

The Multiple Resilience Dividends Framework: Rethinking Adaptation Decision-Making as a Transformative Approach for Sustainable Development

Presented by:



Oscar Higuera Roa

Systemic Risk and Resilience (SYRR) Group

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Co-authors:

Michaela Bachmann

Reinhard Mechler

Robert Sakic-Trogrlic



Context



EU Adaptation Mission

"[...] aims to create resilient regions [...] through smarter, swifter, and more systemic adaptation" (European Commission, 2021)

P2R will empower the **most vulnerable European regions** and communities to design **locally-led pathways** towards a climate-resilient future.



100+






Current Issues on Climate Adaptation

There is a need to reshape adaptation planning and decision-making (Helgeson and O'Fallon, 2021; Rözer et al., 2023).

- **SIZE & SCOPE:** Climate Change Adaptation is “*fragmented, small in scale, incremental, sector-specific, designed to respond to current impacts or near-term risks, and focused more on planning rather than implementation*” (IPCC, 2022, p. 50).
- **FINANCE GAP:** The overall funding allocated for building climate resilience, particularly the *financing flow towards adaptation, has been slowing down lately* (United Nations Environment Programme, 2023).
- **PERCEPTION:** Misconception that investing in climate resilience is *unnecessary unless there is an imminent disaster event* (Keefe, 2018; Helgeson and O'Fallon, 2021). Therefore, adaptation fails to find a *place in community priorities* (Keefe, 2018).

Emerging Questions

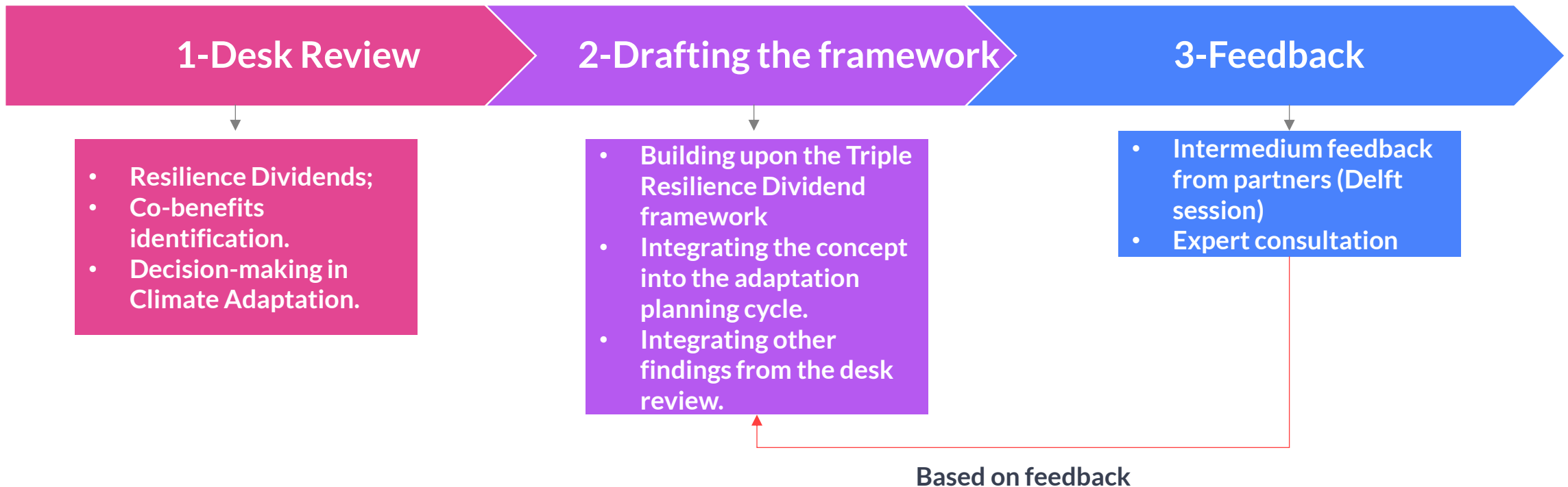
-  How can we help regions build climate resilience through smarter, swifter, and **more systemic adaptation**?
-  How can we make adaptation **more compelling** for decision-makers and appealing for investment?
-  How do we design for such an adaptation while **supporting multiple societal objectives** in practice?



Our Approach



Objective: To provide a decision-making framework that helps European regions identify, evaluate, and select adaptation options capable of delivering multiple resilience dividends across sectors.



Resilience benefits as a continuum

- Building resilience can **have broad and far-reaching positive impacts** across various sectors and domains
- An **opportunity** to inform decision-making and **adaptation planning** better.
- Build **the case for investing in climate adaptation**, going beyond risk reduction outcomes.



