

Multiple Resilience Dividends:

An operational framework for effective decision-making in the context of Transformative Adaptation

Presented by:



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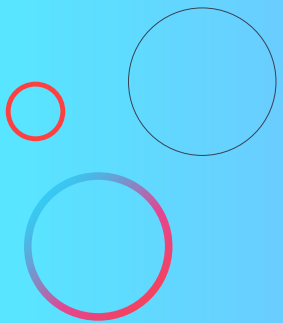
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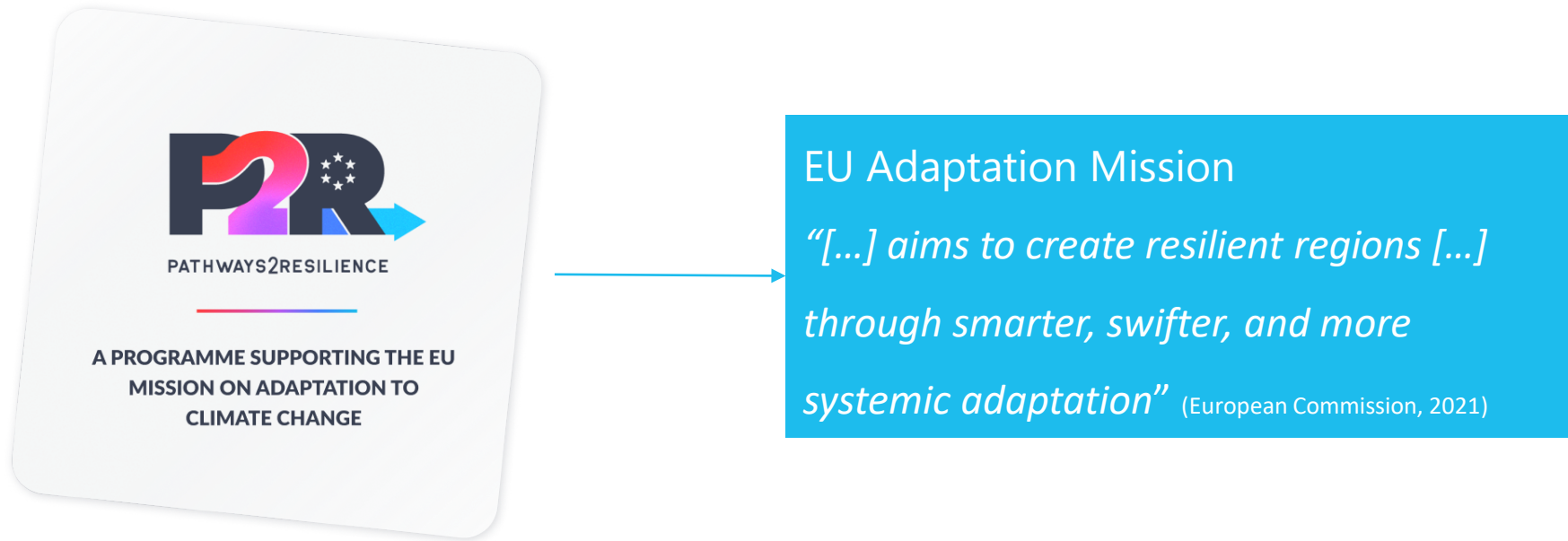


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Background



Context



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








Current Issues on Climate Adaptation

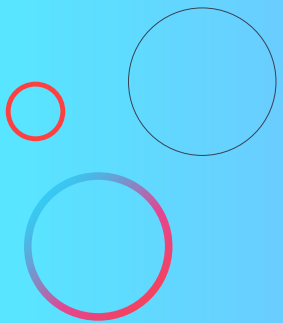
There is a need to reshape adaptation planning and decision-making (Helgeson and O'Fallon, 2021; Rözer et al., 2023).

- 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).
- The overall funding allocated for building climate resilience, particularly the **financing flow towards adaptation, has been slowing down lately** (United Nations Environment Programme, 2023).
- Traditional methods of evaluating adaptation projects **fail to encompass the full range of benefits** (Tanner and Rentschler, 2015; Mechler and Hochrainer-Stigler, 2019; Doeffinger and Rubinyi, 2023).
- 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

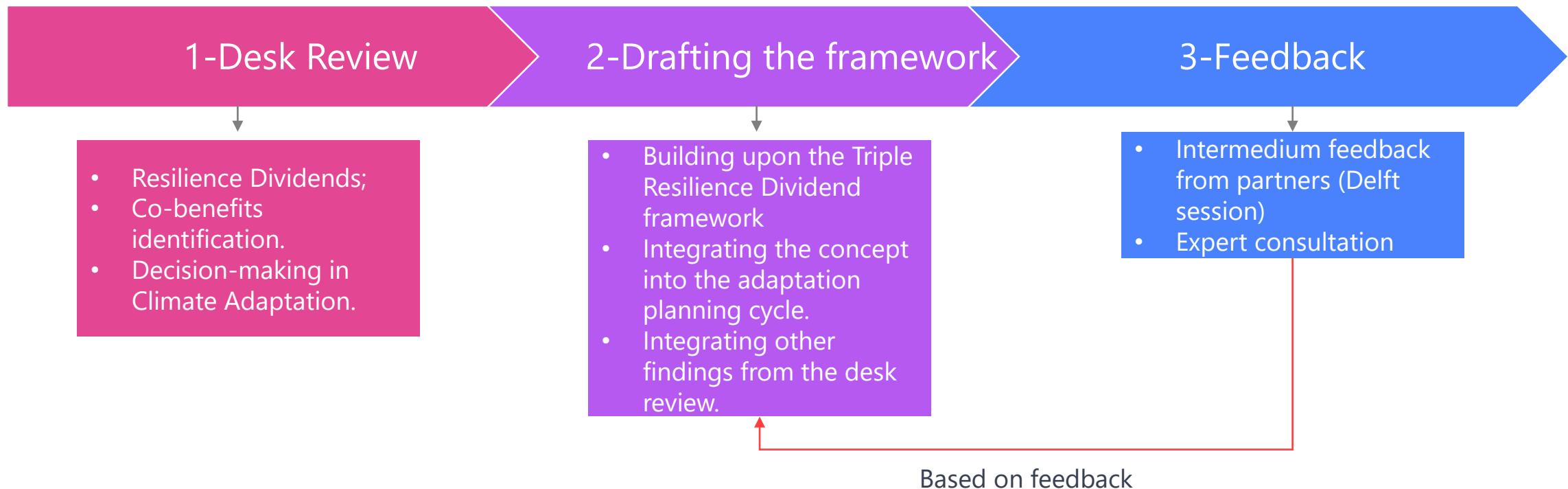
-  How can we help regions build climate resilience through smarter, swifter, and **more systemic adaptation**?
-  How can we make adaptation **more compelling** for decision-makers and appealing for investment?
-  How do we design for such an adaptation while **supporting multiple societal objectives**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

Methodology

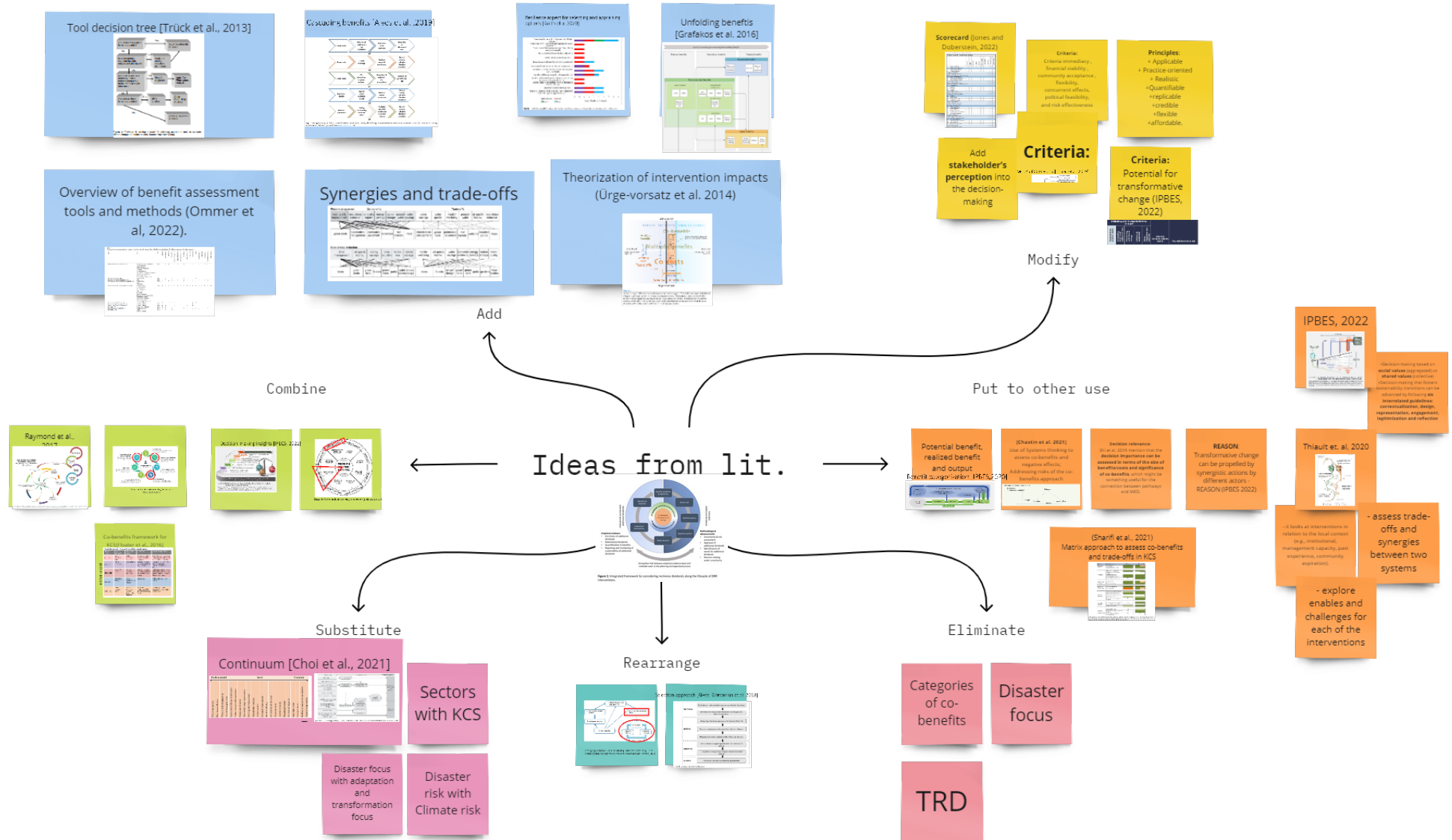


Our Approach

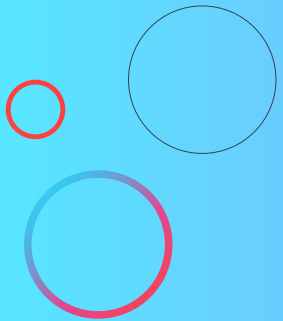
Objective: To provide a decision-making framework that helps European regions identify, evaluate, and select adaptation options capable of delivering multiple resilience dividends across sectors.



