



# NAP Global Network

Measuring  
progress:  
Indicators, data  
sources and  
assessment

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# Overview

- Overview of measurement and indicators
- Exercise and sharing: Indicator stories
- Break
- Indicator systems and their uses
- Country examples
- High-level principles for assessment and measurement

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# Why measure?

The indicators a society chooses to report to itself about itself are surprisingly powerful. They reflect collective values and inform collective decisions. A nation that keeps a watchful eye on its salmon runs or the safety of its streets makes different choices than does a nation that is only paying attention to its GNP. The idea of citizens choosing their own indicators is something new under the sun - something intensely democratic.

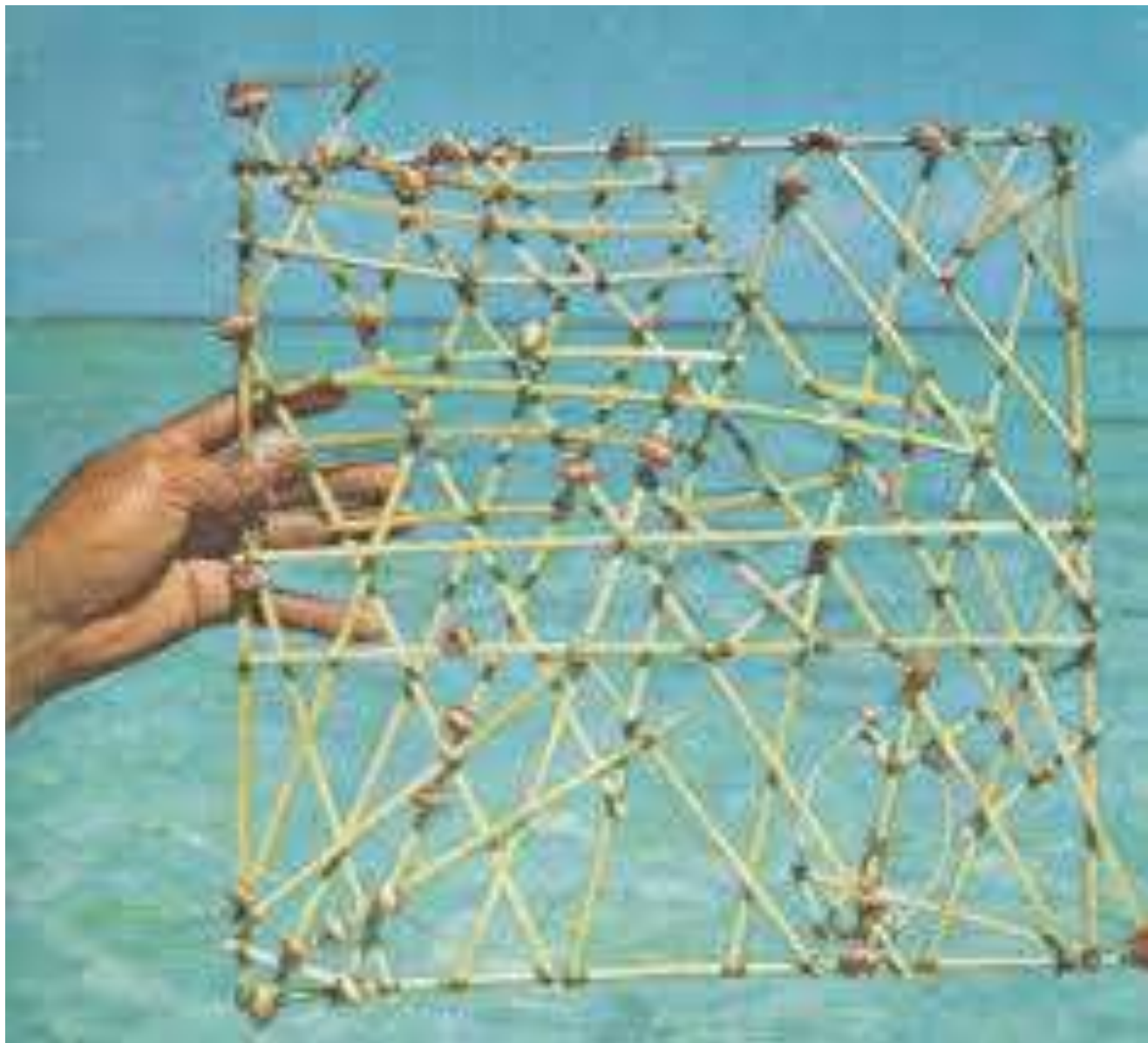
Donella Meadows

Source: Meadows, D. (1998) Indicators and information systems for sustainable development. Report for the Balaton Group. Hartland Four Corners, VT: The Sustainability Institute.





# Indicators are navigation instruments

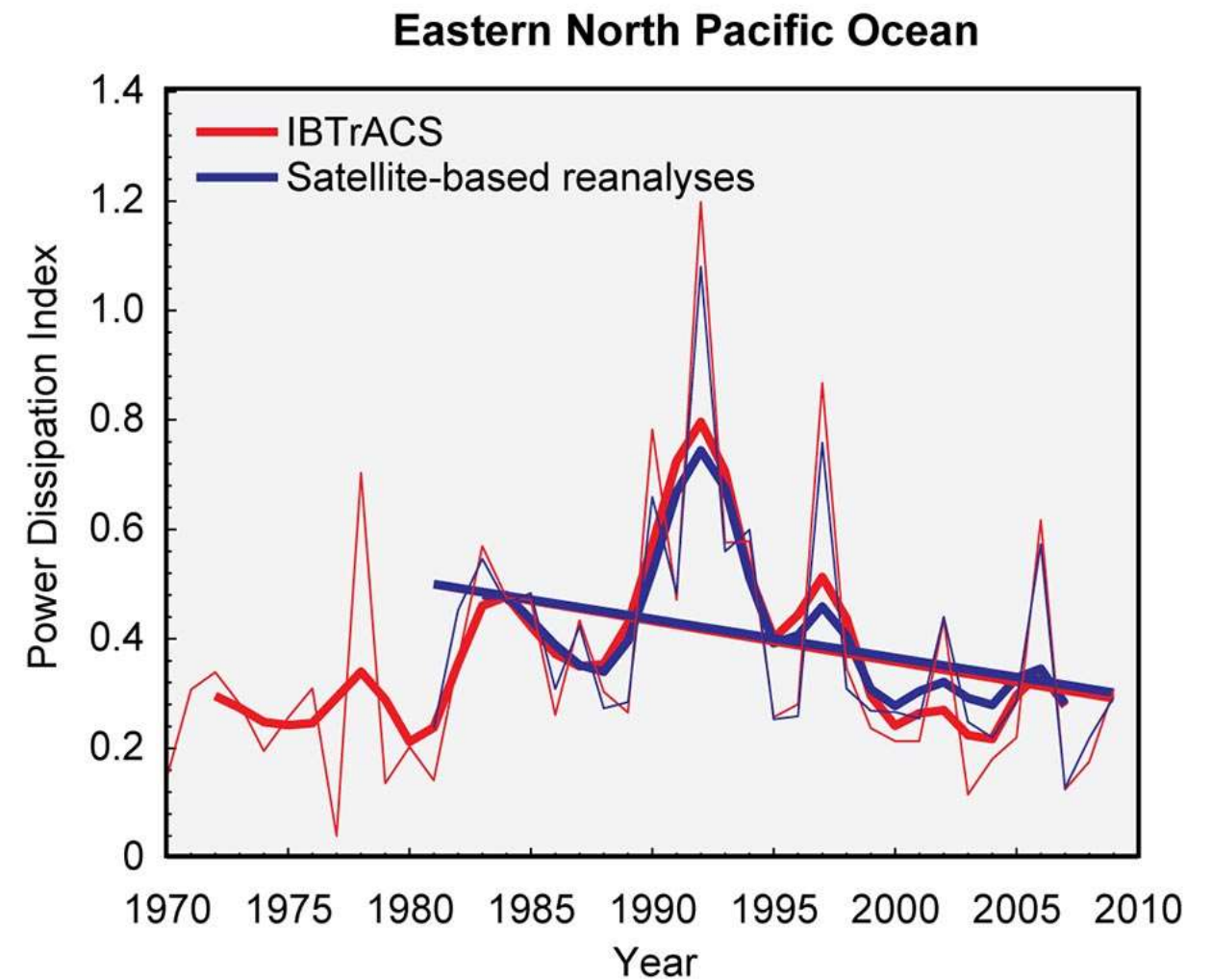
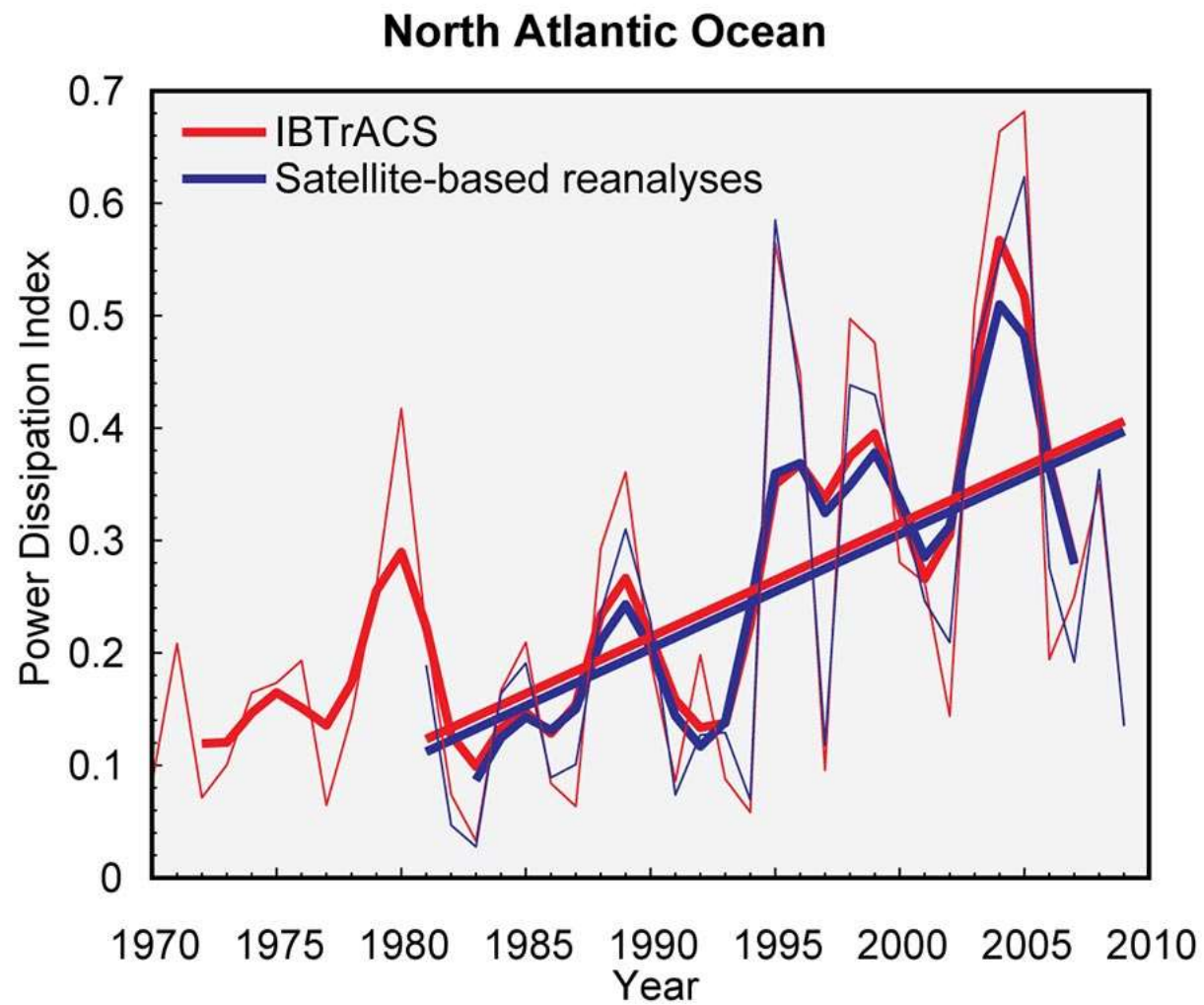


# Indicators and adaptation

- Is the range and nature of hazards changing?



