MOUNT RESILIENCE

The Path to Regional Transformative Adaptation

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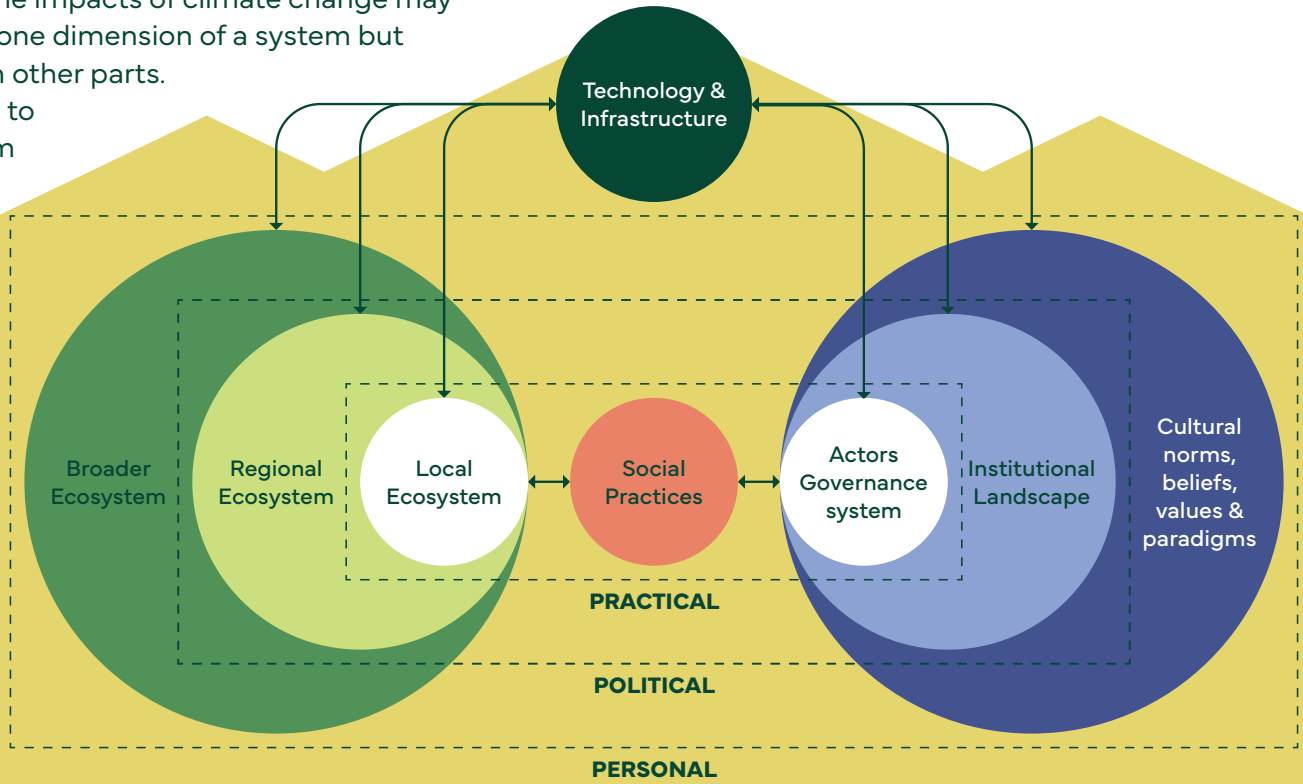
SYSTEMIC APPROACHES

In a systemic approach, we assume that change in one area (for example changes in the ecosystem) can have knock-on effects on other areas (i.e. in society or the economy). A socio-technological ecological system views a region as the interplay between ecosystems and human society and structures (e.g. ecosystem services like water and how they are used, but also managed, by society). The technologies we use influence how these two parts of the systems interact, as social practices highly depend on them (e.g. the type of irrigation technology available influences how and when we use water). It is therefore necessary to consider how a change in one area (for example the use of a new technology, the introduction of an NbS) may impact other parts of other systems. Similarly, the impacts of climate change may only immediately impact one dimension of a system but have a knock-on effect on other parts. That is why it is important to consider the whole system in a System Risk Assessment.