Temporality

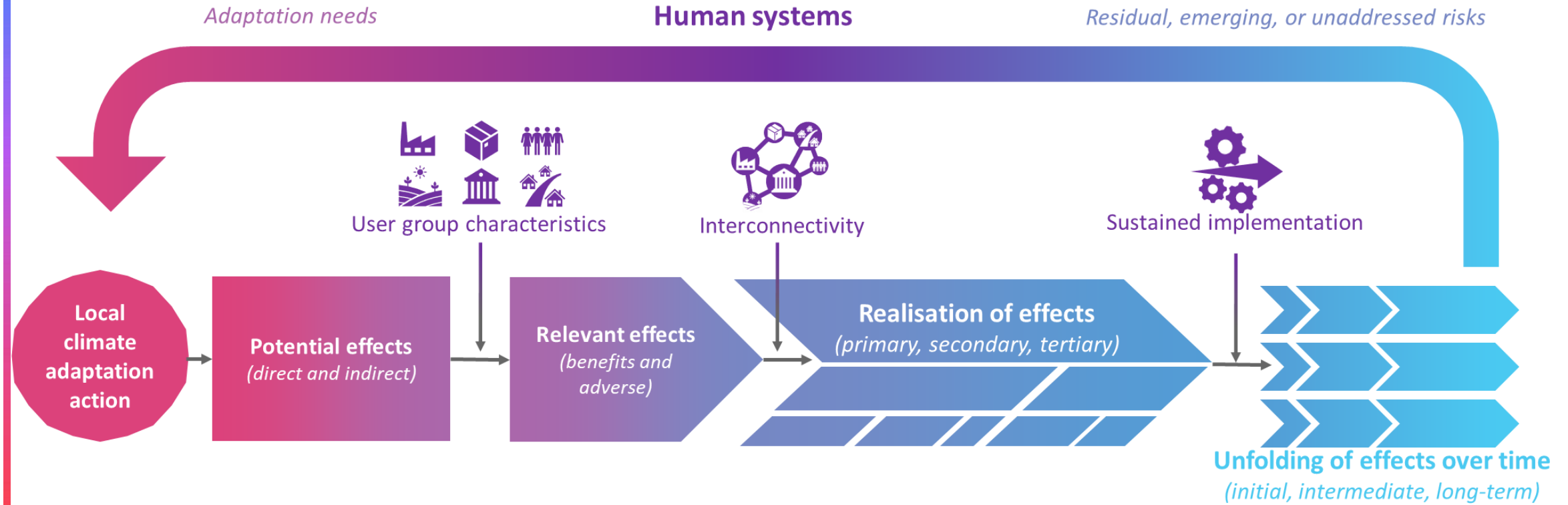


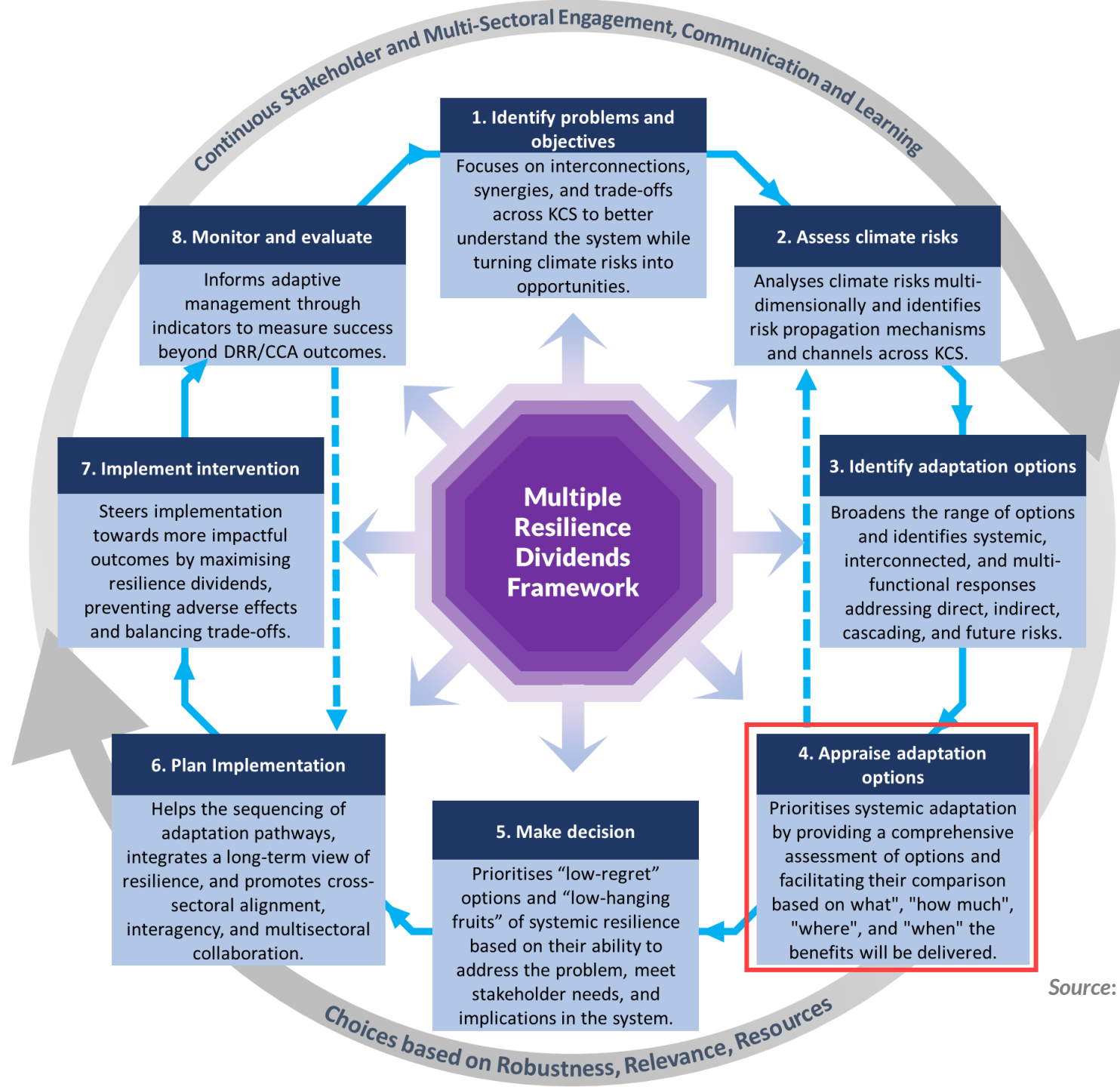
Receptivity



Interconnectedness