## Observed Trends in Hurricane Power Dissipation



Source: <https://nca2014.globalchange.gov/report/our-changing-climate/changes-hurricanes>



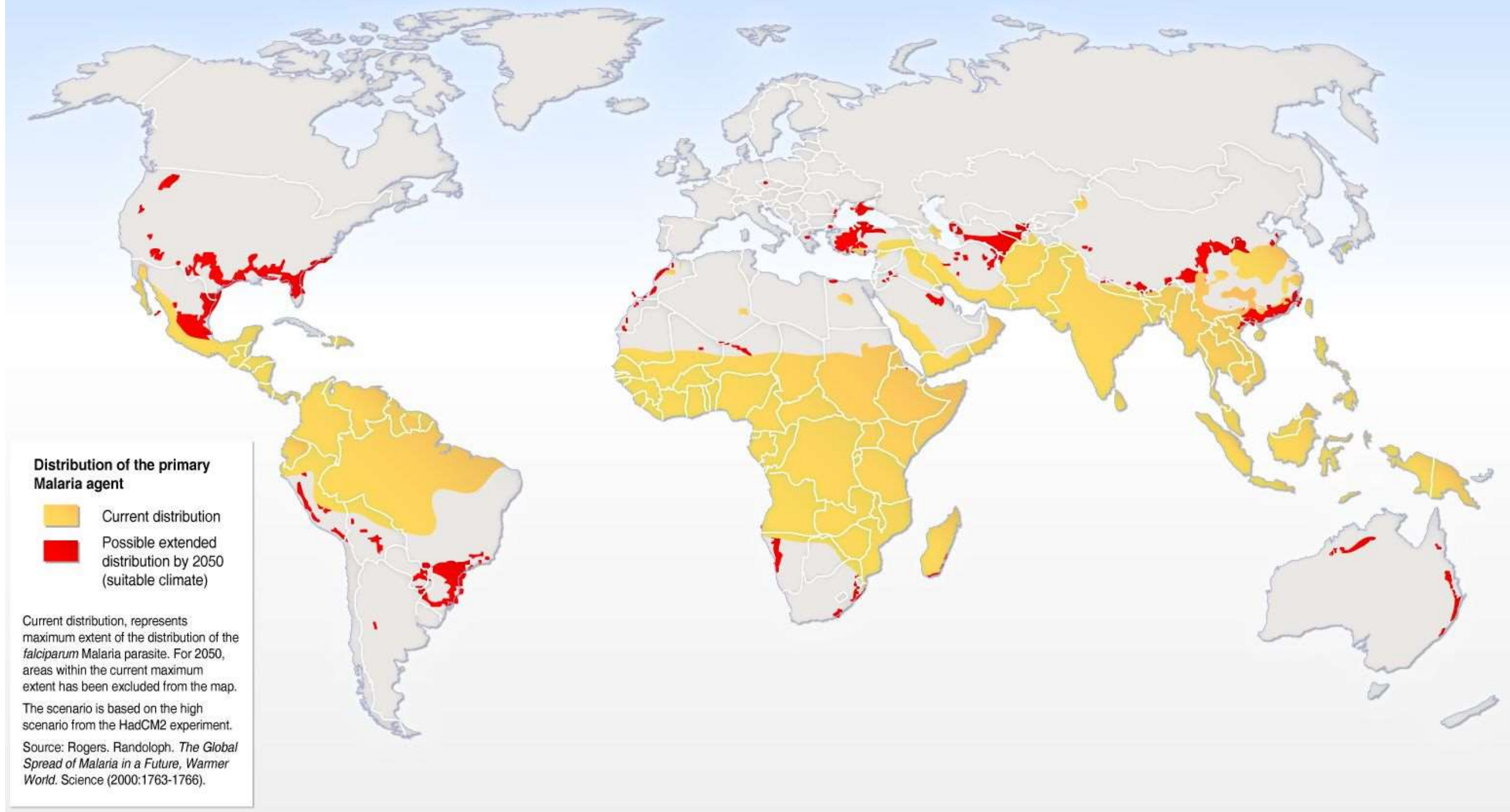
# Indicators and adaptation

- Is the range and nature of **hazards** changing?
- Who is **exposed** to risk and to what extent?





# Climate Change and Malaria

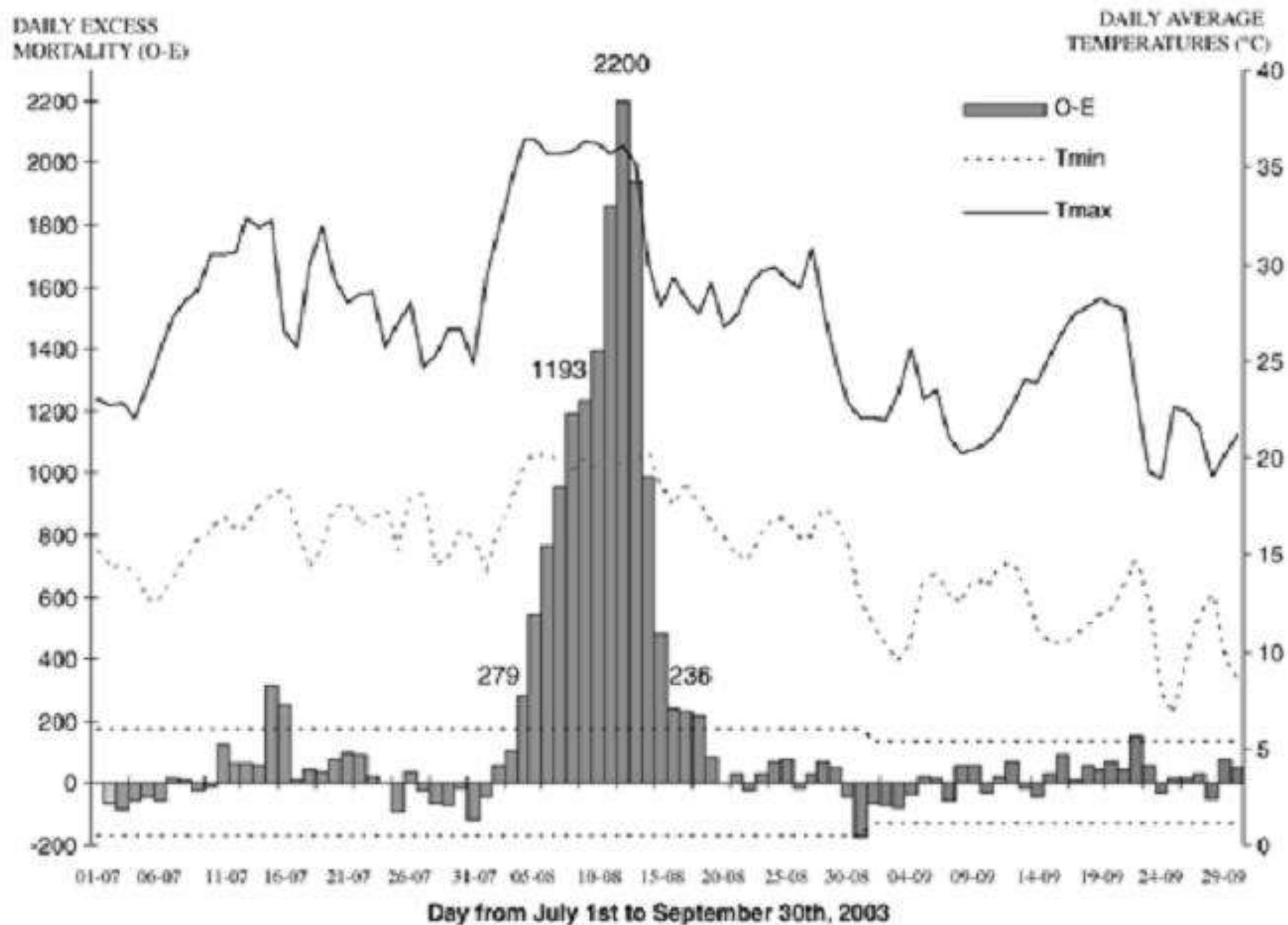


# Indicators and adaptation

- Is the range and nature of **hazards** changing?
- Who is **exposed** to risk and to what extent?
- What are the **impacts** we already experience?



**Figure 16:** Excess deaths observed during the 2003 heat wave in France. O= observed; E= expected.

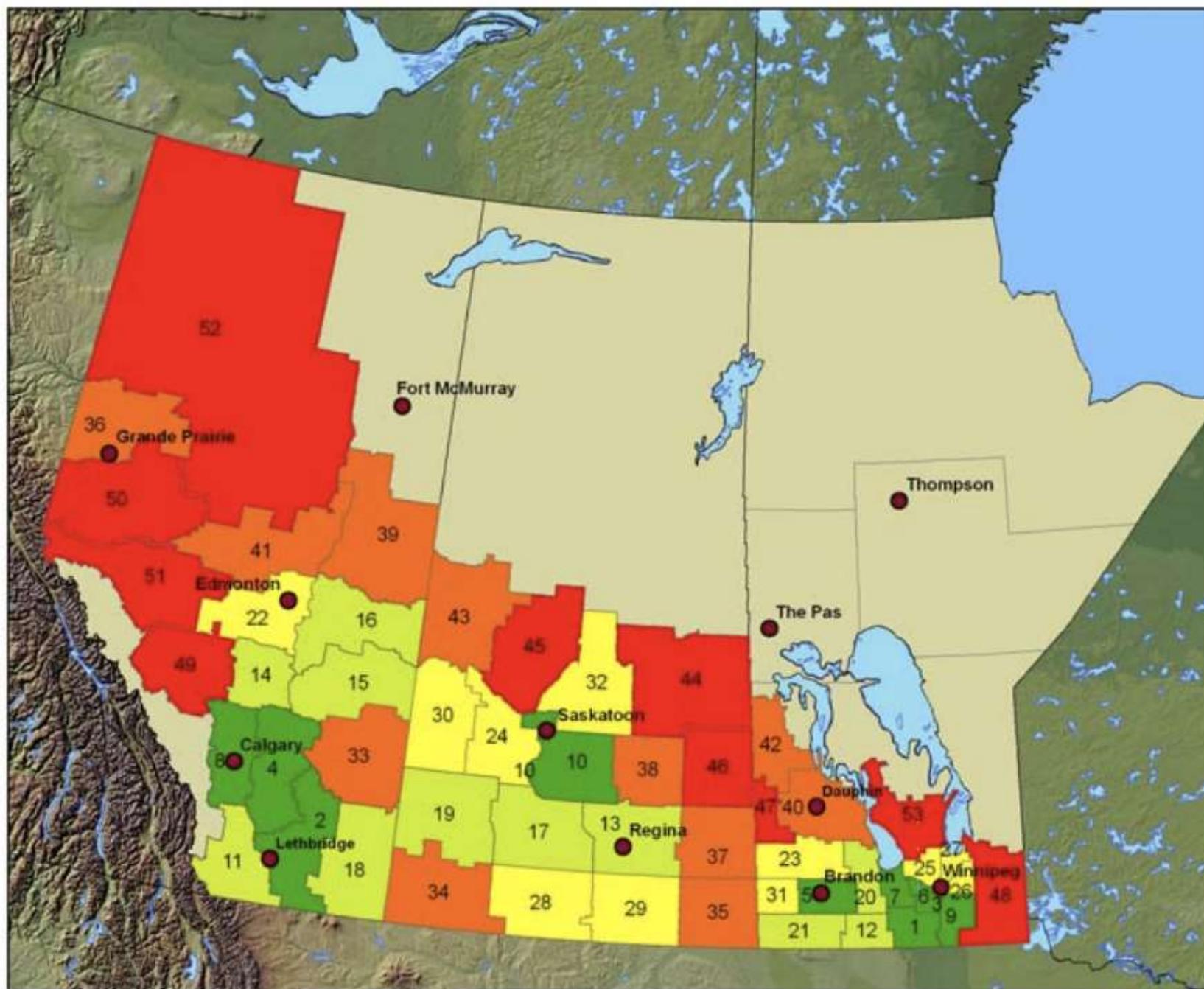


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- What are our **adaptive capacities** and are they adequate?