Questions for reflection

- How do natural conditions affect how decisions are made in your region (e.g. what sectors are considered important)? How is the natural environment part of and affected by your approach?
- How does your approach affect the social dimension – what groups of people are involved, what level of influence do they have, how are they affected?
- What are the (social) practices that need to change for your solution to be accepted and continuously used?



ECOSYSTEM SERVICES

Ecosystem services are the goods and services that nature provides to humans. They arise from the intricate interactions between ecological structures and processes, such as habitats, species, and nutrient cycles. These services can be categorized into regulating (e.g., air quality, climate regulation), provisioning (e.g., food, freshwater), and cultural (e.g., recreation, spiritual connections) types.

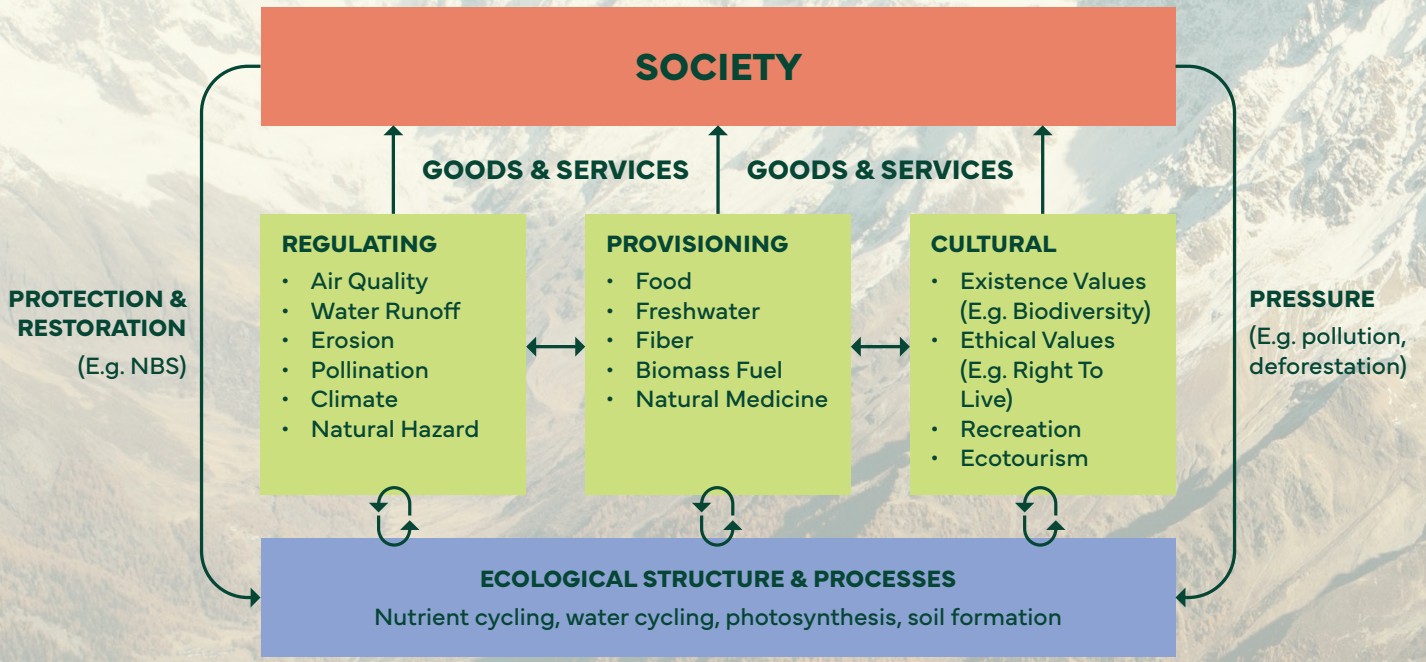
Human societies depend on these services for their well-being, security, and quality of life. However, human activities can degrade ecosystems and reduce their ability to provide these services. To ensure the sustainable flow of ecosystem services, it is essential to protect and restore ecosystems through measures such as nature-based solutions and effective governance.