Dividends' realisation

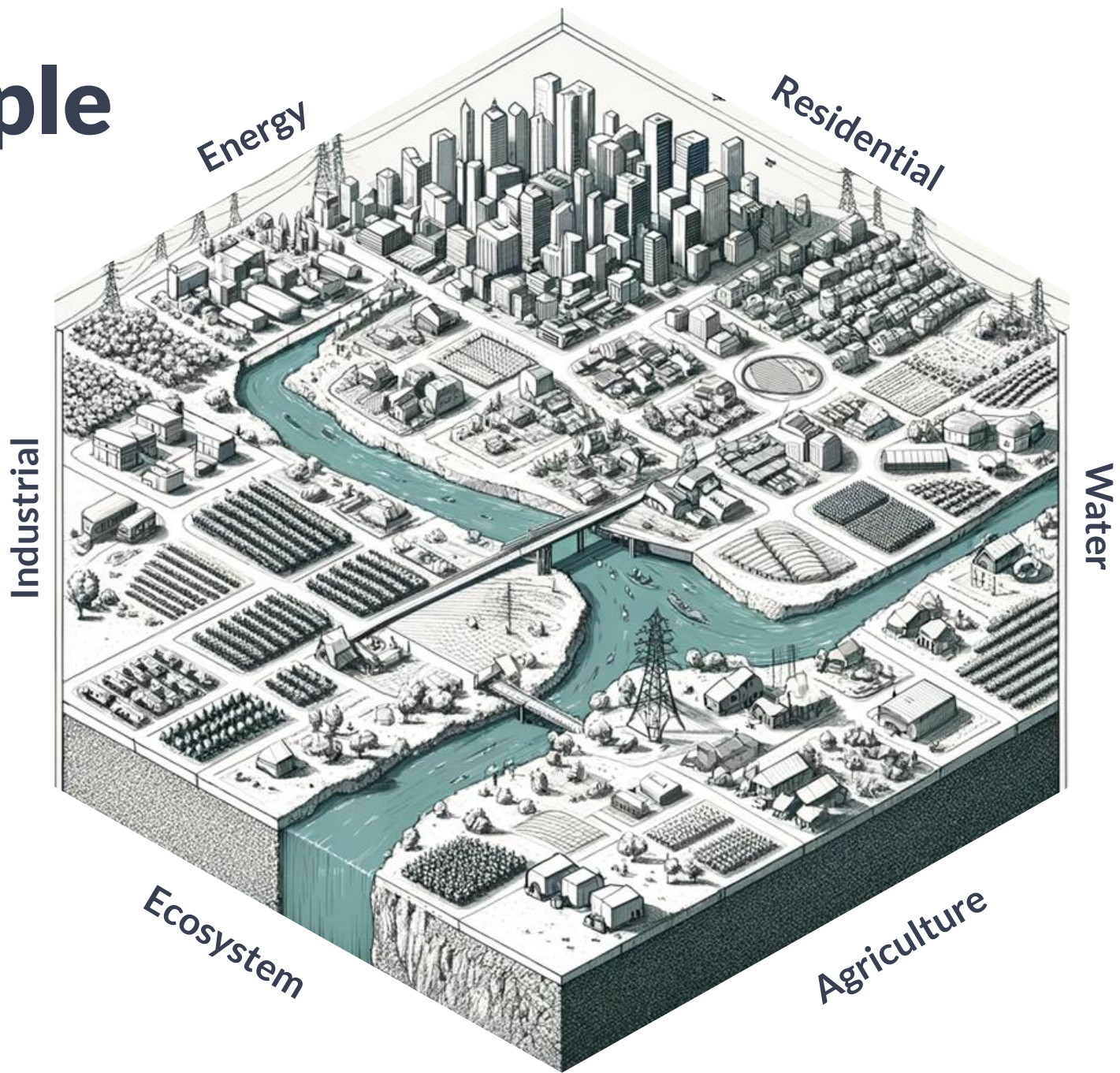




Source: (Higuera, Bachman & Sakic, 2024)