## Adaptive Capacity Index

Six determinants make up the overall rankings.

### Ranking

1 - 10	Highest
11 - 21	
22 - 32	
33 - 43	
44 - 53	Lowest

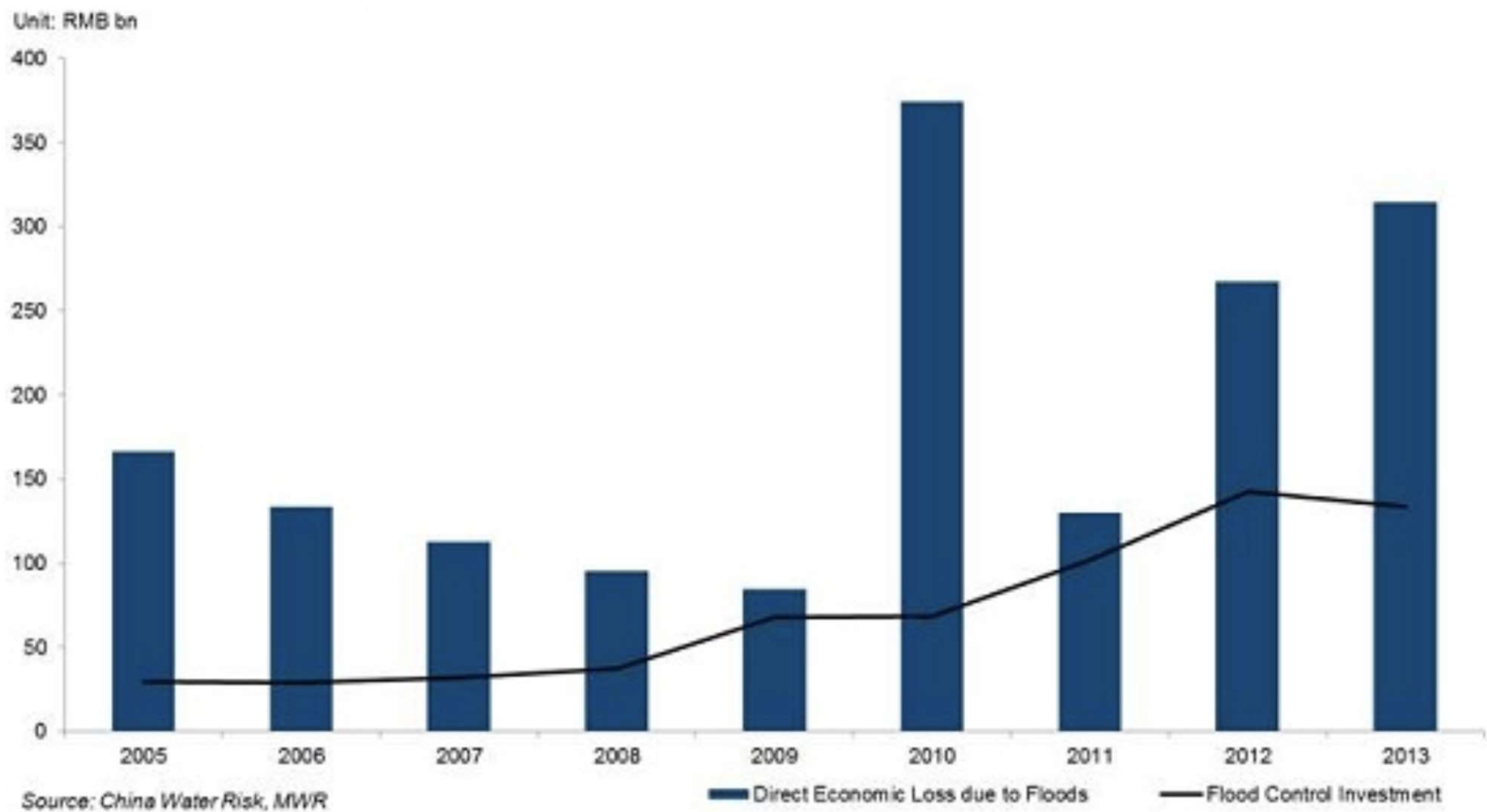


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- What are we doing to **respond**?



# Direct economic losses due to flooding vs. flood control spending in China, 2005-2013



Source: <http://chinawaterrisk.org/resources/analysis-reviews/china-gaps-in-rainy-day-funding/>



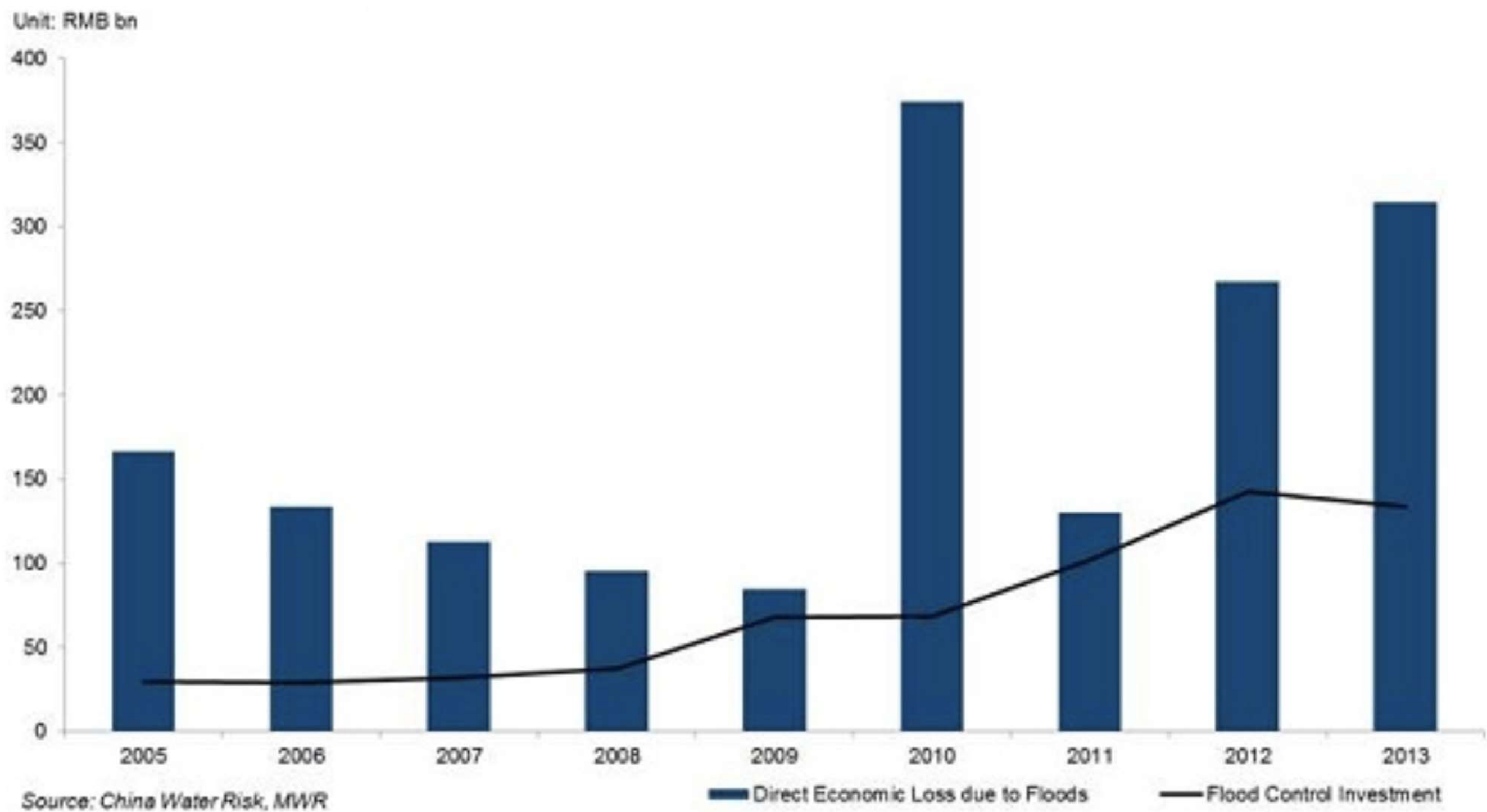
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- What are we doing to **respond**?
- Are our responses **delivering** what we thought they would?





# Direct economic losses due to flooding vs. flood control spending in China, 2005-2013



Source: <http://chinawaterrisk.org/resources/analysis-reviews/china-gaps-in-rainy-day-funding/>



# What is an indicator

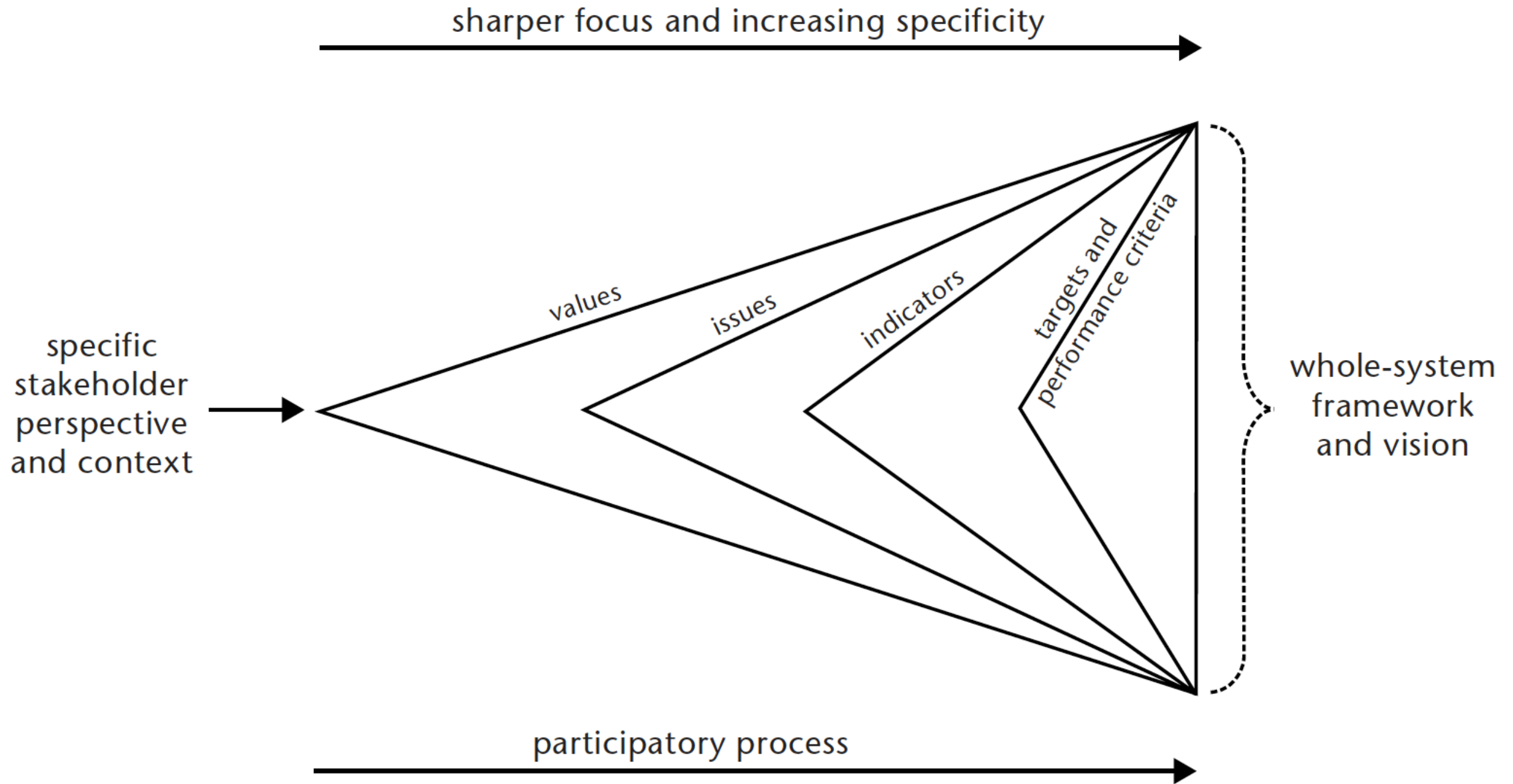
An indicator is developed on the understanding that we can manage only what we can measure. Indicators in general simplify complex phenomena.