Questions for reflection

- What are the most relevant ecosystems concerned by the intervention in your region? How are or will they be affected by climate change? How will your intervention affect these ecosystems?
- Who relies on those ecosystems?
- How are these ecosystems linked with other ecosystems? What might be trade-offs that result from your intervention, i.e. what changes in other ecosystems could result from your intervention?

Overview CICES

CICES V5.2 classifies ES and the goods they provide under three sections, all categorized between biotic and abiotic elements.



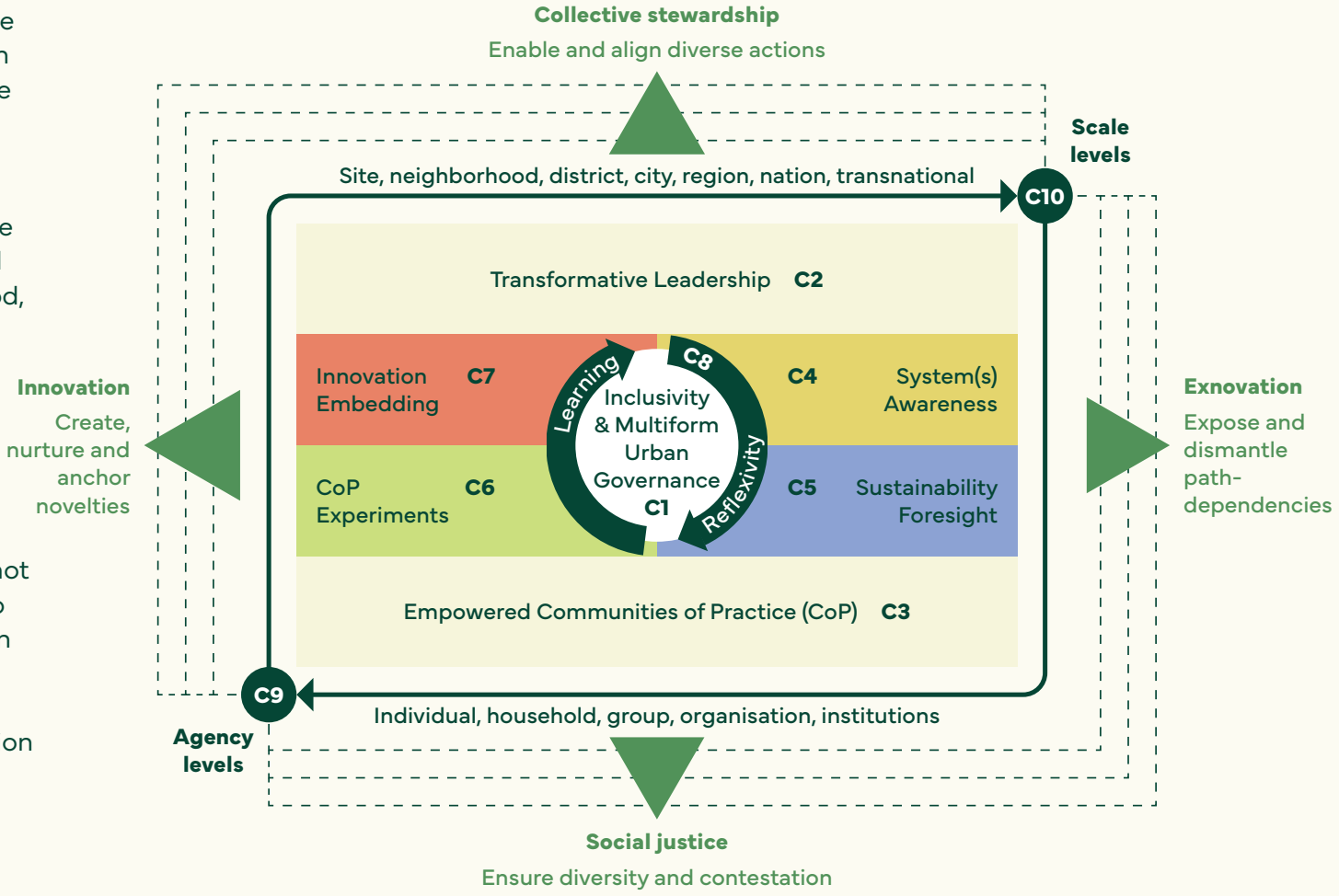
TRANSFORMATIVE CAPACITY

Transformative capacities describe the skills, capabilities and competences that enable people (from government, civil society, businesses or academia) to implement regional transformations and guide regional systems towards a more resilient state. Some capacities are referred to as more basic, such as natural resources, infrastructure or finance capital. More specific skills are those directly related to managing and reducing concrete climate threats, which include governance capacities. They relate to the ability to include diverse stakeholders in decision-making and stewardship of ecosystems or neighbourhood, but also to the ability to create and embed innovations.

Questions for reflection:

- Which actors in your regional system are not yet involved in regional climate action who should be? How could you support them in being more empowered?
- How could formal and informal collaboration in your region be strengthened?
- What political or structural barriers do you foresee in the implementation of your regional Demonstrator?

Wolfram, Marc. (2015). Conceptualizing urban transformative capacity: A framework for research and policy. Cities. 51. 10.1016/j.cities.2015.11.011.