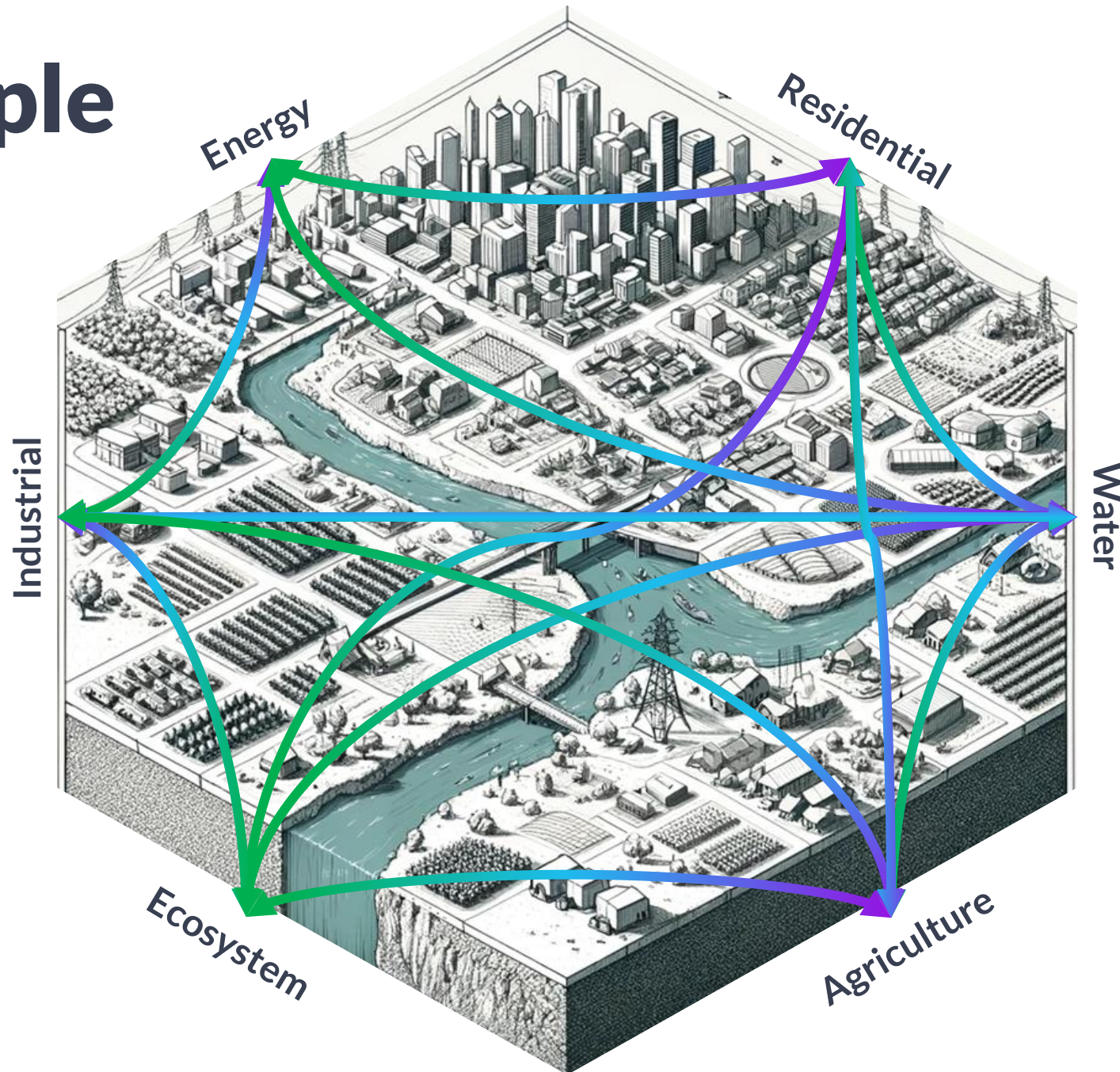
Example





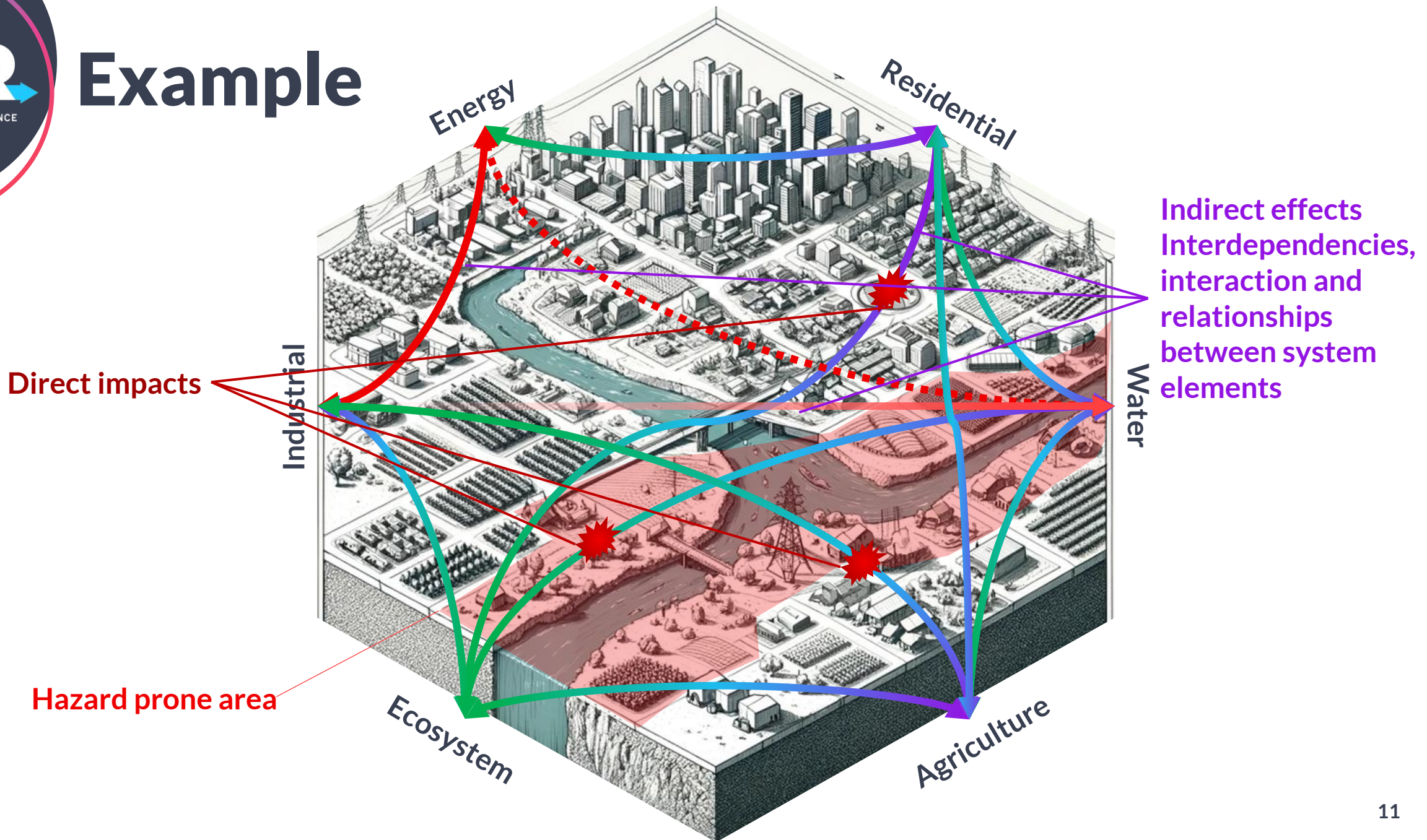
Example

Interconnections
Synergies
Trade-offs





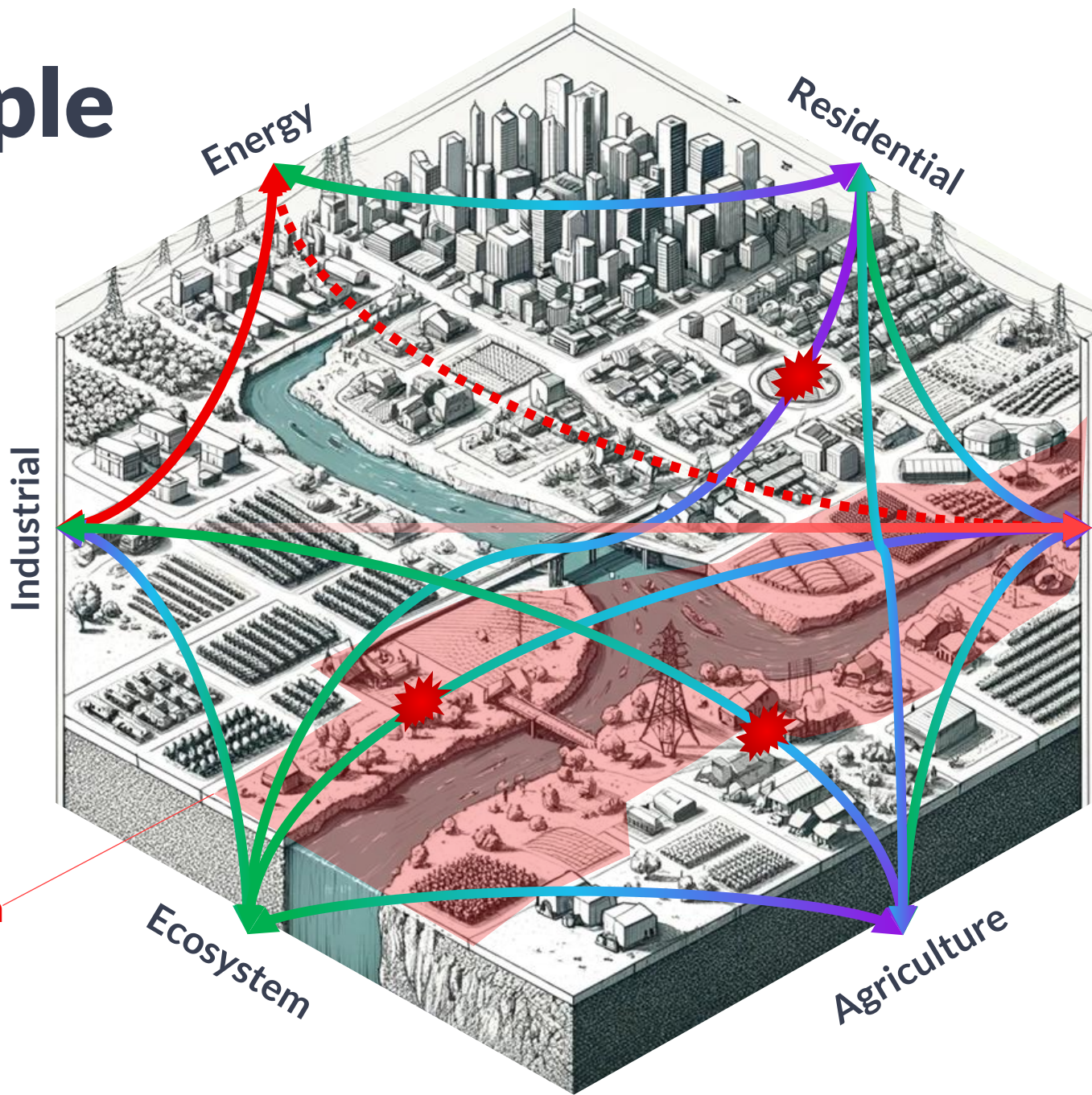
Example





Example

Multi-functional
Cross-sectoral
Systemic
Interconnected
interventions

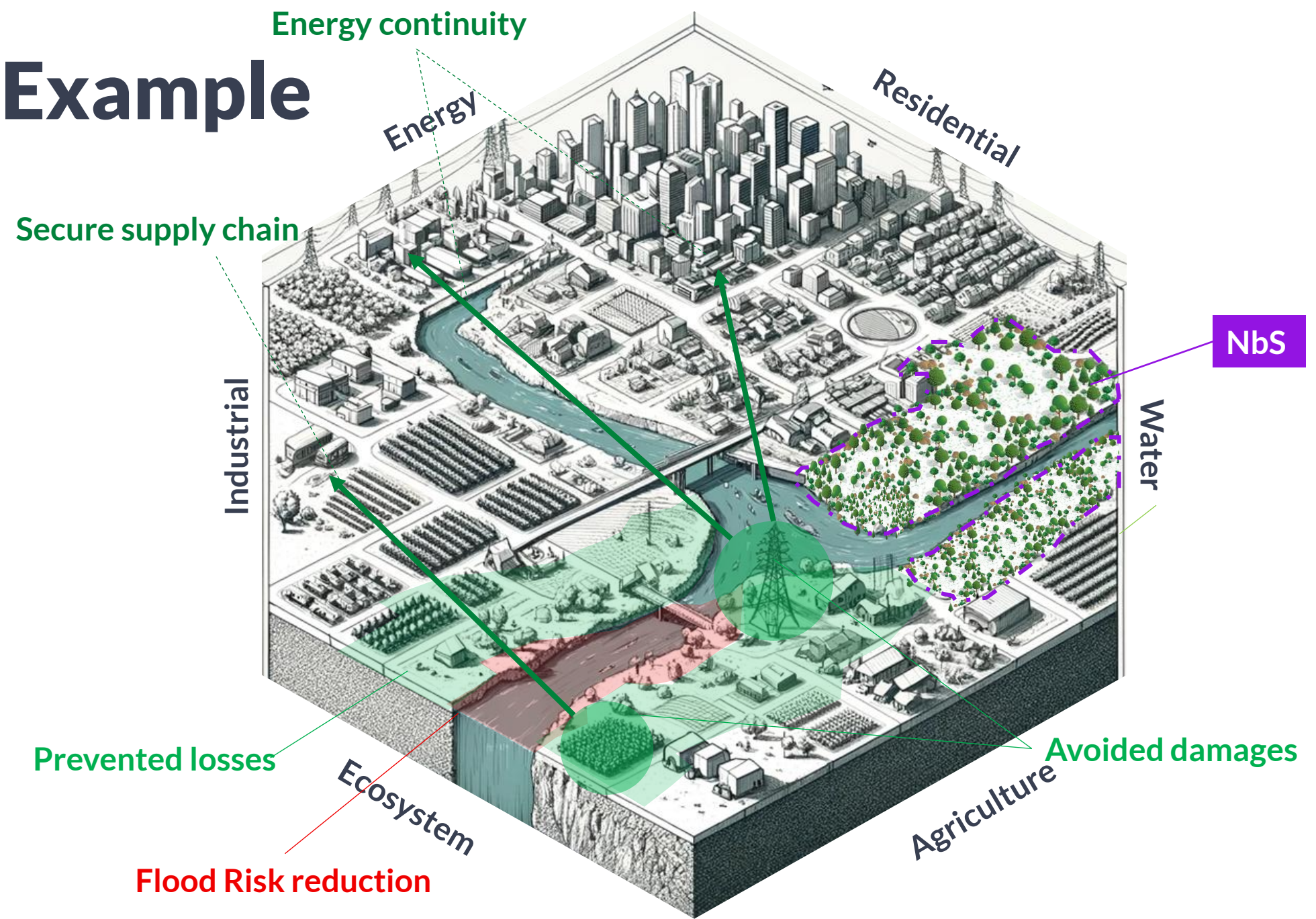


Hazard prone area





Example





Example

Reduced erosion and landslides