(European Environment Agency)

Indicators attempt to convey a broader image than the underlying statistics would suggest.

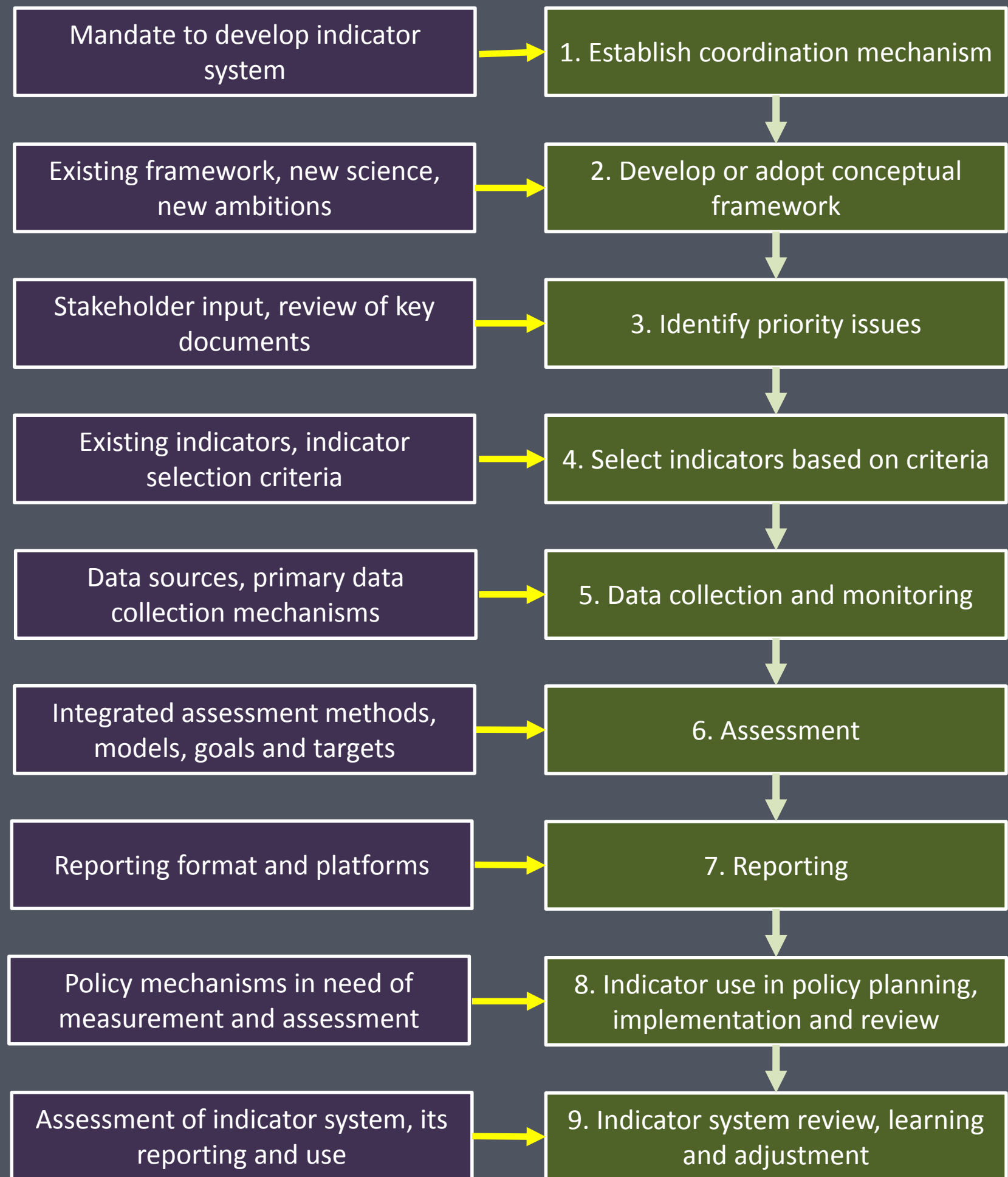
(Encyclopedia of the Earth)





Source: Pinter, L., K. Zahedi and D. Cressman (2000) Capacity Building for Integrated Environmental Assessment and Reporting . Winnipeg: IISD and Nairobi: UNEP.

# Indicator process





# Conceptual framework

A conceptual framework is a set of interrelated concepts, principles, and ideas that help organize and direct thinking about a particular issue.



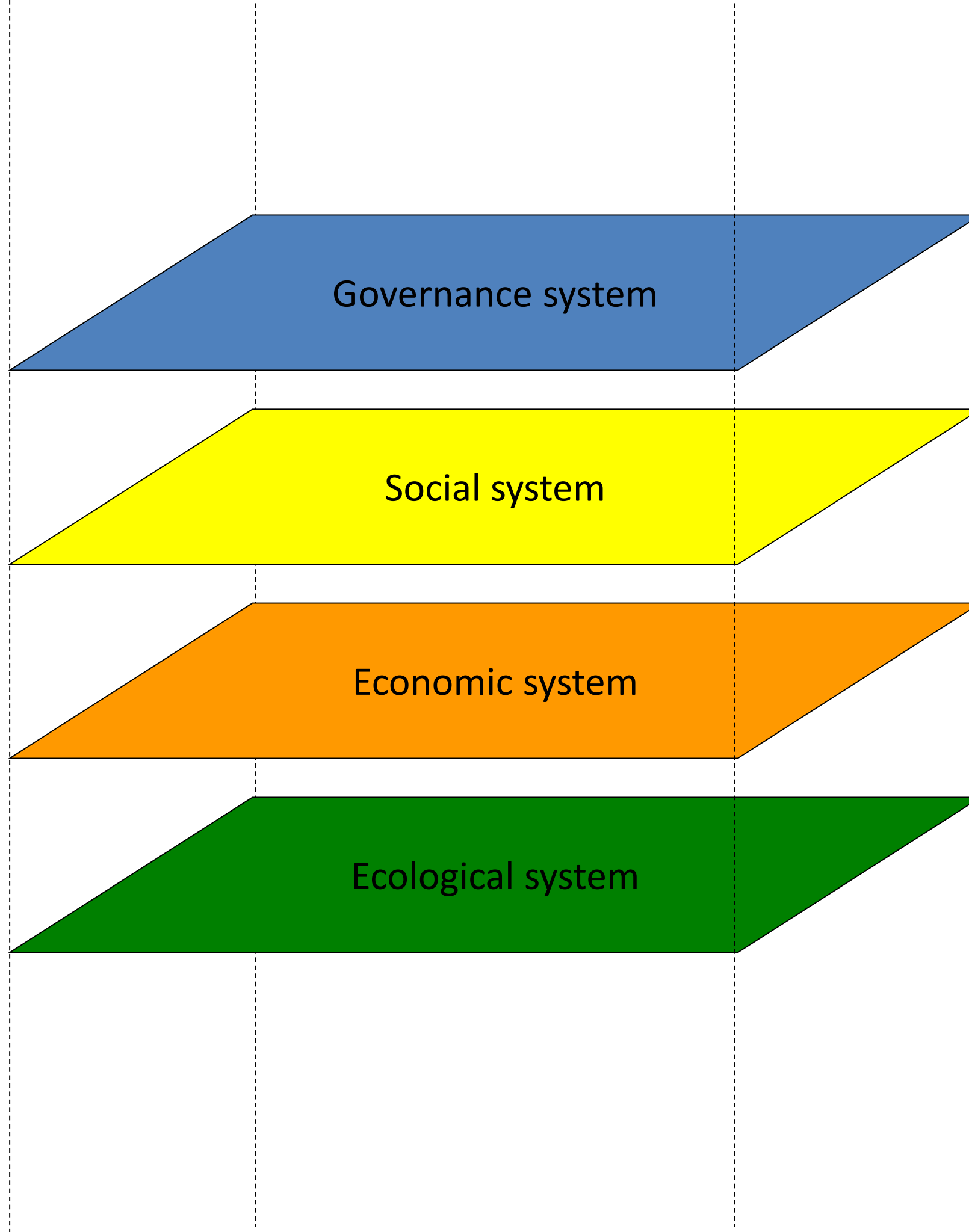
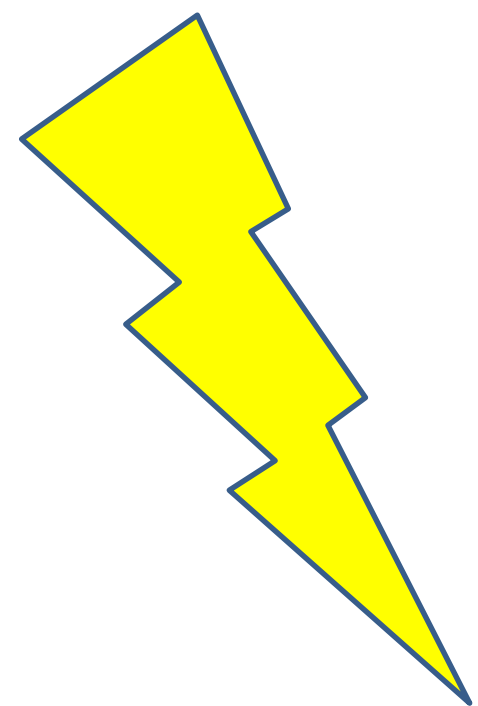
# Adaptation indicator frameworks:

## A brief systems story



Courtesy of BEE Environmental Communications  
<https://bee.co.hu/>





# Frameworks

What you want to measure can impact the kind of framework.

- Assessing a system? E.g.,  
Adaptation needs and actions,  
impacts in the studied system  
summarized in NAP
- Assessing a project/program? E.g.  
looking at the NAP  
activities/programs