Finding Inspiration

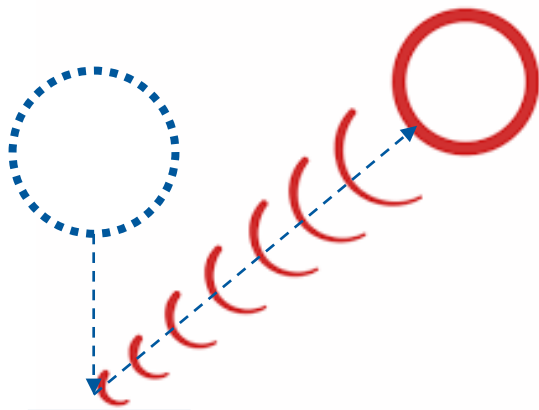


The Framework

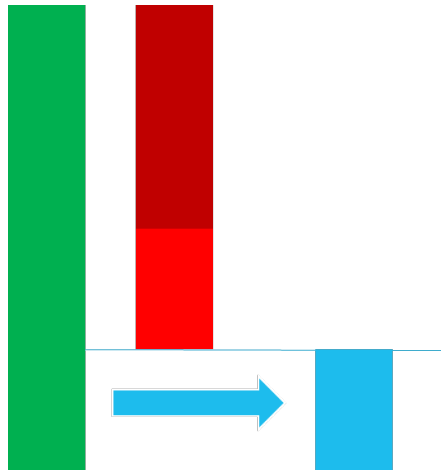


Before diving deeper...

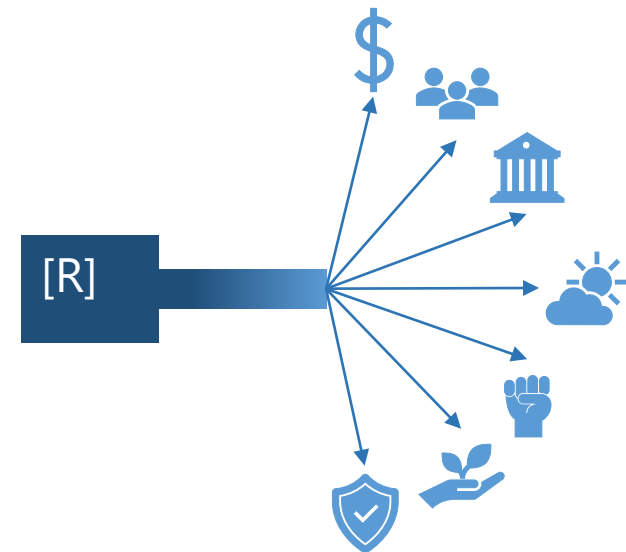
Resilience as
"bouncing forward"



Resilience Dividend
Net benefit of interventions

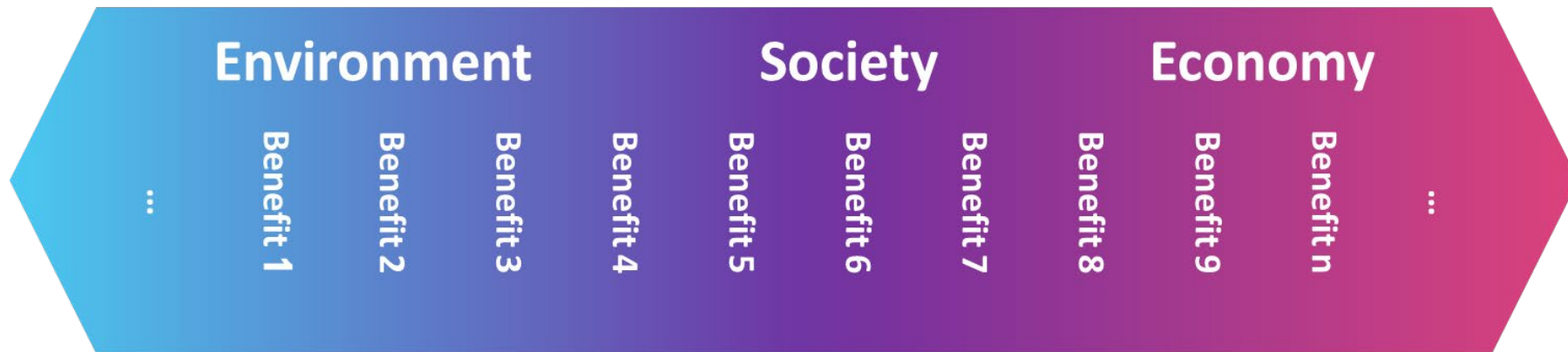


**Resilience yields substantial
benefits**



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.