Prevented losses

Flood Risk reduction

Industrial

Ecosystem

Agriculture

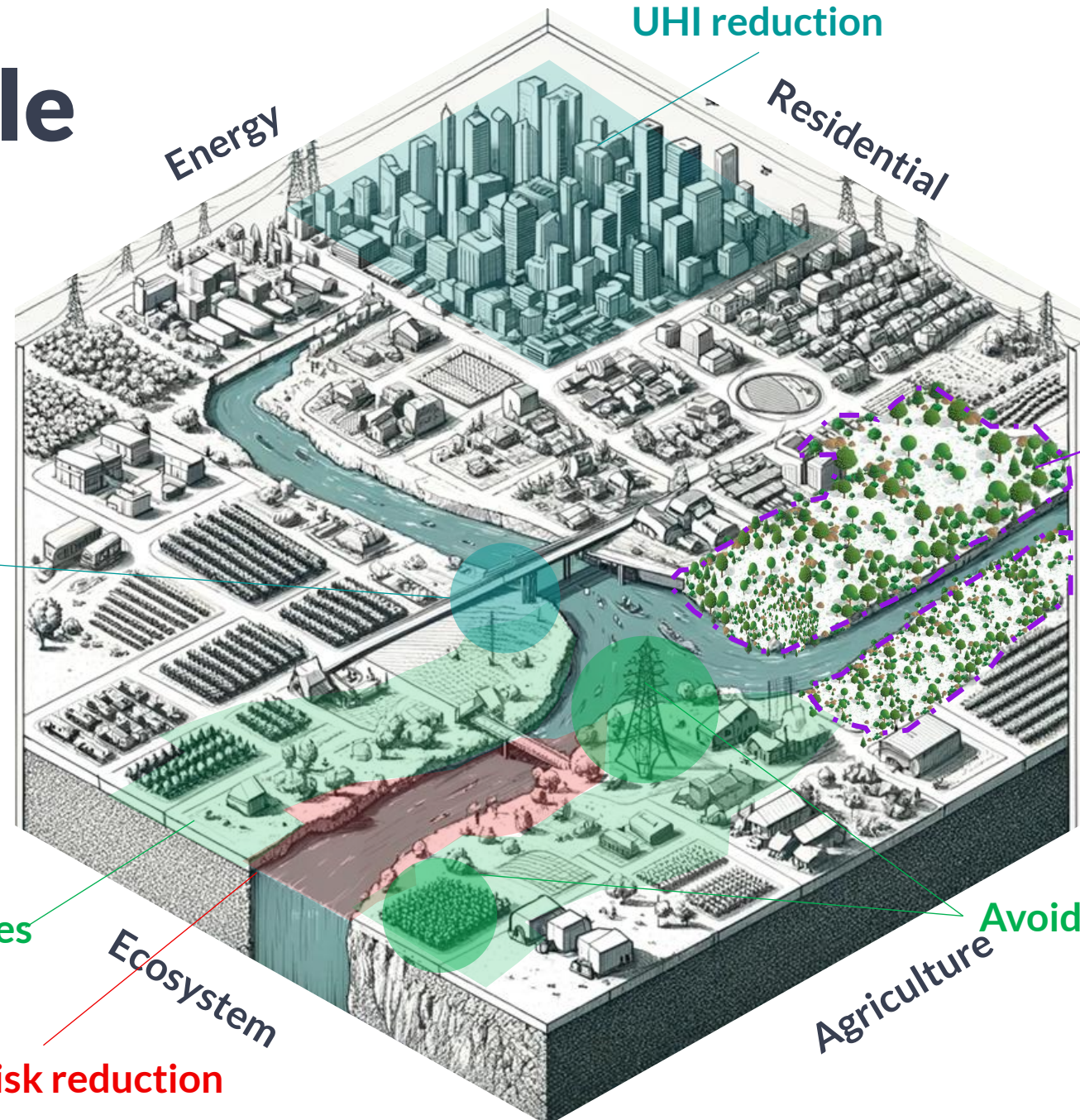
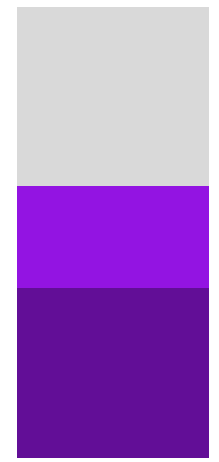
UHI reduction

Residential

NbS

Water

Dividends





Example

Reduced erosion and landslides

Prevent crop diseases

Prevented losses

Flood Risk reduction

Industrial

Ecosystem

Agriculture

Energy

UHI reduction

Residential

Property value increase

Wildlife habitat

NbS

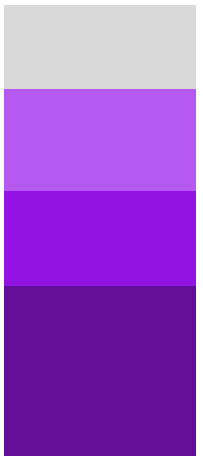
Improved water quality

Pollination

Water

Avoided damages

Dividends





Example

Reduced erosion and landslides

Prevent crop diseases

Prevented losses

Flood Risk reduction

Industrial

Ecosystem

Agriculture

Energy

UHI reduction

Residential

Diversified livelihoods (tourism)