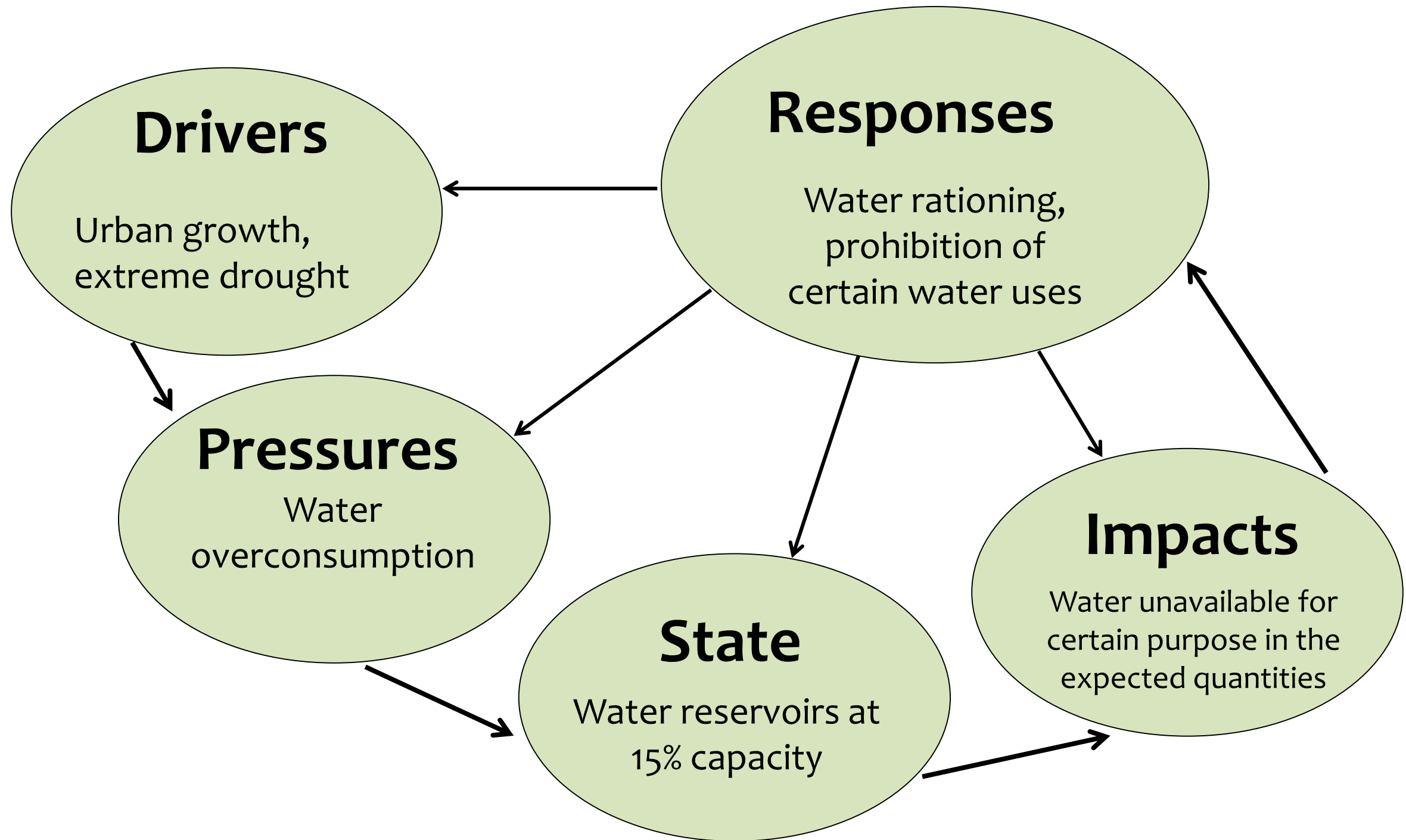


# Frameworks matter...

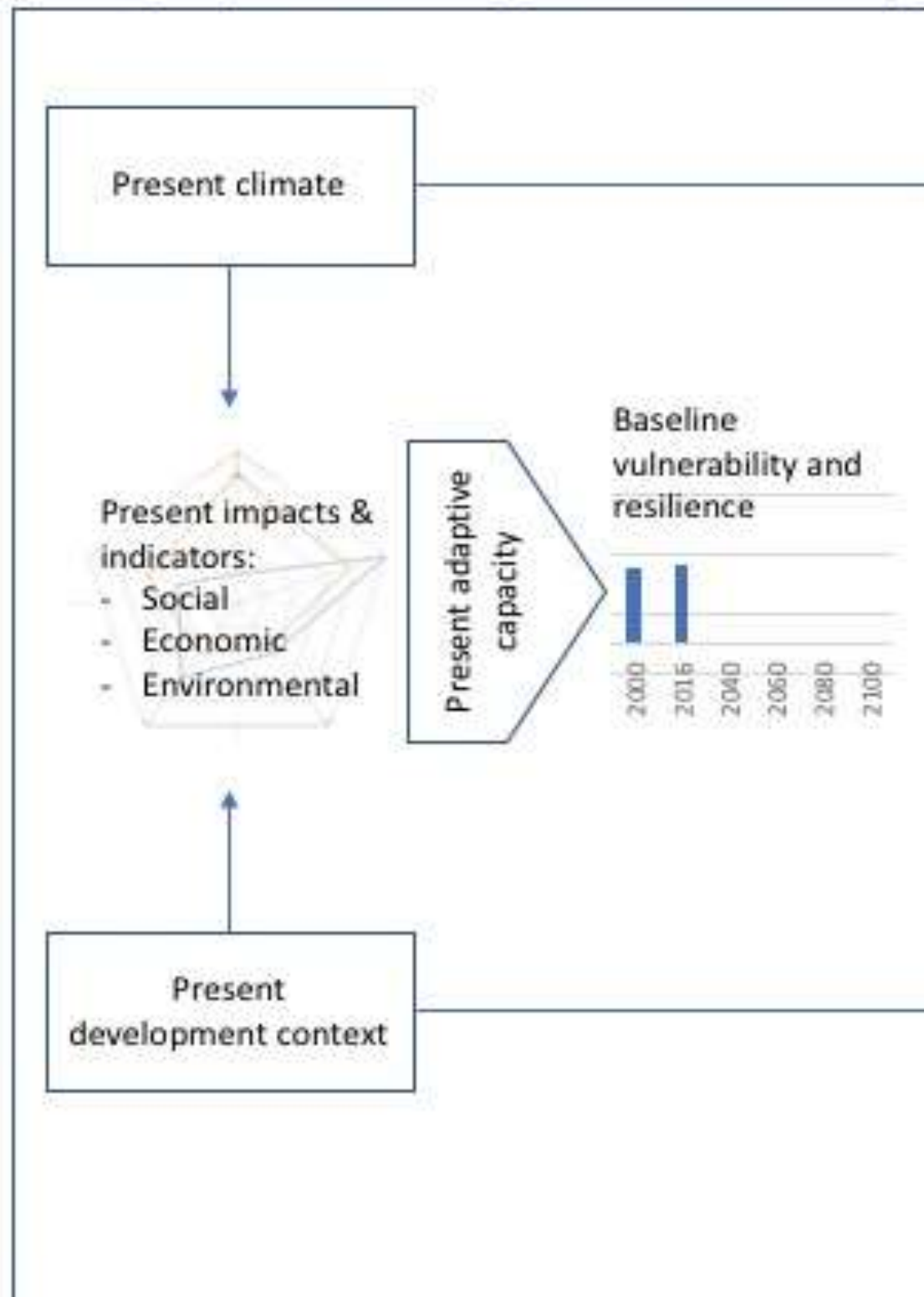
as they lead to different types of indicators

- **Vulnerability and impacts:** conditions adaptation needs to respond to
- **Adaptation outcomes:** changes that result from the implementation of plans policies and interventions
- **Processes:** adopted laws, strategies completed, strategies reviewed, \$ allocated

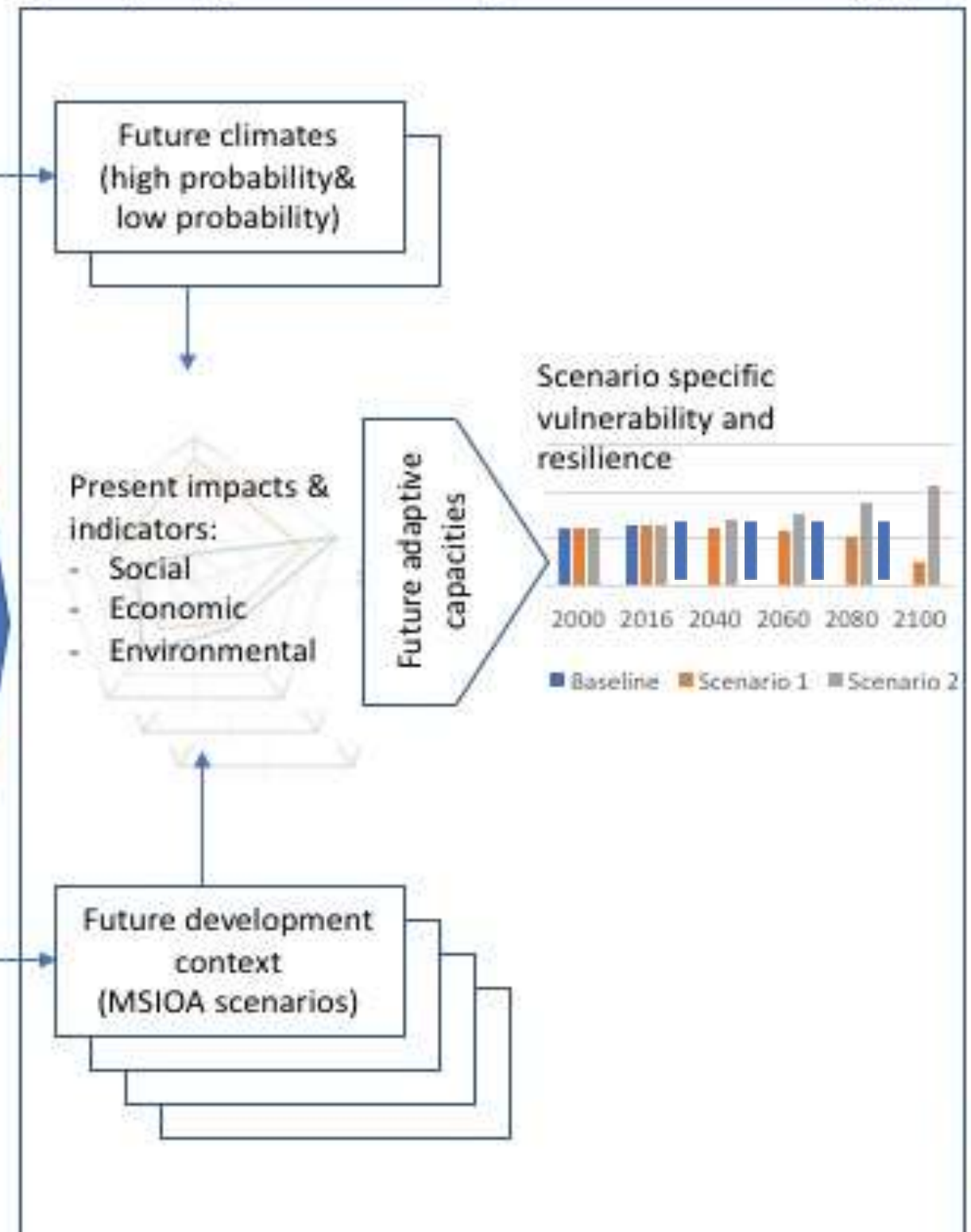




(Study region > Subregions > Locations)<sub>t</sub>



(Study region > Subregions > Locations)<sub>t+n</sub>



time



# Criteria for indicator selection

Only indicators that meet certain quality criteria should be used

Not all the criteria can be assessed at the beginning. Indicator system development is iterative.