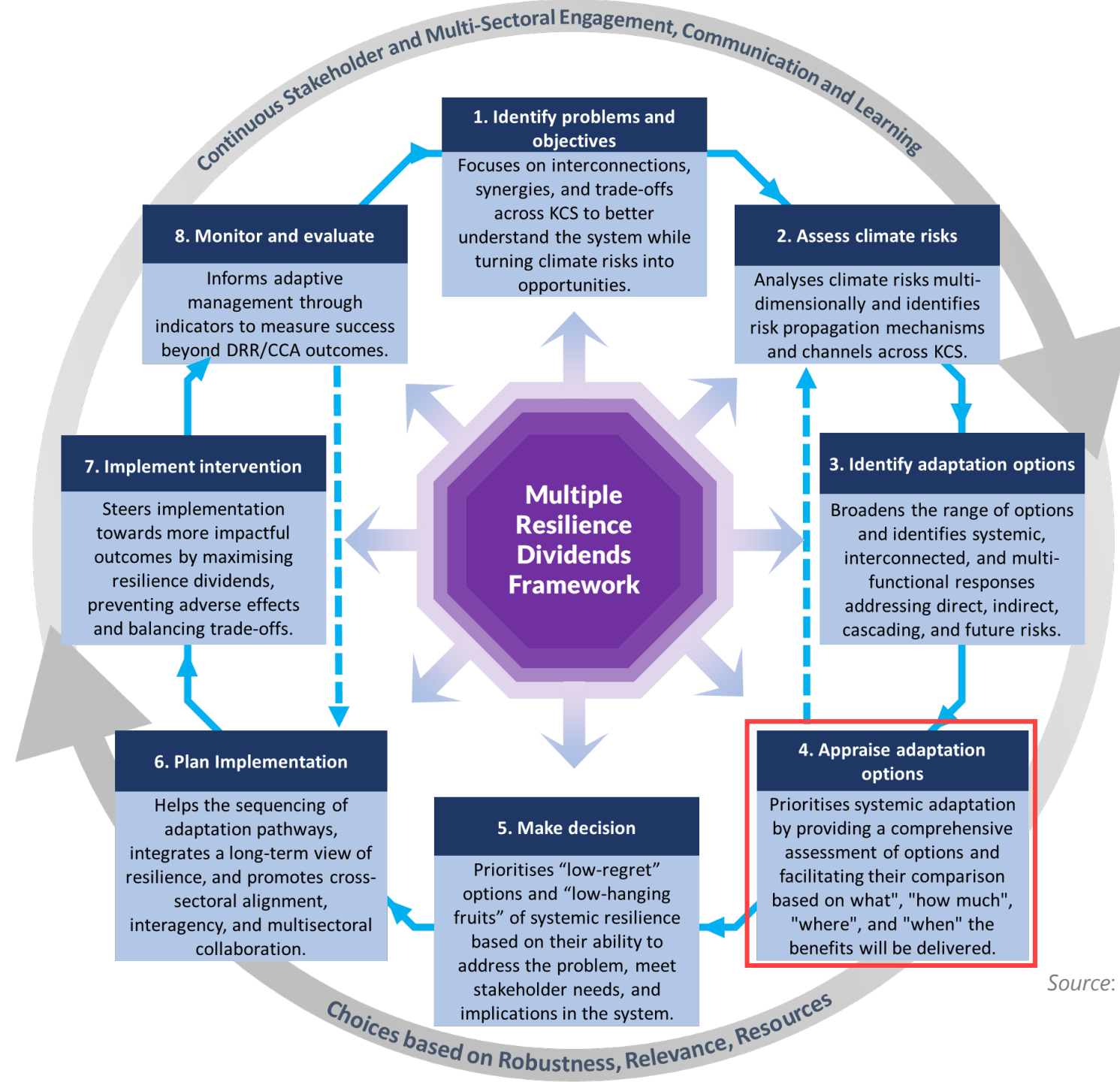
Temporality



Receptivity



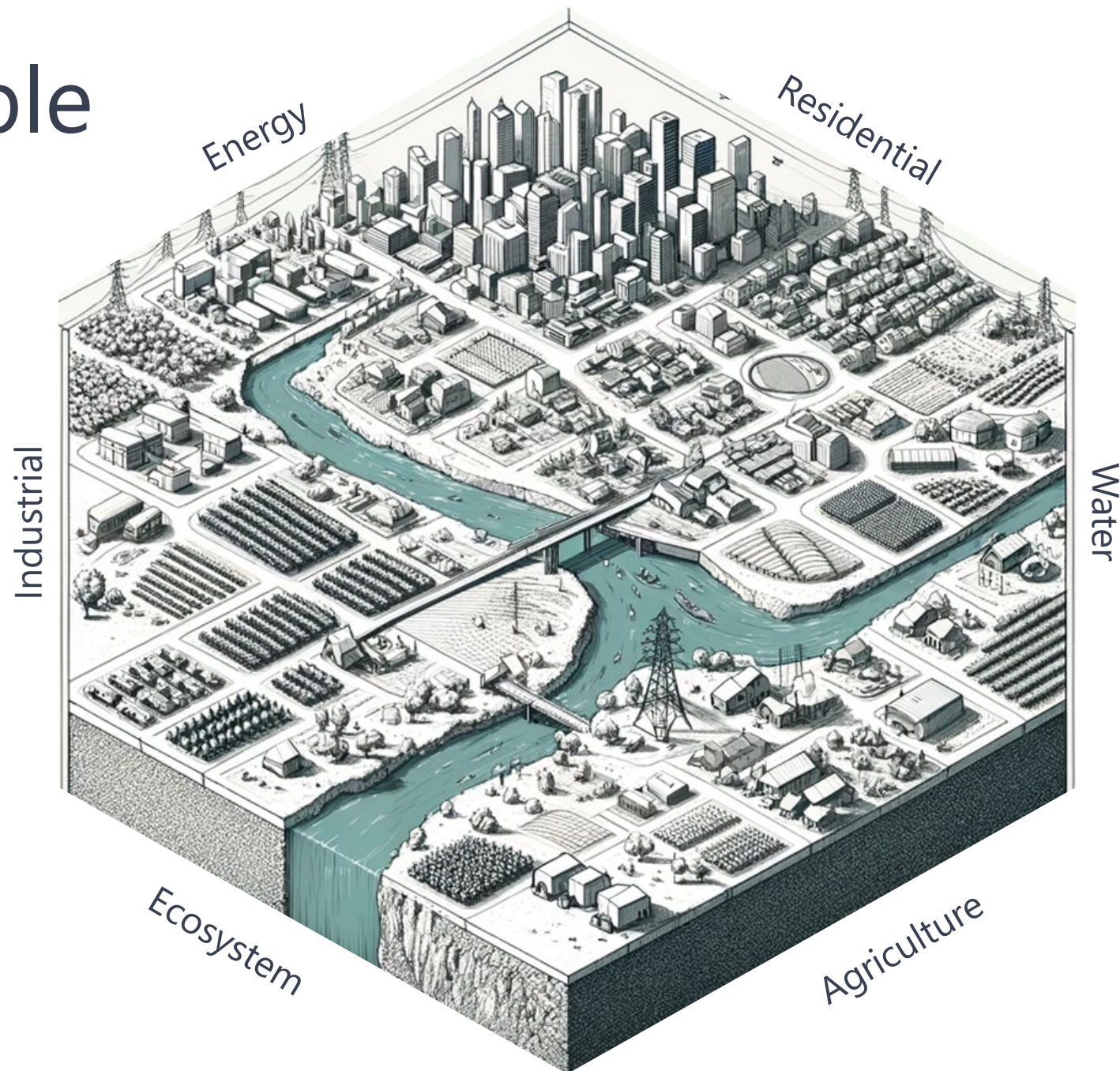
Interconnectedness



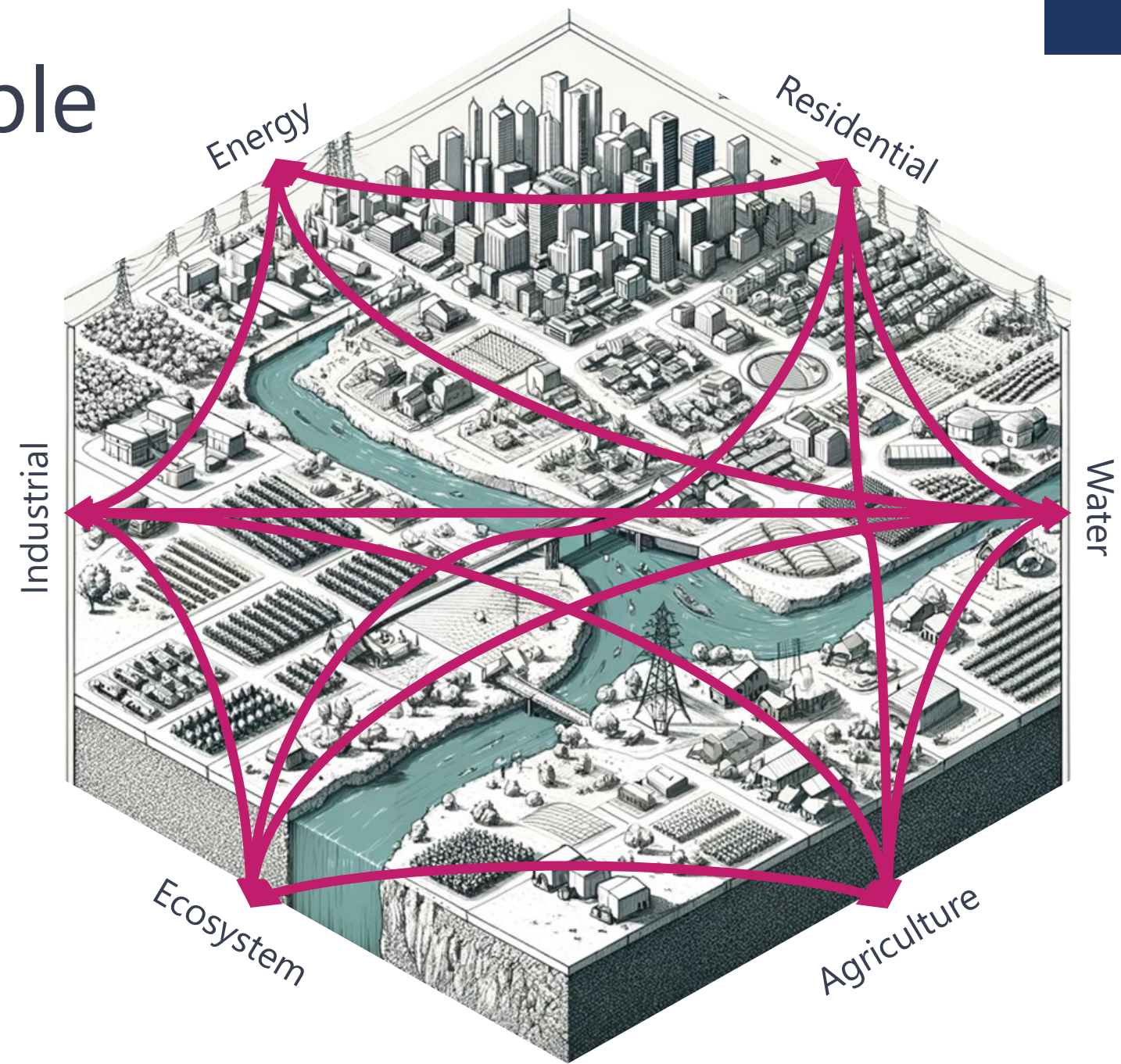
Source: (Higuera, Bachman & Sakic, 2024)