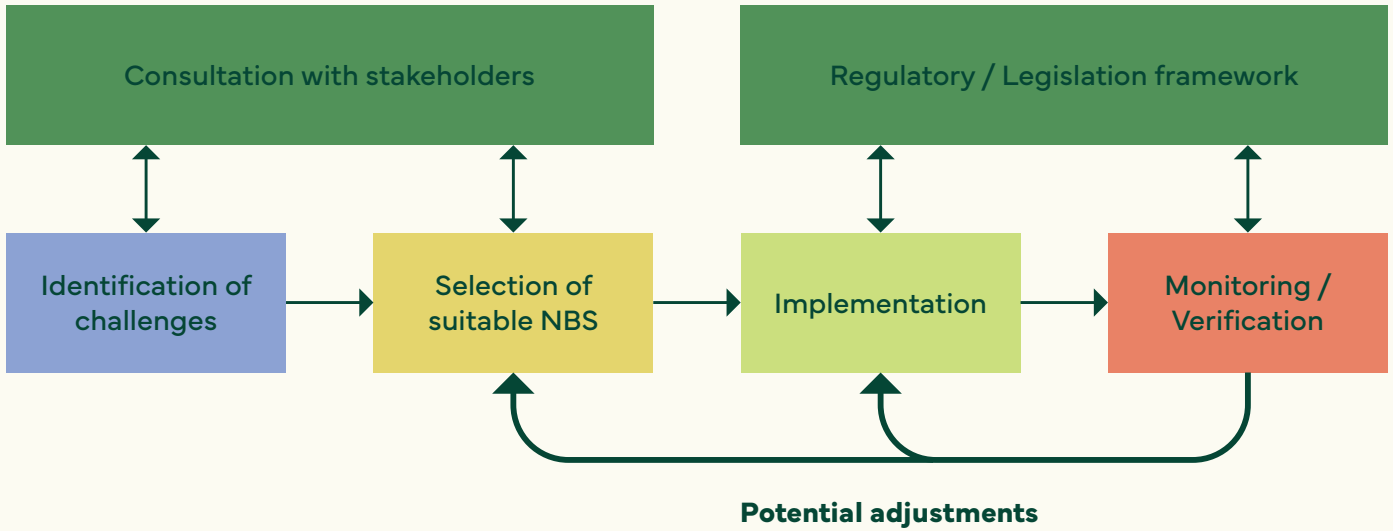


NATURE-BASED SOLUTIONS

Nature-based solutions are actions to protect, sustainably manage and restore natural or modified ecosystems. They address societal challenges effectively, simultaneously providing human well-being and biodiversity benefits. Nature-based solutions may include initiatives focused on: i) protecting nature, ii) restoring nature, iii) sustainably managing nature, or iv) creating ecosystems. They are linked to transformative change through (i) conserving biodiversity, reducing degradation; (ii) engaging local and indigenous people, fostering biodiversity-friendly development; (iii) improving climate change adaptation and disaster risk reduction. One key aspect to consider when designing and implementing NbS is the continuous inclusion of stakeholders.

Questions for reflection

- What aspects make your approach a nature-based solution? In what way does it interact with natural systems?
- Are different kinds of stakeholders, including vulnerable groups, involved in the design and decision making on your approach? Will they have a say in the long-term management and running of the solution/innovation?
- What people, structures, or ideas are in the way of developing and implementing nature-based solutions in your region? How could this be addressed?
- How are these ecosystems linked with other ecosystems? What might be trade-offs that result from your intervention, i.e. what changes in other ecosystems could result from your intervention?

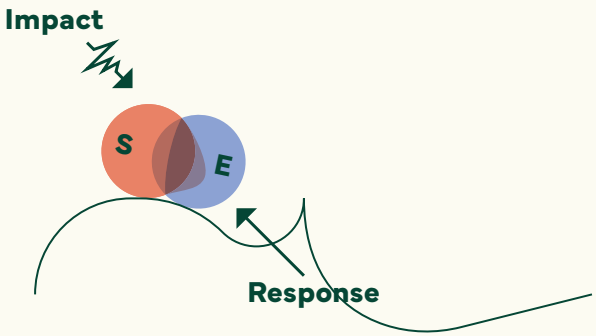