# SMART Criteria

**Specific:** It is clear what the indicator is intending to measure

**Measurable:** Trackable, objectively verifiable

**Achievable:** Can realistically be measured

**Relevant:** Relates to important aspect, valid

**Time-bound:** Clearly states the time-frame for results





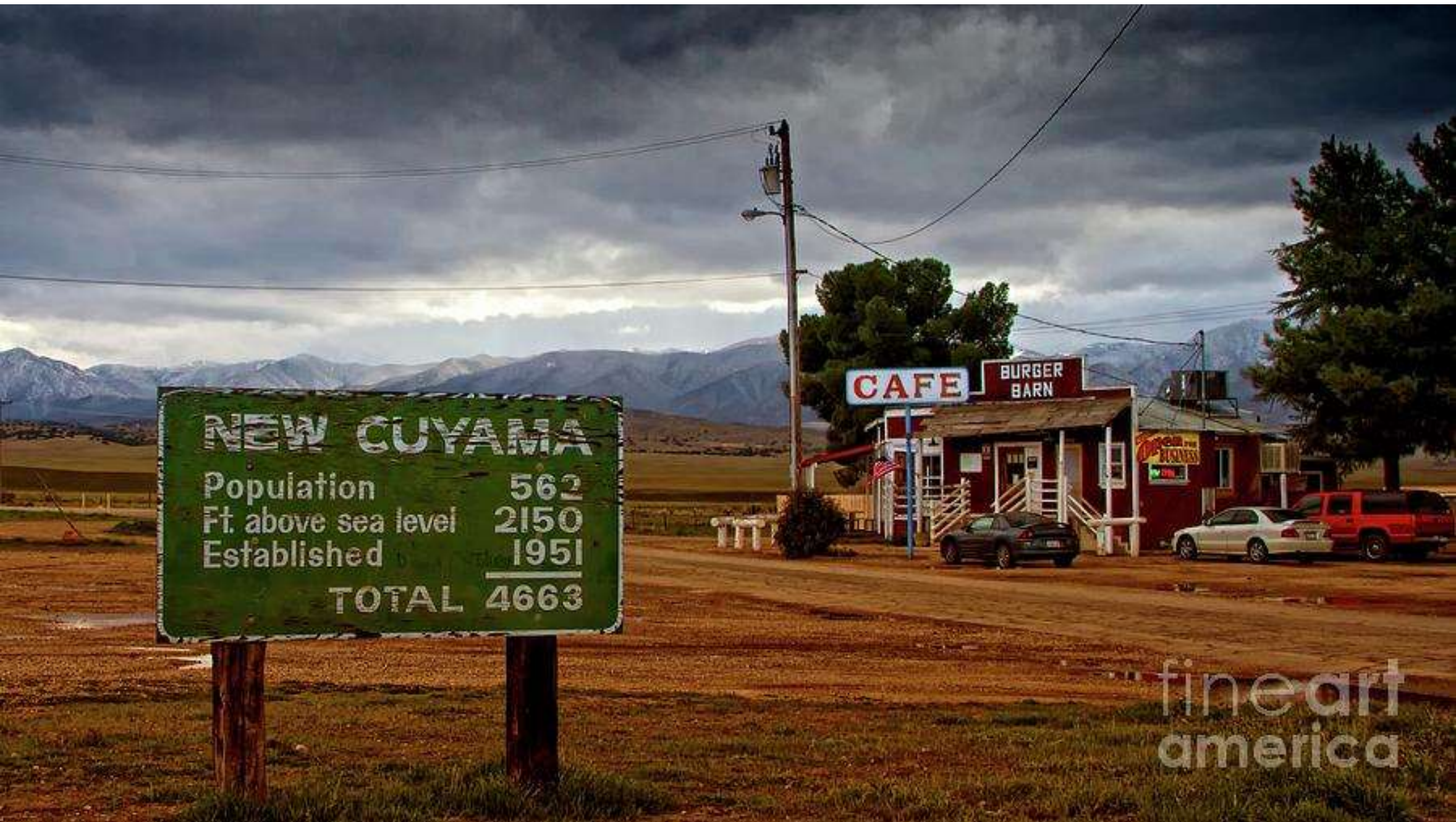
# Many other criteria...

- Scientific / technical credibility
- Relevance for decision-making
- Data availability
- Measurability
- Understandability
- Comparability
- Cost
- Etc.



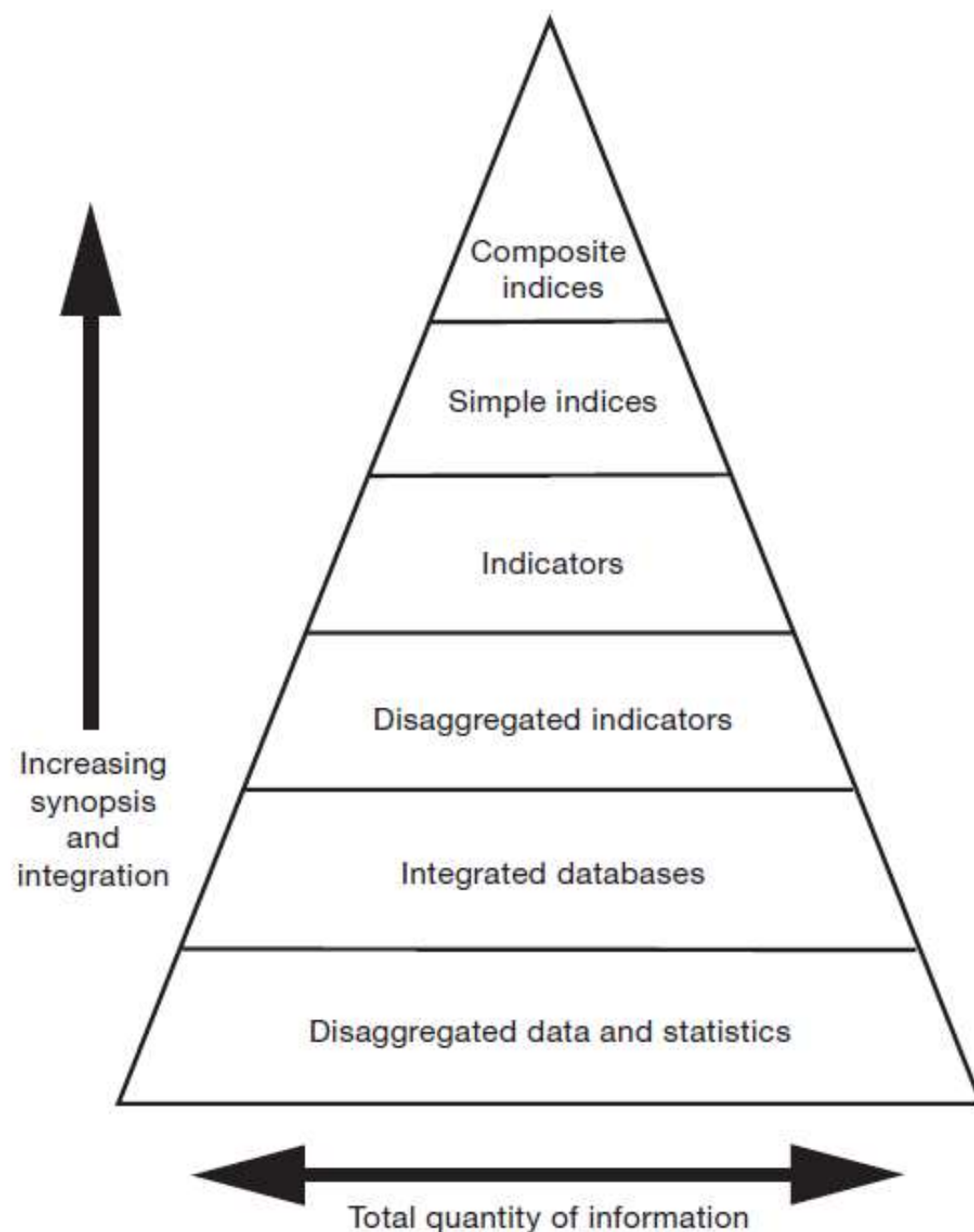


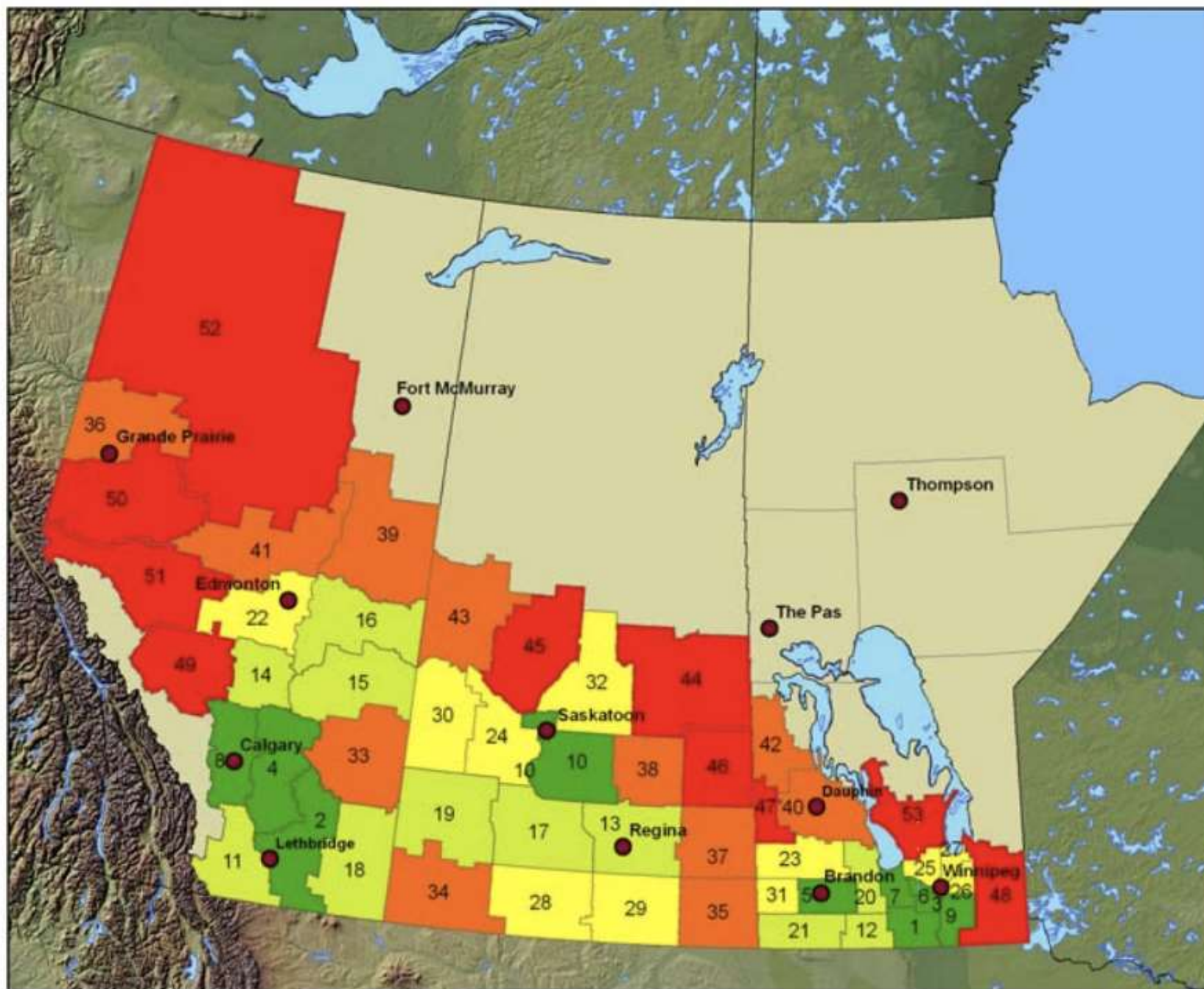
# Aggregate indicators





# Relationship between data, indicators and indices





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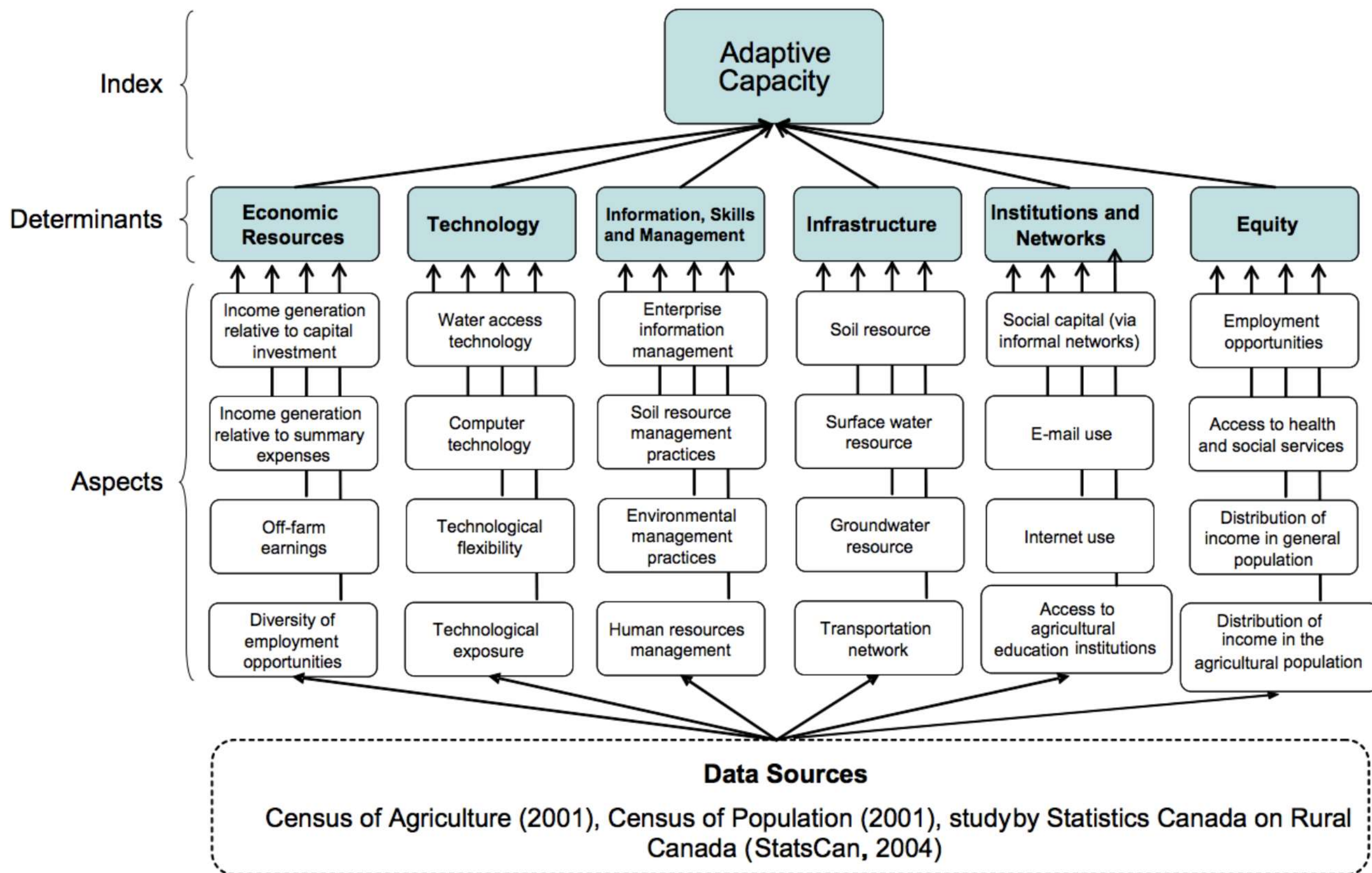