Example

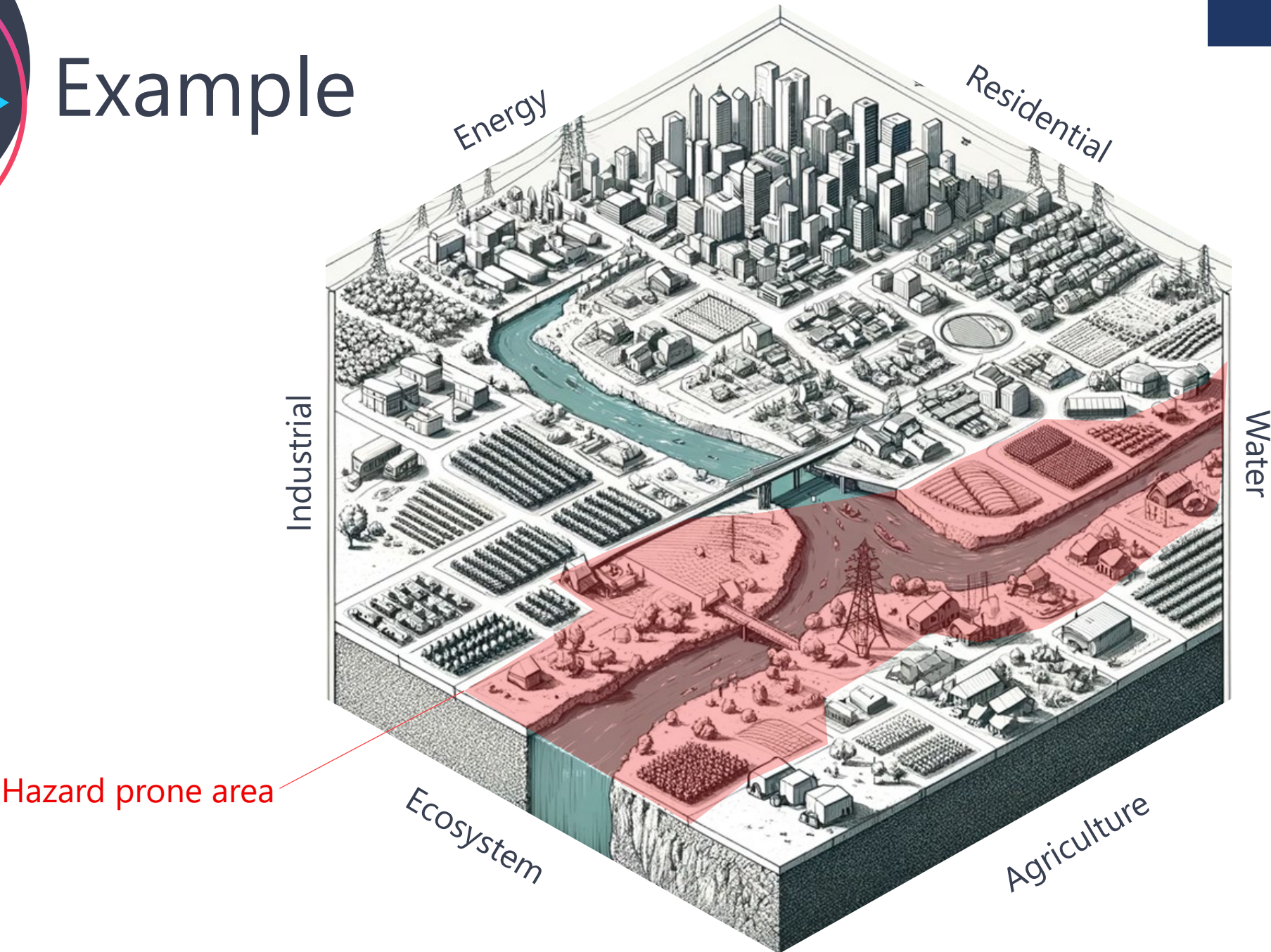


Example



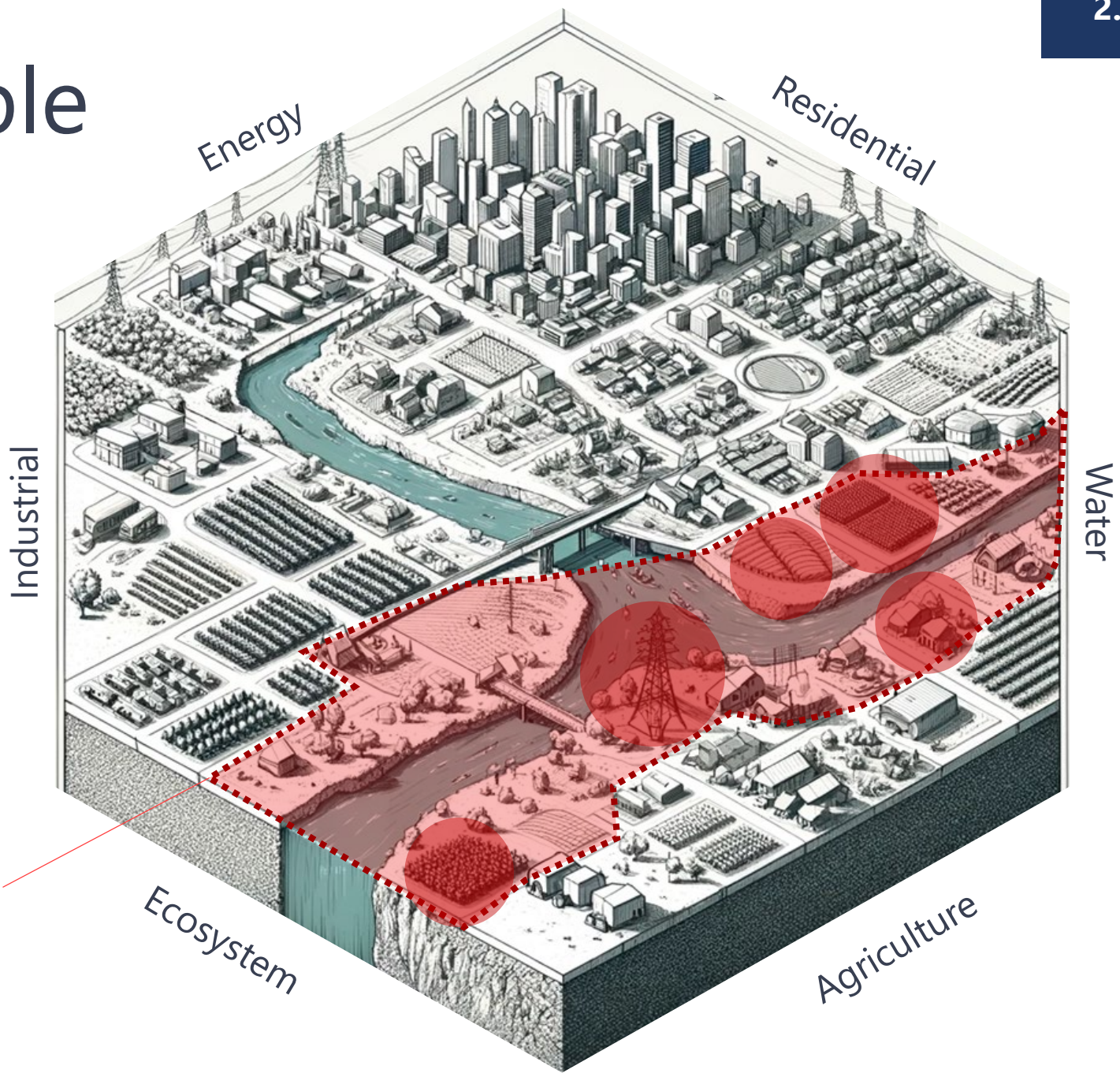


Example

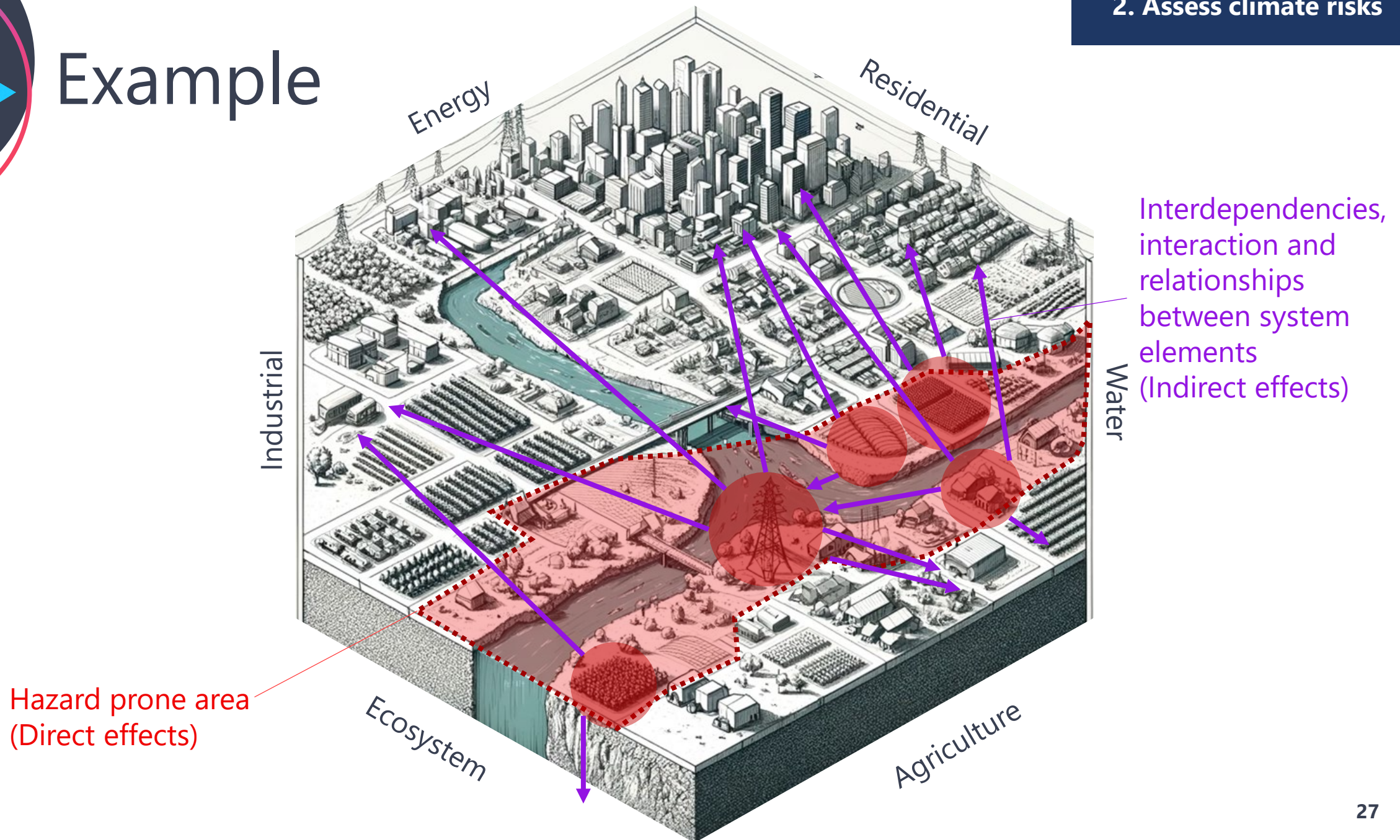


Example

Hazard prone area
(Direct effects)