TRANSFORMATIVE ADAPTATION I

Transformative Adaptation describes a process that restructures the way regional ecosystems and societies are managed, and the changes in practices surrounding their maintenance and the use of ecosystem services. These changes are not only targeted at avoiding damage from immediate impacts of climate change, but also to prevent future disturbance. The objective is to ensure resilience and functionality of the ecosystem, the economic system and society in the long-term. Often, adaptation to climate change does not go this far.

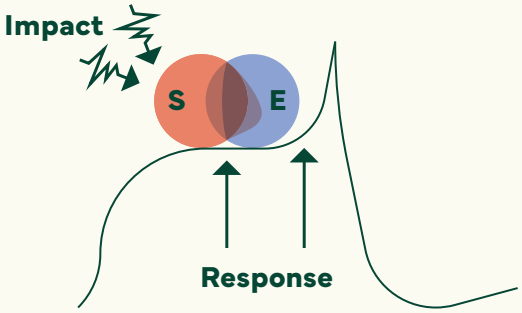
One single project, such as those in MountResilience, cannot singlehandedly accomplish transformative change in a region. However, each project can contribute to nudging the regional system in a more transformative direction.

- Maladaptation: immediate response to climate impacts that don't solve the problem in the long-term or even exacerbate the problem
- Coping describes actions that rebuild what has been destroyed (i.e. rebuilding a dam).
- Incremental adaptation describes doing small changes to the system to build resilience, i.e. using more fertiliser or changing crops. The danger is that unavoidable changes are just postponed. On the other hand, many activities of incremental adaptation can also lead to transformative adaptation.
- Transformative adaptation: Addressing the root causes of system vulnerability to climate change (i.e. revitalisation of rivers, moving population away from flood-prone areas)