Figure 3-2. Framework for adaptive capacity to climate change on the Canadian Prairies.



# Indicator anatomy

- Accurate and catchy *name*
- Key messages, color-coded performance summary
- Definition of indicator
- Well-designed and fully labeled charts and maps
- Link to full data
- Connection to goals and targets
- Unit of measures
- Clear labelling
- Data sources
- Analysis, including interlinkages
- Further details
- Illustrative stories
- References



# Data types and data sources

- No magical source
- Statistical agencies
- Geospatial observation networks
- Research organizations and projects
- Citizen observation, crowdsourcing, big data
- Opinion surveys, polls
- Mass media
- Private sector
- International organizations
- ...





# Indicator challenges

Poor quality and limited availability of data

‘Shopping list’ of indicators

Complex calculation methods

Irrelevance

Over-aggregation or oversimplification

Changing monitoring system and measurement methods

Changing targets and reference values

Misleading interpretations

...



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# Exercise steps

- Form groups of 4-5, designate rapporteur (5 min)
- Each group member identifies an adaptation-related indicator from his/her personal practice and briefly describes its relevance for adaptation (10 min)
- Each group select the most interesting case and interviews the story holder to gather more details (10 min)
  - What was being measured
  - How was it measured
  - What was the key message of the indicator
  - How was the information used
- Share in plenary (2 min)





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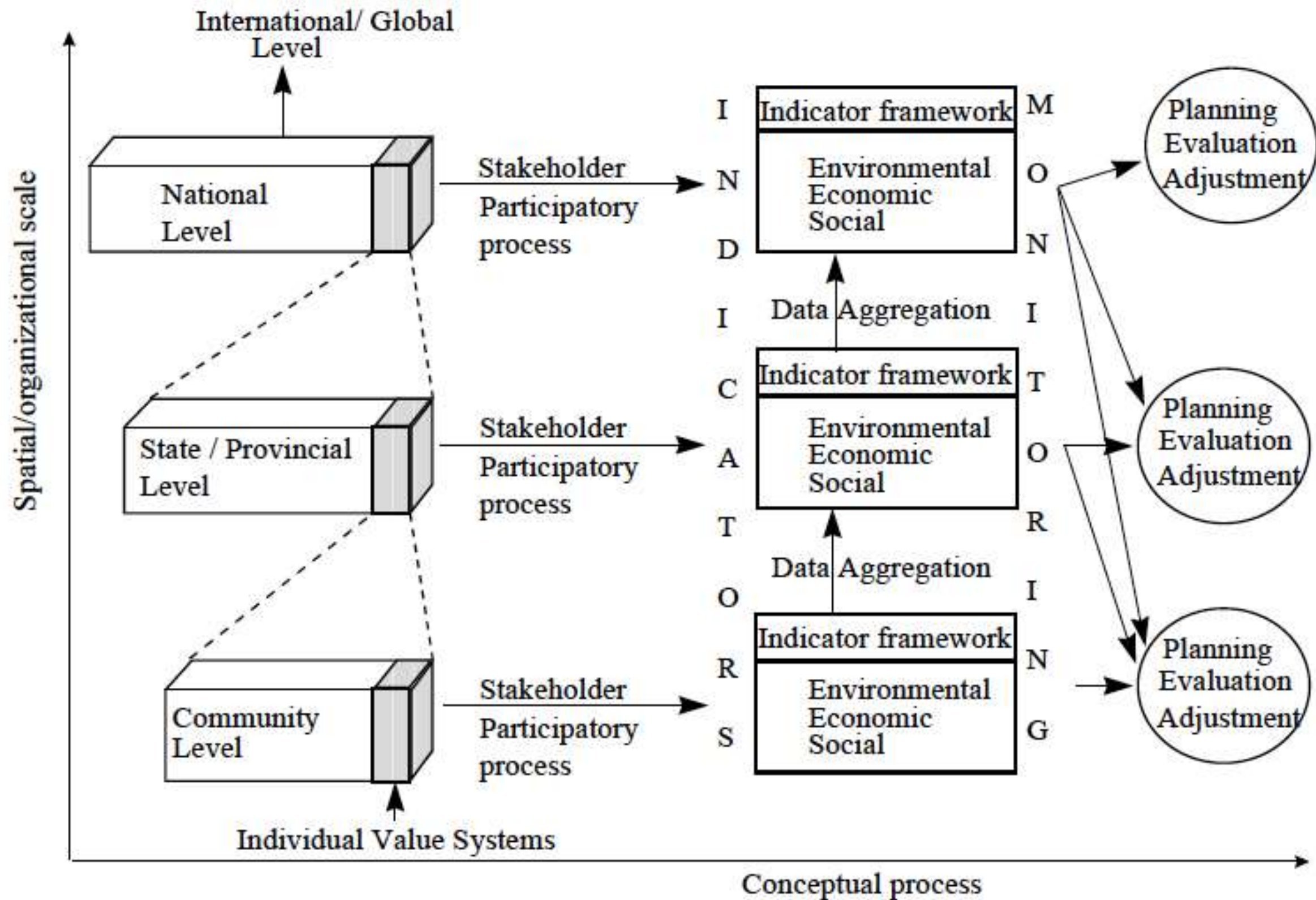


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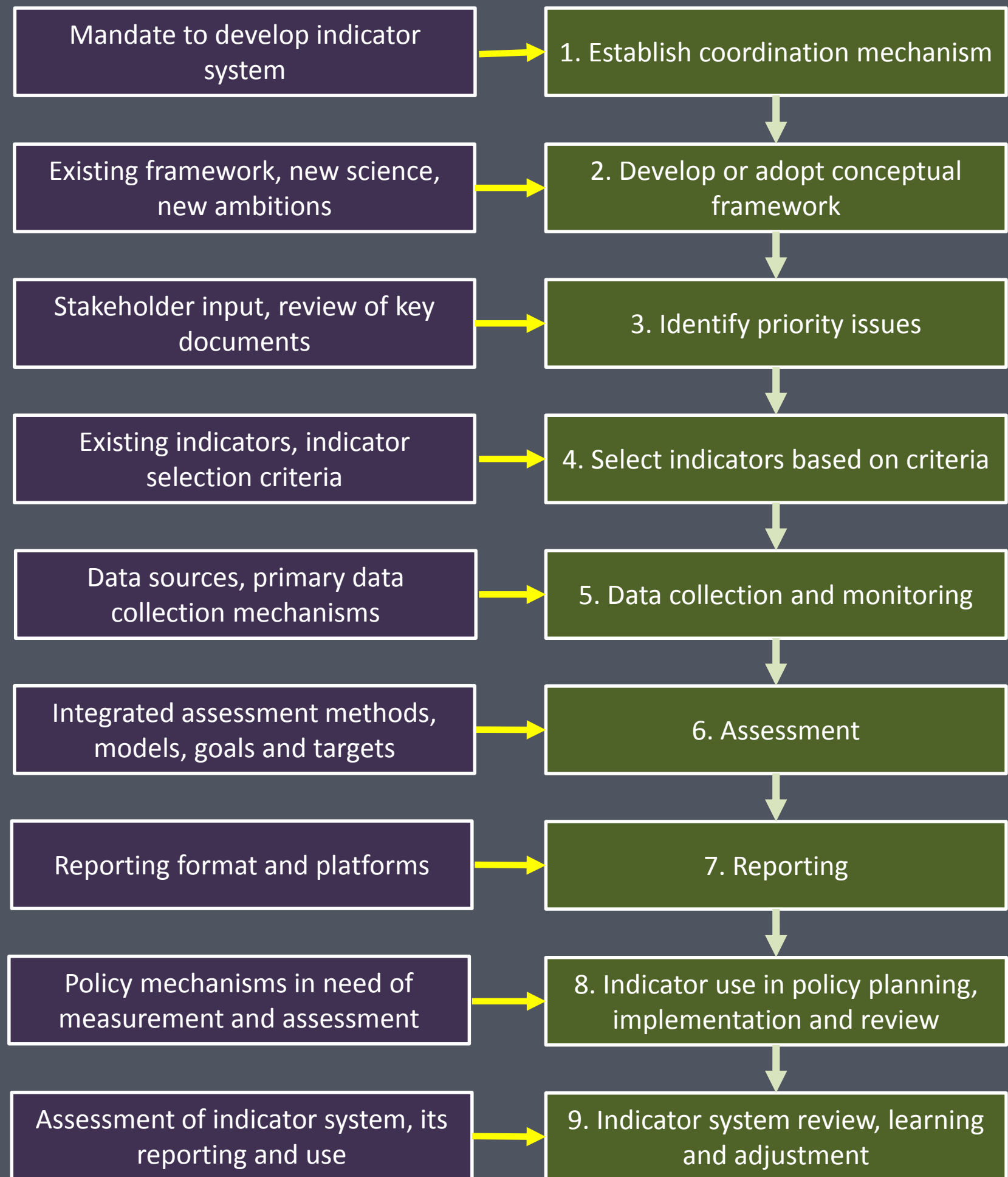
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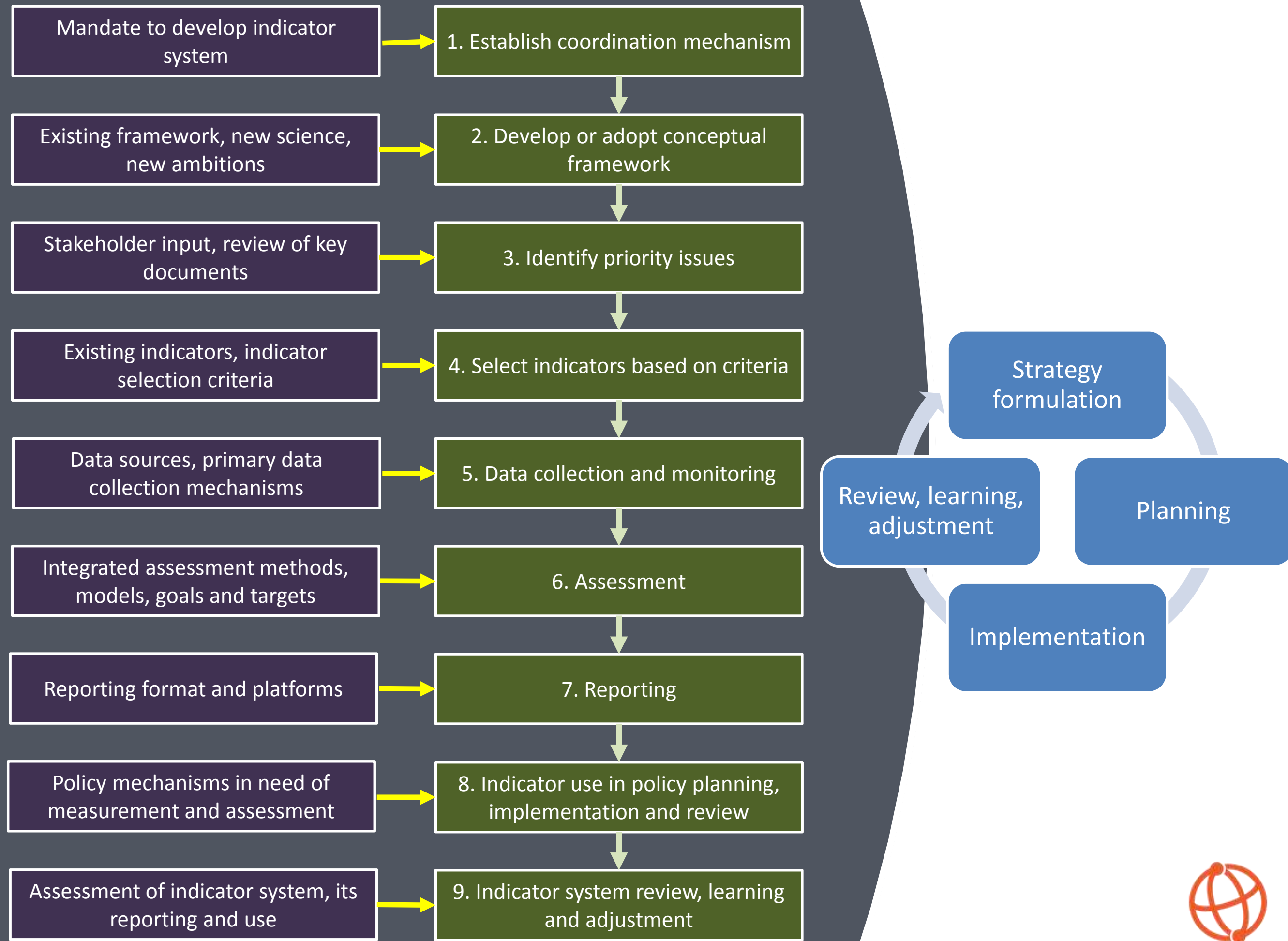