Example





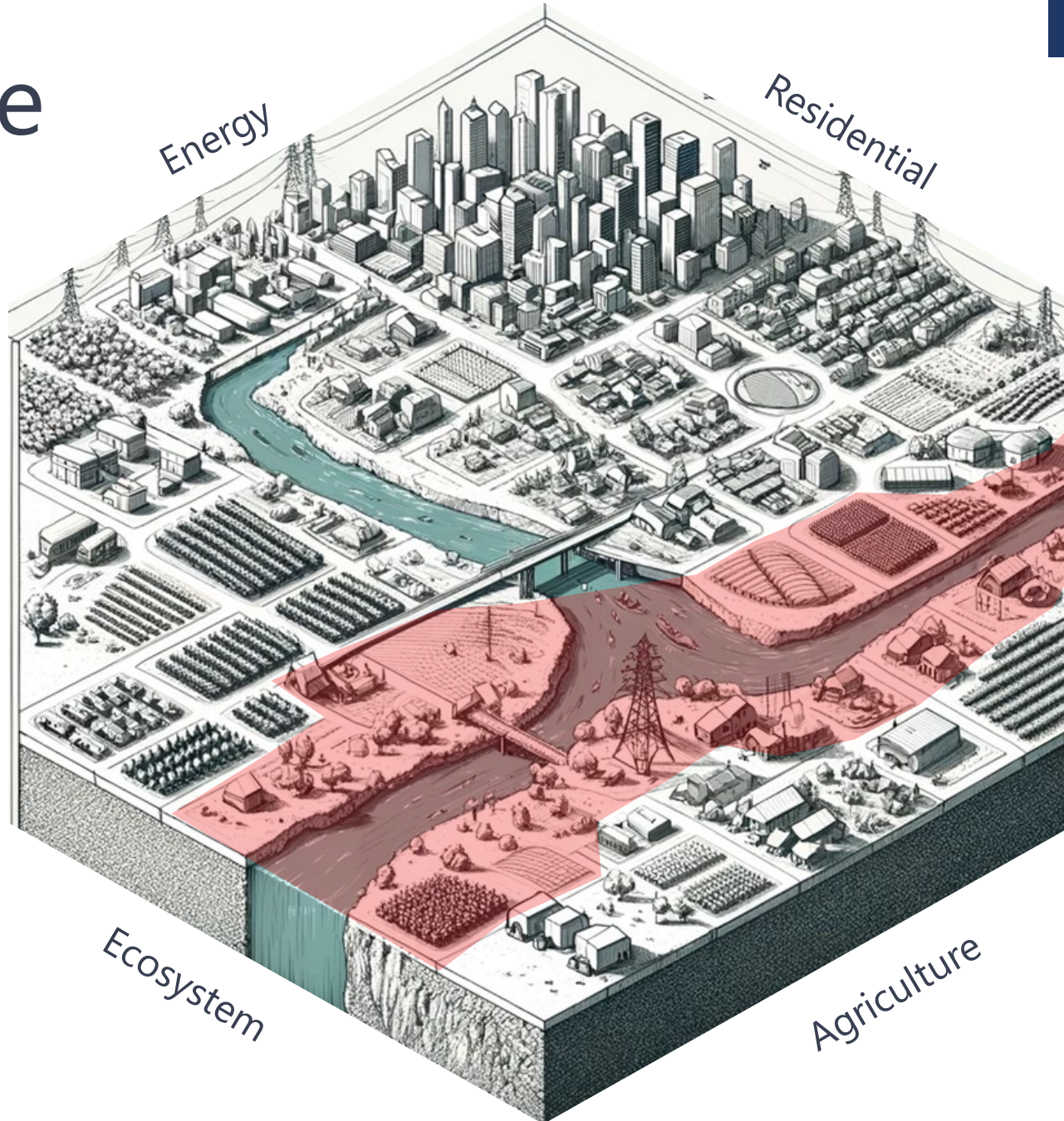
Example

3. Identify adaptation options

Structural



Industrial



Water

Regulations





Example

3. Identify adaptation options

Structural



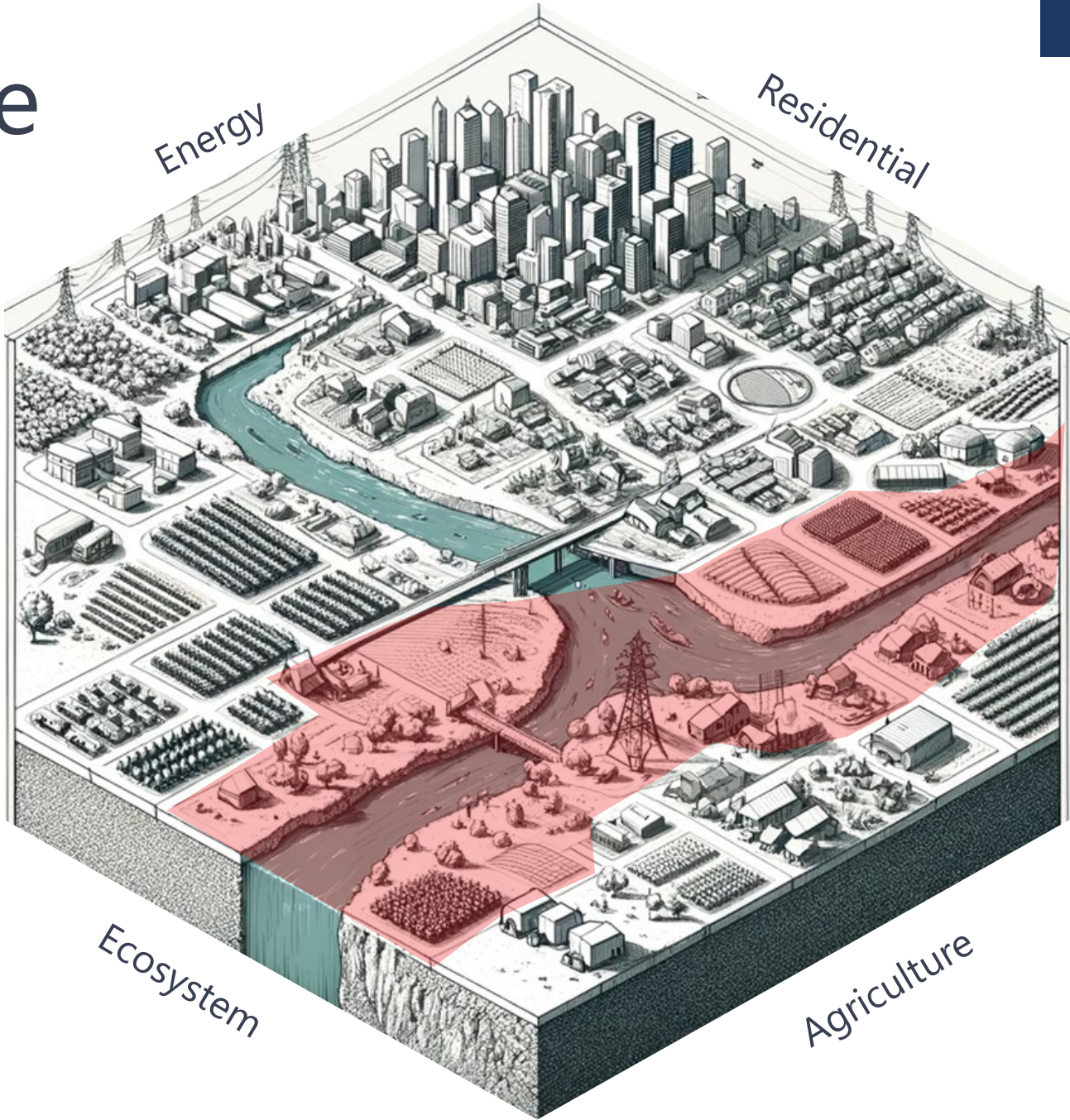
Community-based



Nature-based Solutions



Industrial



Regulations



Zoning

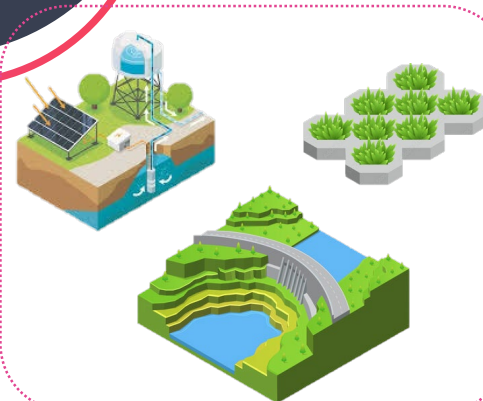
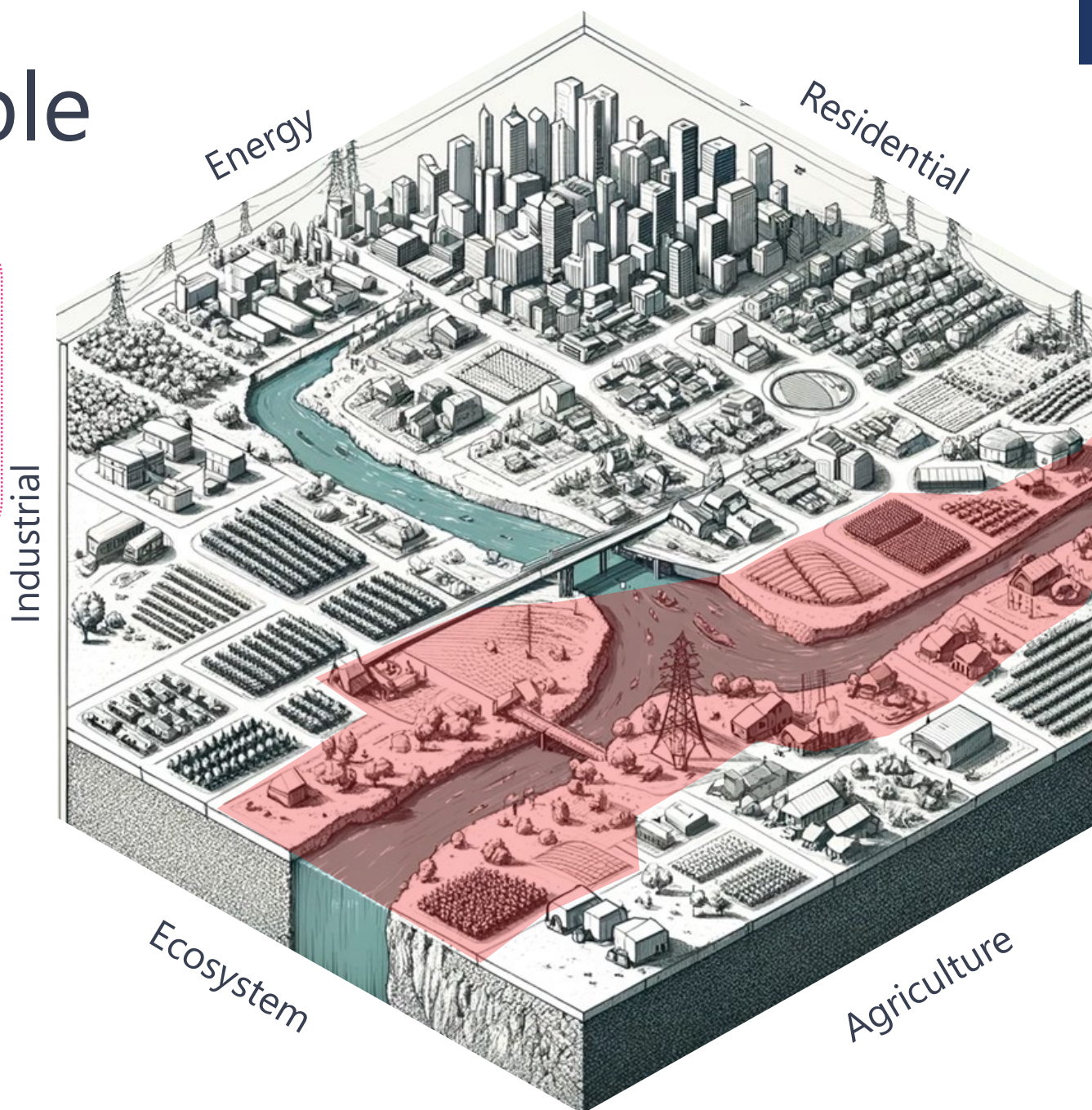