Property value increase

Wildlife habitat

NbS

Improved water quality

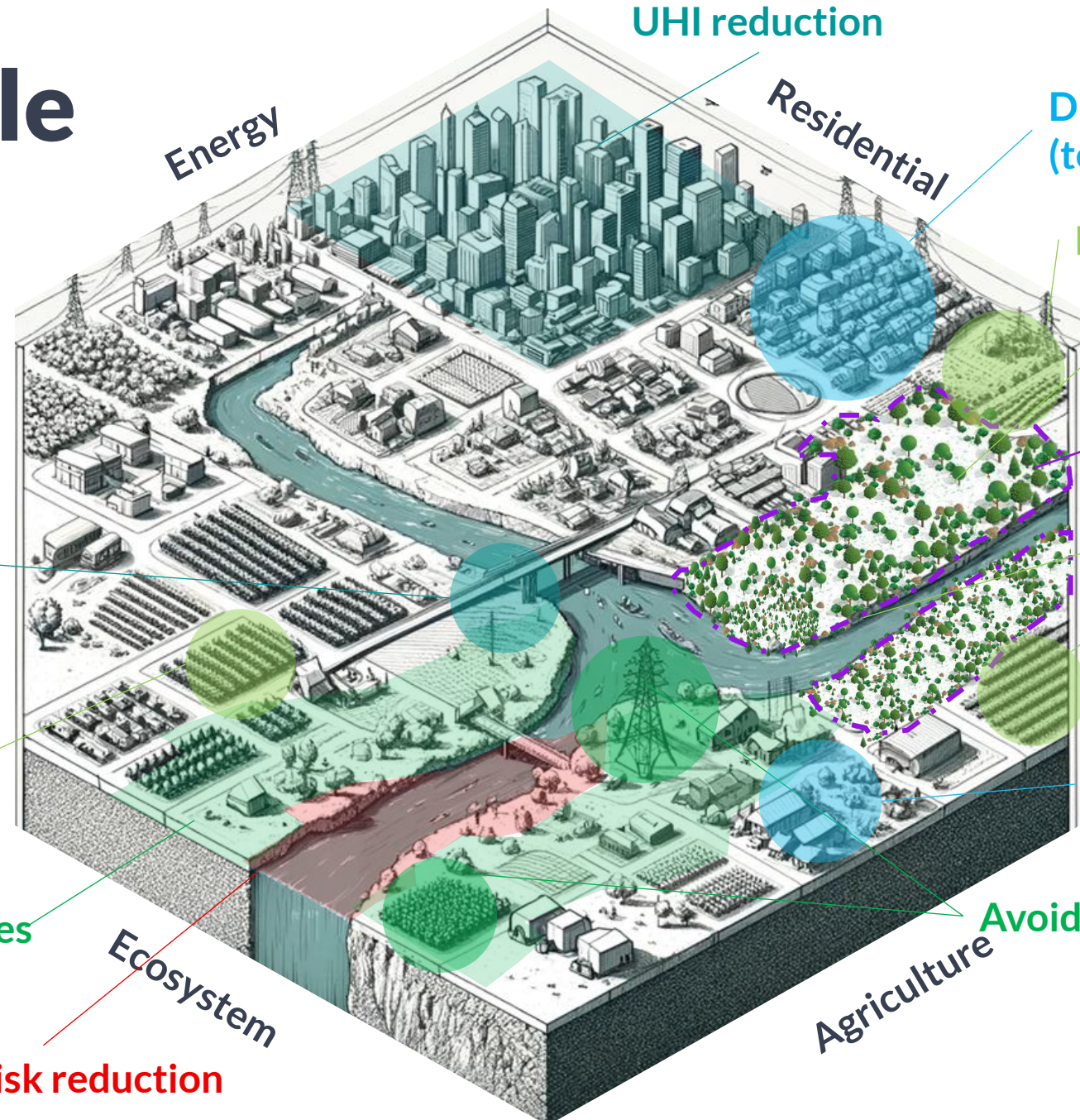
Water

Pollination

Dividends

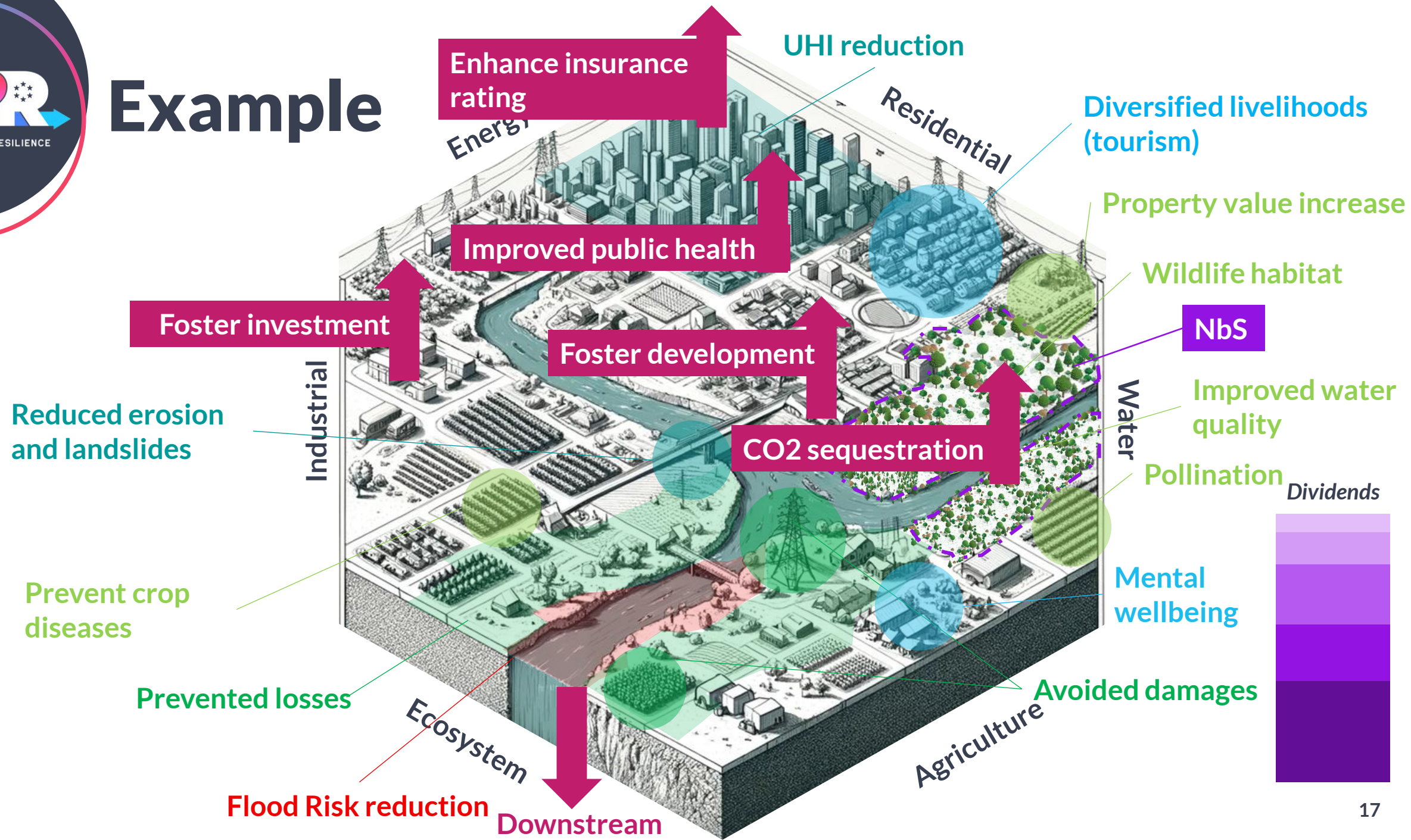
Mental wellbeing

Avoided damages





Example





Example

Independent of a disaster event
Captured by the MRD framework

Dependent on a disaster event
Normally captured by
conventional approaches

Dividends



Multiple Resilience Dividends

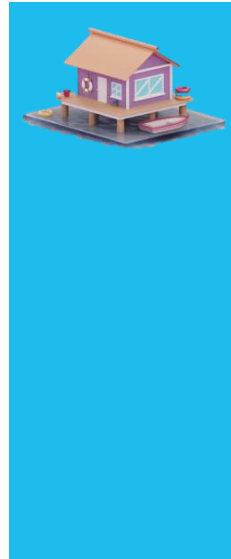
(Intervention scenarios)

Inaction
(no intervention scenario)

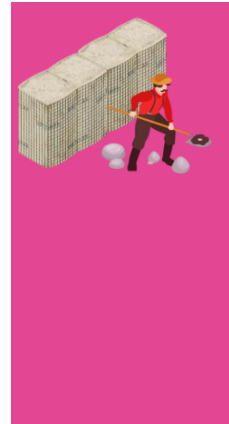


VS

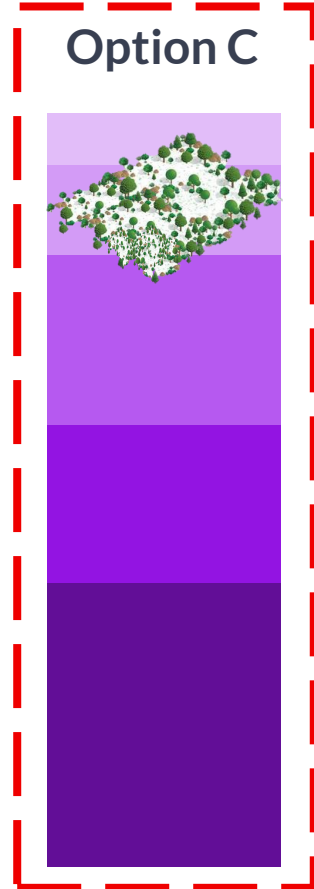
Option A



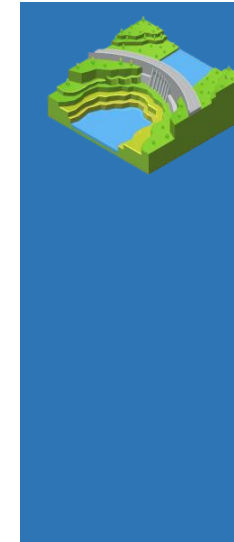
Option B



Option C



Option n



Make decision

- MRD layer:
- *What*
 - *How much*
 - *When*
 - *Where*
 - *To whom*

Low-regret
Low-hanging fruit



Outlook: Making it a flexible and actionable approach



Various methods can characterize the MRD:

- Cost-Benefit Analysis
- Cost-Efficient Analysis
- **Multi-Criteria Analysis**
- Robust Decision Making
- Portfolio Analysis
- Real Option Analysis
- Computable General Equilibrium
- Analytical Economic Modelling (e.g., agent-based, micro- and macroeconomic models).
- Participatory Assessments (e.g., Delphi method, Focus Group Discussions)

Integrate the MRD framework as part of the formulation of **Adaptation Pathways**

Test, validate and improve it together with the P2R regions.

Closing Remarks

Recognising the **full potential** of building climate resilience re-frames **adaptation as a lever for broader development** objectives, a **catalyst for growth and shared prosperity**.

Under this analytical approach, building climate resilience and societal development **is only a matter of perspective**.










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Thank you.

International Institute for Applied Systems Analysis (IIASA)
Schlossplatz 1, A-2361 Laxenburg, Austria

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|--|--|
|  iiasa.ac.at |  @IIASAVienna |
|  iiasa.ac.at/contact |  @IIASALive |
|  IIASA |  @iiasavienna |
|  iiasa-vienna | |

-  higueraroa@iiasa.ac.at
-  Pathways2resilience.eu