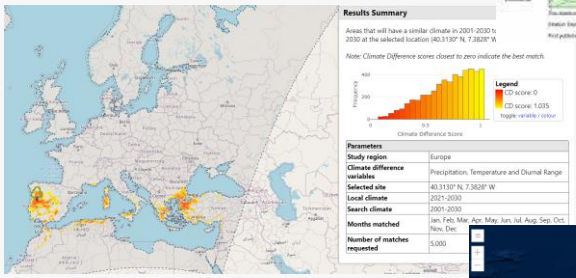


climatic conditions differ ->
consider:

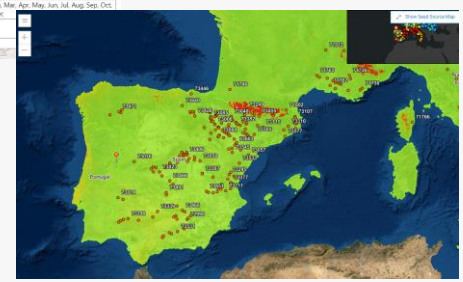
species distribution

Populus nigra

climate matching: provenance selection



seed sources



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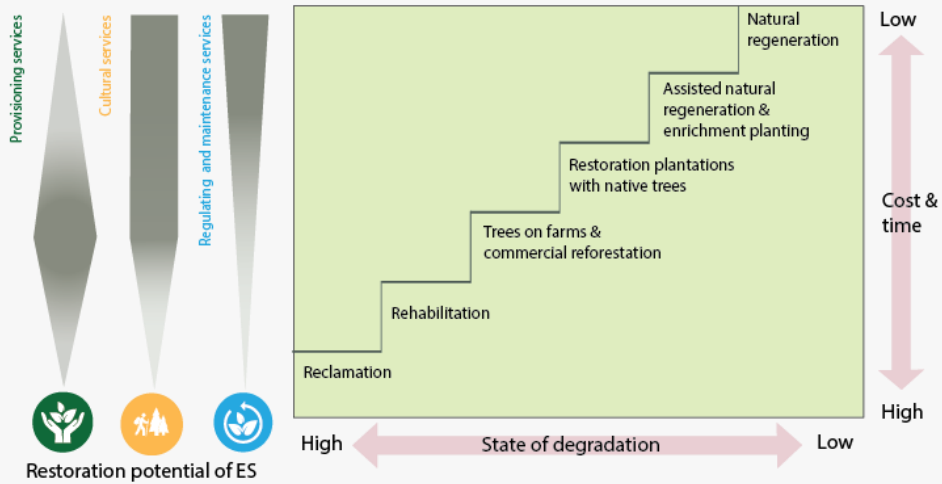
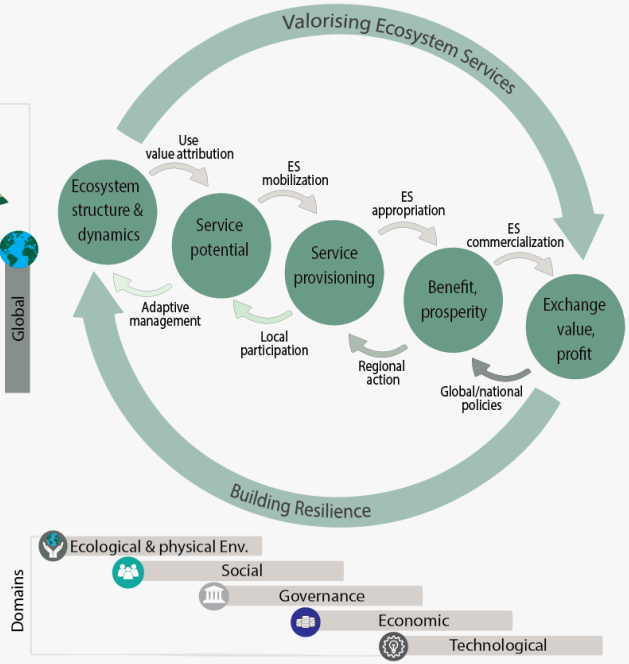
jointly value multiple ecosystem services





e.g.: develop CO2 sequestration equivalents for ecosystem service supply
(for some of the supportive, provisioning, regulating services)
in analogy of CO2E – CO2 radiative forcing equivalents

Forest Ecosystem Service Supply Cascade

Haines-Young & Potschin (2010); Kramer et al. (2022)

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develop and apply multi-stakeholder forest ecosystem service supply stress test

Resilience Rosetta

One Earth

Gold Standard for the Global Goals 1 ton of CO_2 offset

CellPress OPEN ACCESS

Perspective

Roadmap to develop a stress test for forest ecosystem services supply

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needs:

1. multiple forest restoration goals (beyond C)
2. integrated ES valuation: synergies and trade-offs between services & disservices
3. multiple-stakeholder assessment approaches

- accepted models on species distributions + climate change impacts
- agreed method for seed sampling; location of provenances and seed gardens
- data sources & models for assessment of indicators for stress test for forest ecosystem service supply

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