Technological



Example

3. Identify adaptation options





Example

3. Identify adaptation options

Structural



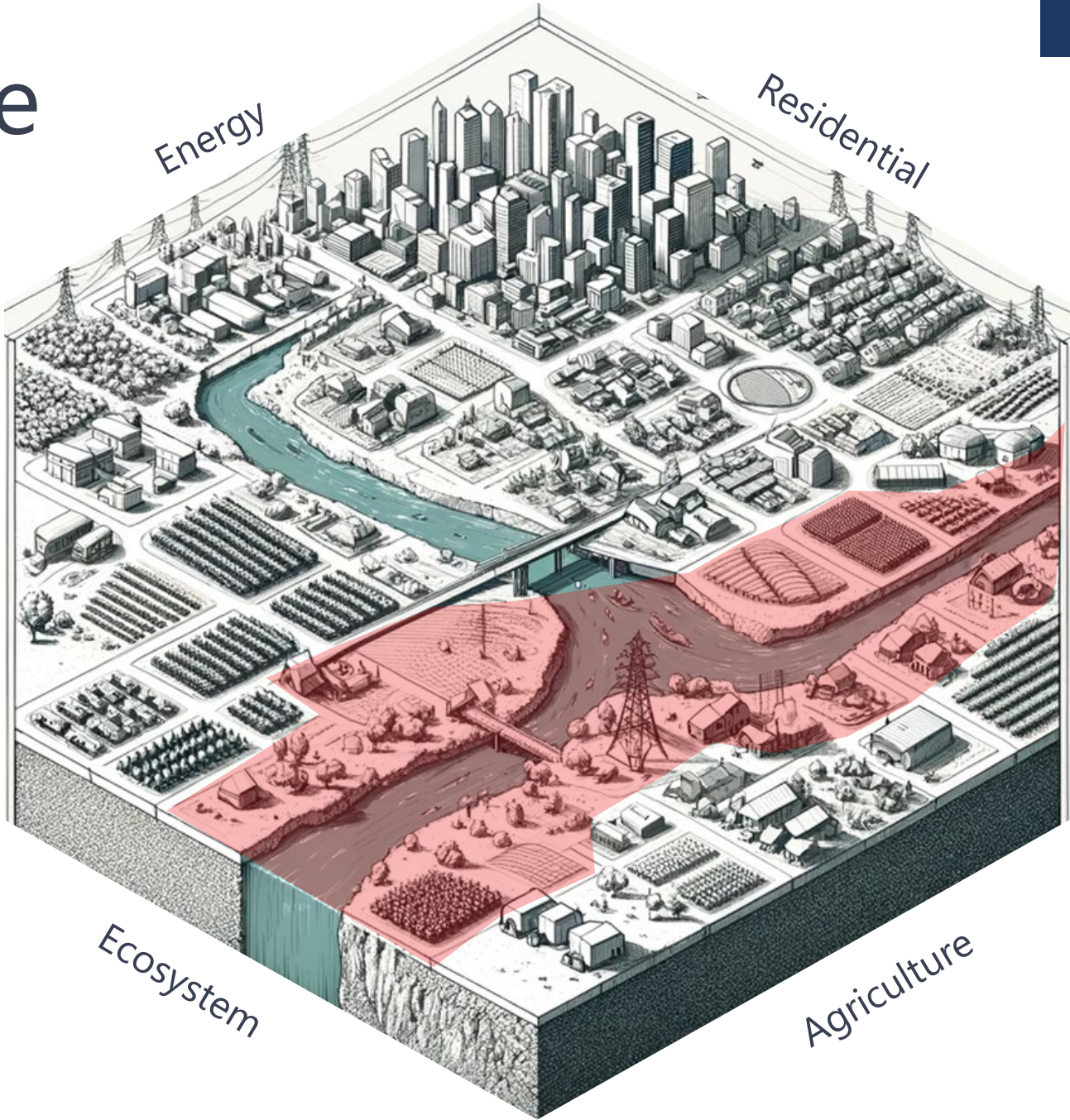
Community-based



Nature-based Solutions



Industrial



Regulations



Zoning

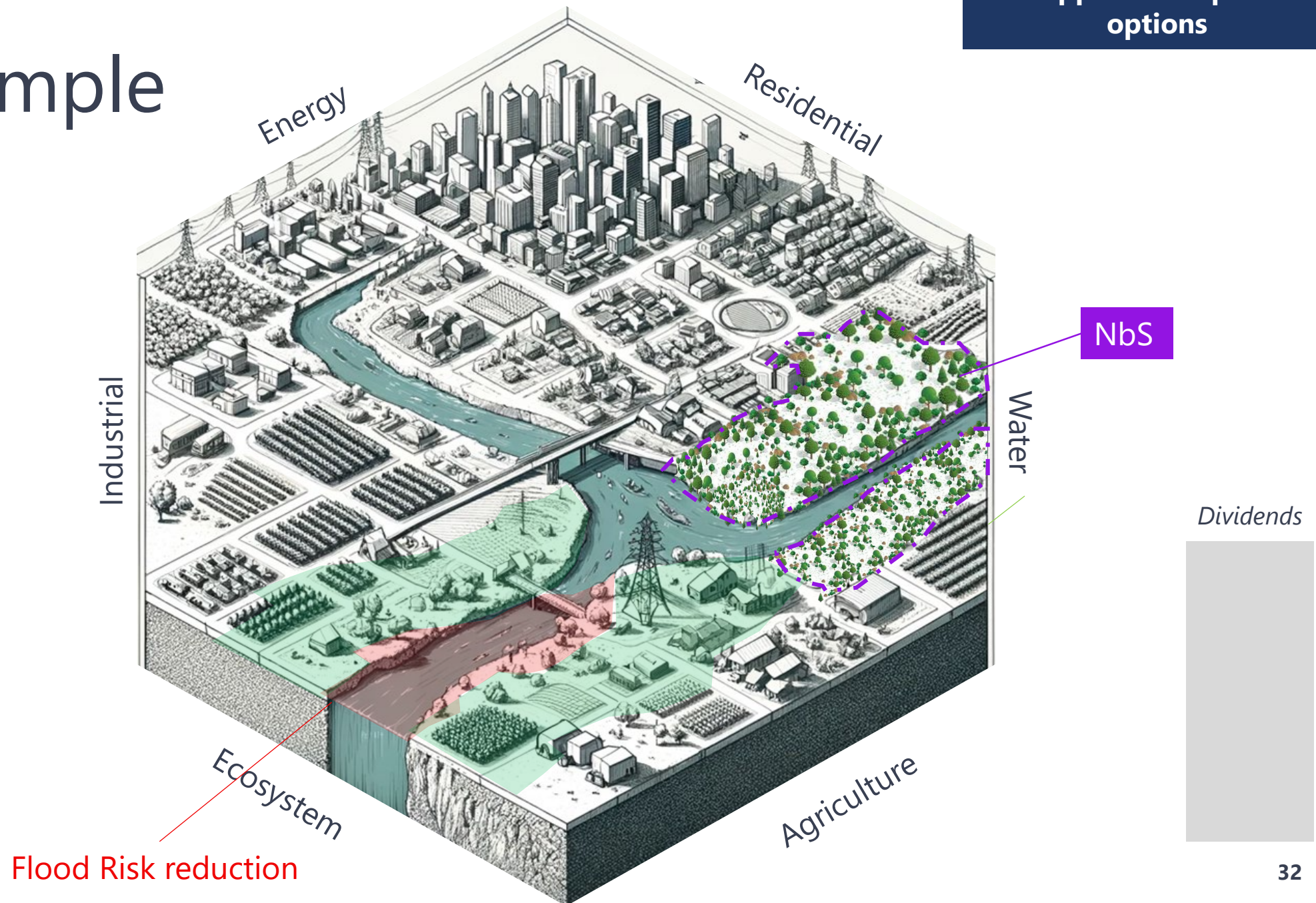


Technological

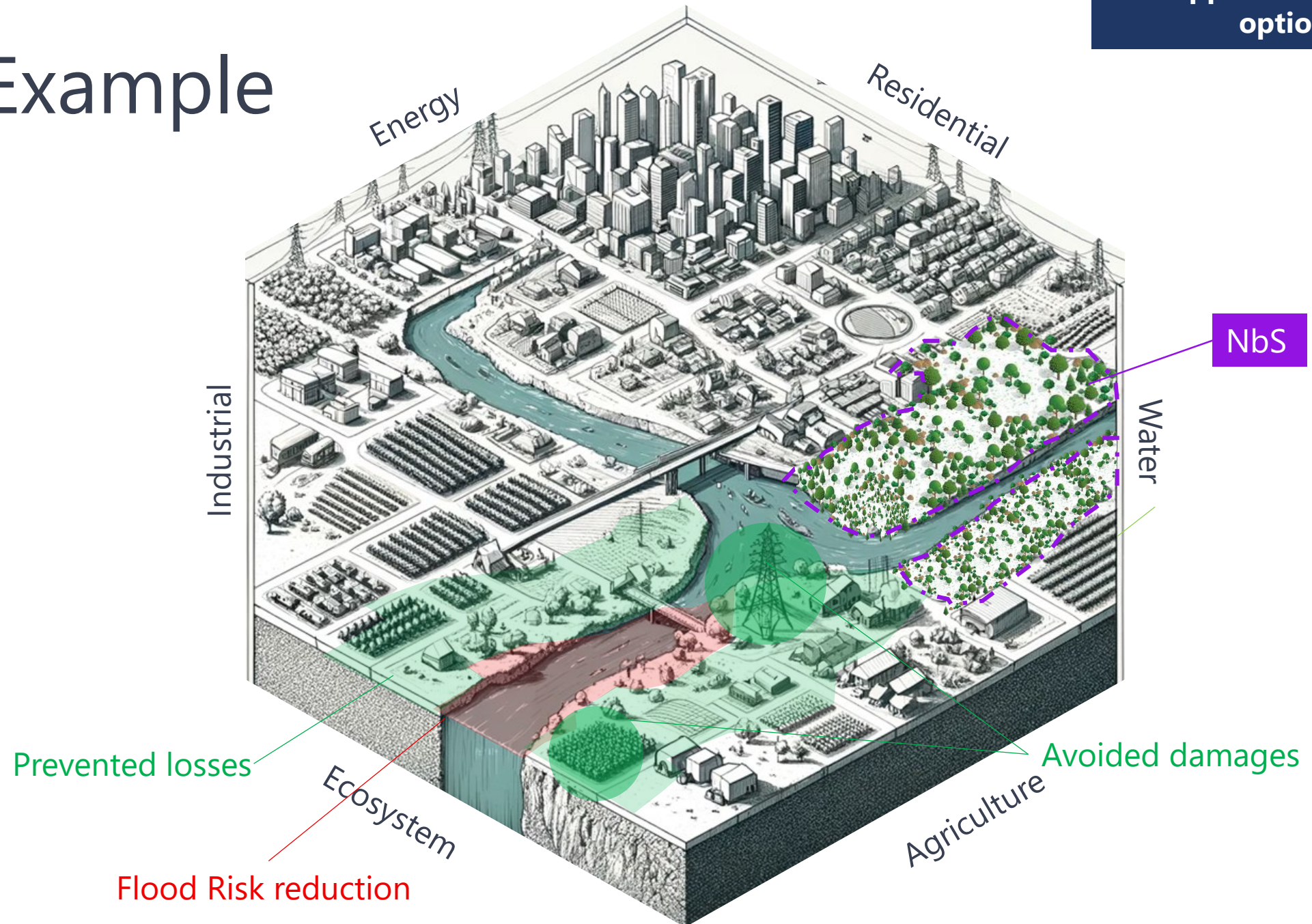


Example

4. Appraise adaptation options