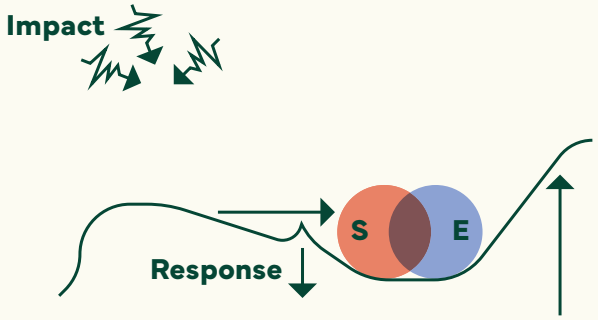
Coping

Crop field damages → Replanting crops



Incremental adaptation

Crop failure → Building irrigation



Transformative adaptation

Loss of crop suitability → Changing land-use

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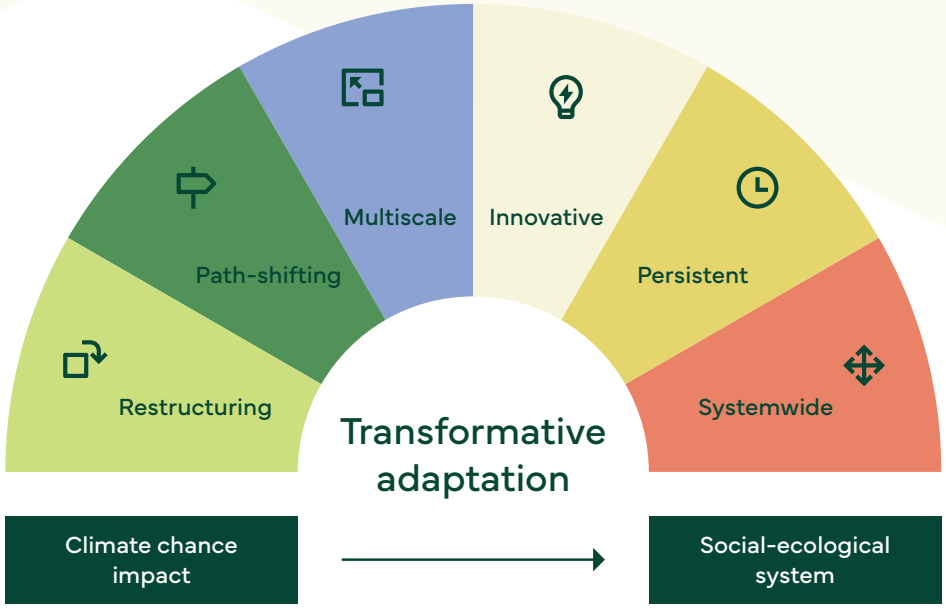
TRANSFORMATIVE ADAPTATION II

Here are six criteria that can help you assess whether initiatives are transformative and will provide long-term and lasting benefits for ecosystems and livelihoods:

- Restructuring: deep restructuring of your ecosystem or societal structures (i.e. values, knowledge, power relations) and a radical change of the interactions between humans and nature
  - For example, changing the way we perceive and use ecosystem services
- Path-shifting: ecosystem shifts towards an alternative stable state, shifts towards alternative socio-economic development pathways
  - For example, from a high water need crop to more diversified crops
- Innovative: new species or varieties in the ecosystem, social and technical innovation, re-evaluation and learning in the relations between people and nature
  - Innovations that are embedded in the regional system
- Multi-scale: at multiple spatial scales, across jurisdictional and societal levels, at multiple systems' scale (spatial, governance...)
  - Affecting the water availability further downstream or inspiring regulatory change at the national level
- Systemwide: large areas of the ecosystem or landscapes, widespread in societies and geographies, at large scale or systemic
  - Modifying a rural landscape across the entire region
- Persistent: hard to reverse without human input, persistent over several generations, future-oriented and long-term
  - Changes to a forest that will reinforce themselves over time



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