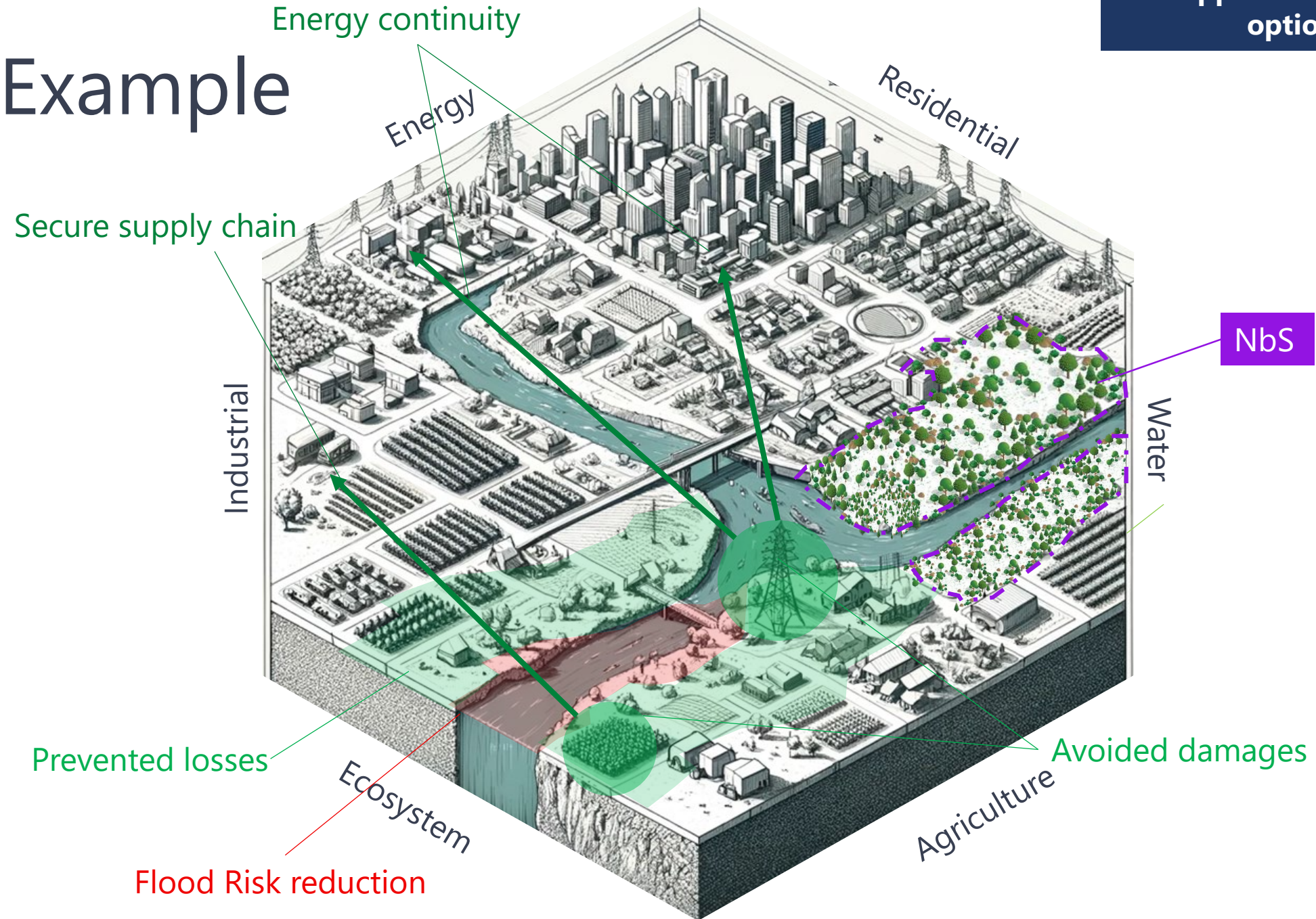
Example



Dividends

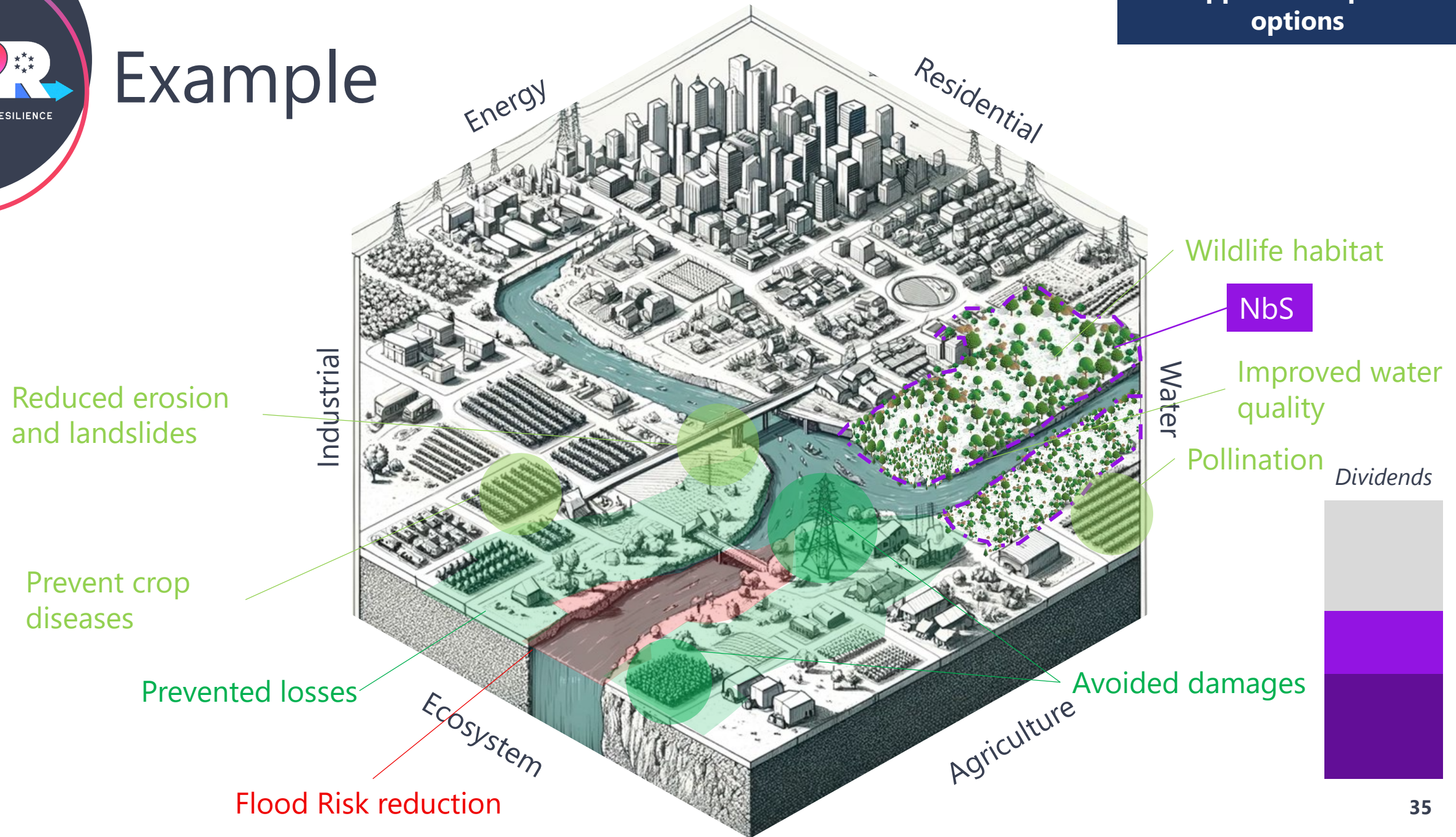


Example





Example





Example

4. Appraise adaptation options

Reduced erosion and landslides

Prevent crop diseases

Prevented losses

Flood Risk reduction

Industrial

Ecosystem

Energy

Residential

Agriculture

Diversified livelihoods (tourism)

Property value increase

Wildlife habitat

NbS

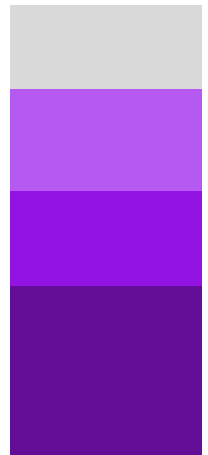
Improved water quality

Pollination

Mental wellbeing

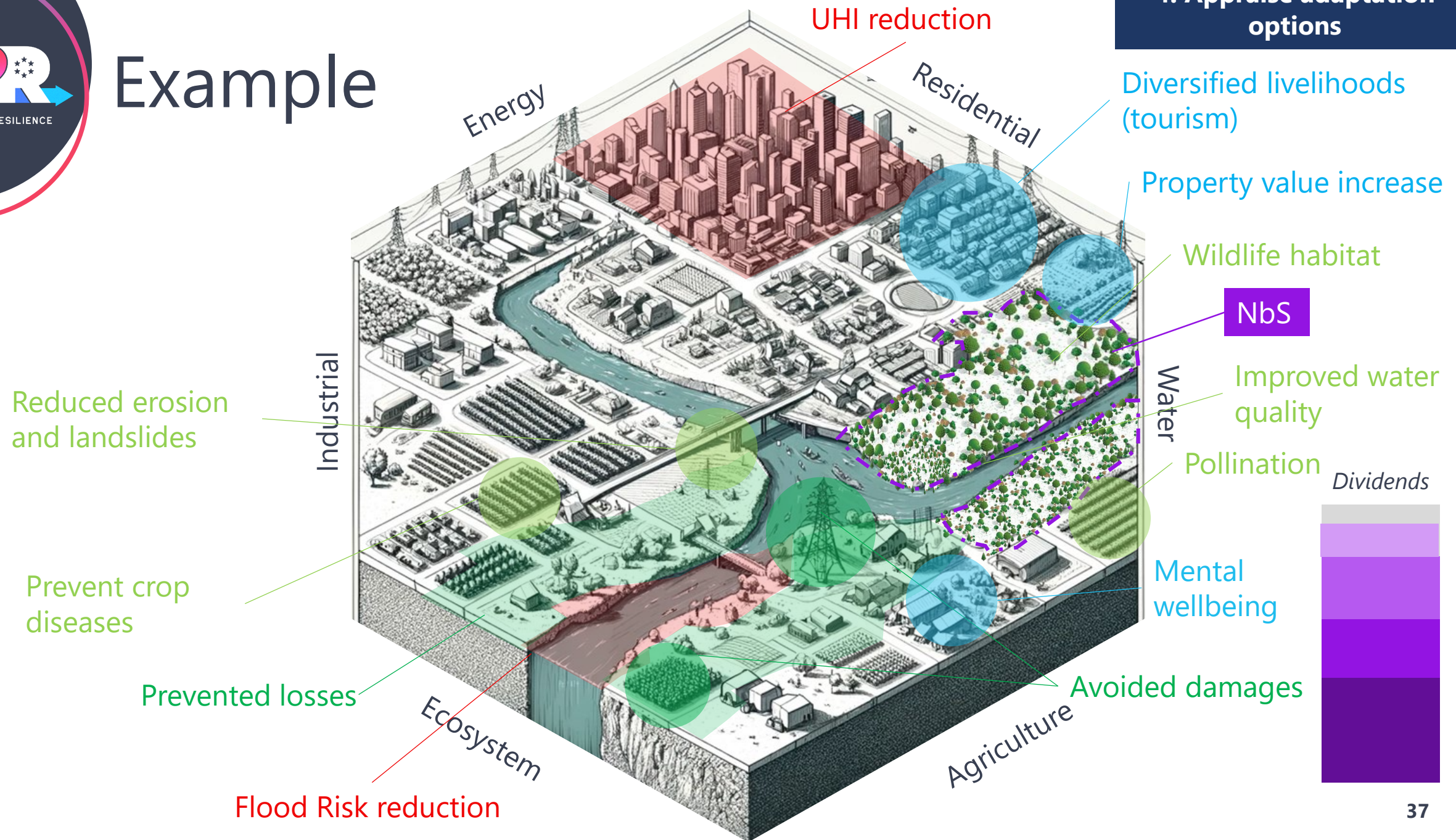
Avoided damages

Dividends



Example

4. Appraise adaptation options



UHI reduction

➤ Avoided damages

Foster development

Prevented losses

Flood Risk reduction

Downstream

Industrial

Energy

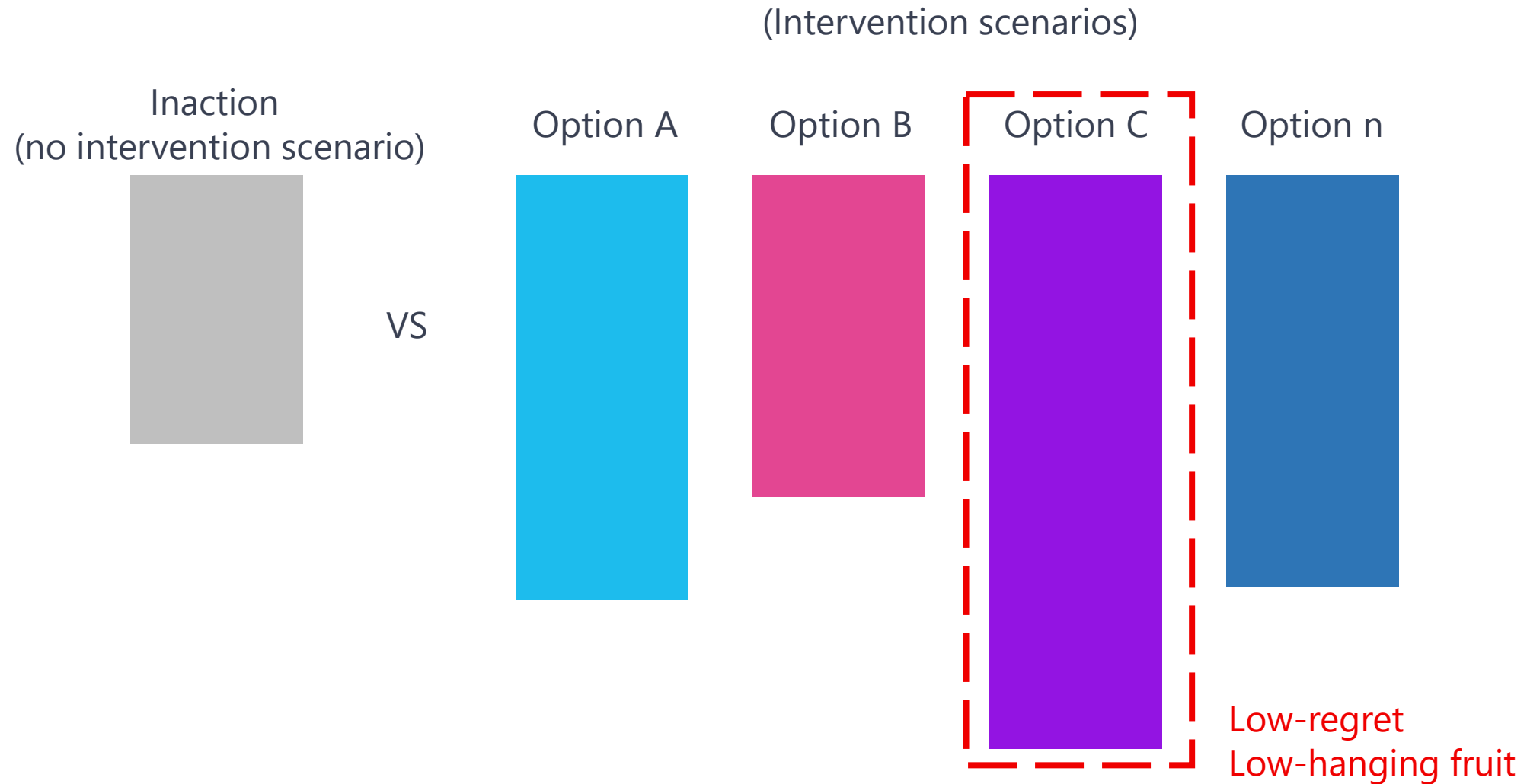
Residential

Ecosystem

Agriculture

Downstream

Multiple Resilience Dividends



Outlook: Making it a flexible and resourceful 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**, 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.

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