# Whose indicators – cross-scale connections



# Indicator process







# SDG indicators

- They are a *menu*, countries will select indicators that match their priority issues and context
- Standardized approach, methodology and quality control by UNSD and national partners
- Facilitate comparability
- The set is still (and will be) incomplete
- Adaptation-related indicators cut across essentially ***all*** SDGs and SDGIs
- Opportunity to harmonize indicators across scale
- Tied to SDG Means of Implementation mechanisms → donor assistance, national budget processes, strategic plans etc.
- There ***may be*** associated time-bound, quantitative targets that strengthen accountability



# Synergies between SDGs, Sendai framework and Paris agreement:

**Timo!**





# Indicator uses

- To measure overall 'progress'
  - To provide early warning
  - To support assessment and analysis
  - To support the development of a holistic approach
  - To support projections and scenario development
  - To study distributional issues
  - To help establish performance targets
  - To aid the development of budgets and investment
  - To educate decision-makers and the general public
- 
- Source: OECD, EEA, FAO, Lowell Center for Sustainable Development

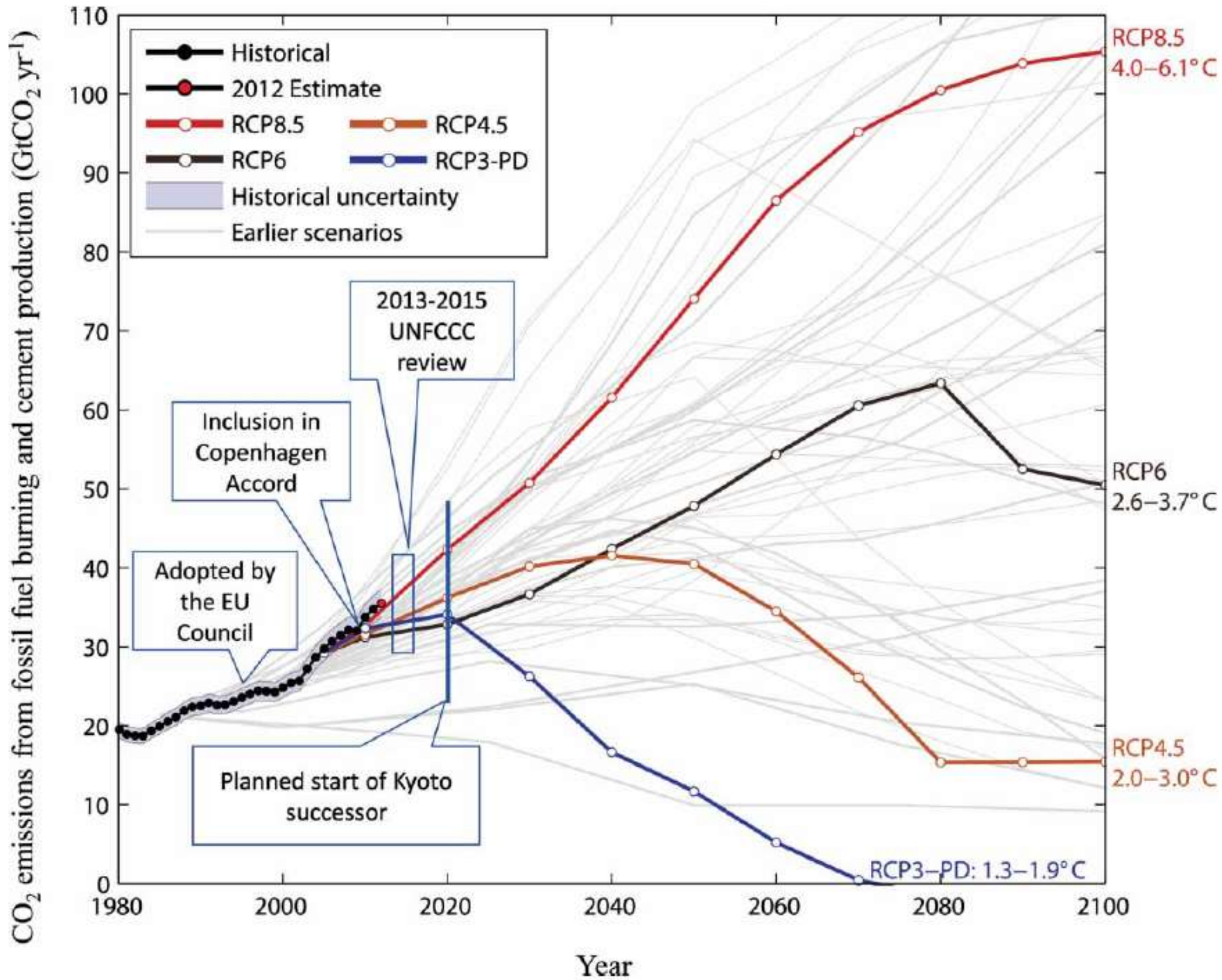


## Example: indicator use in scenario planning

- Adaptation plans developed *today* must address the conditions of *future* climate change
- Building NAPs around indicators with past data alone would be misleading
- Working with projections opens a whole new class of conceptual, methodological, communication and political complexities









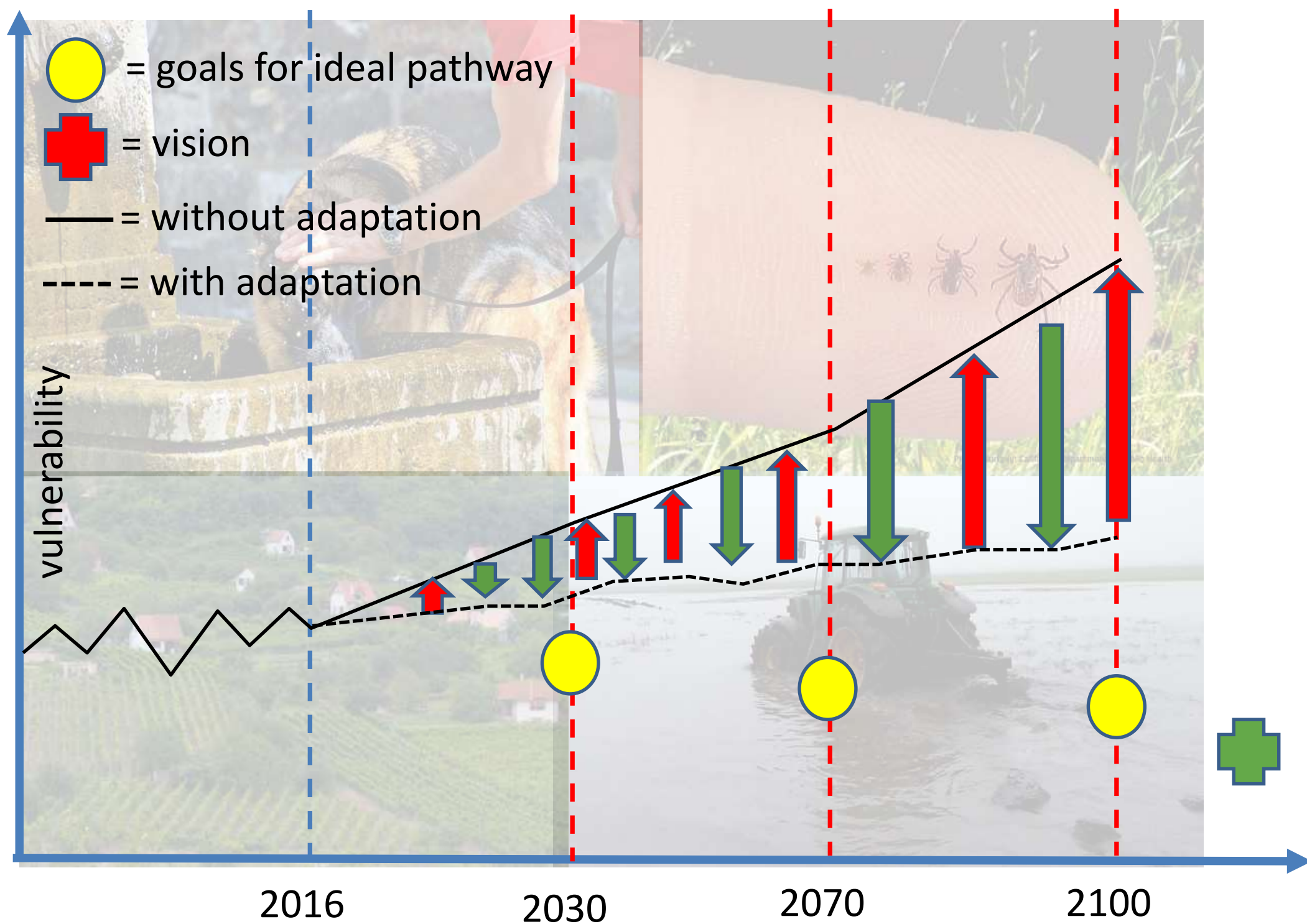
# IMPRESSIONS project

- Impacts and Risks from High-end Scenarios: Strategies for Innovative Solutions
- Study the impacts of high-end climate change scenarios (RCP4.5 and 8.5) for vulnerability and adaptation
- 4-year, EUR8M project funded by the EU
- 4 integrated (climate and socio-economic) scenarios
- Developed in close collaboration with stakeholders
- Case studies in Scotland, Iberia, Hungary, Eu and Central Asia
- <http://www.impressions-project.eu/>



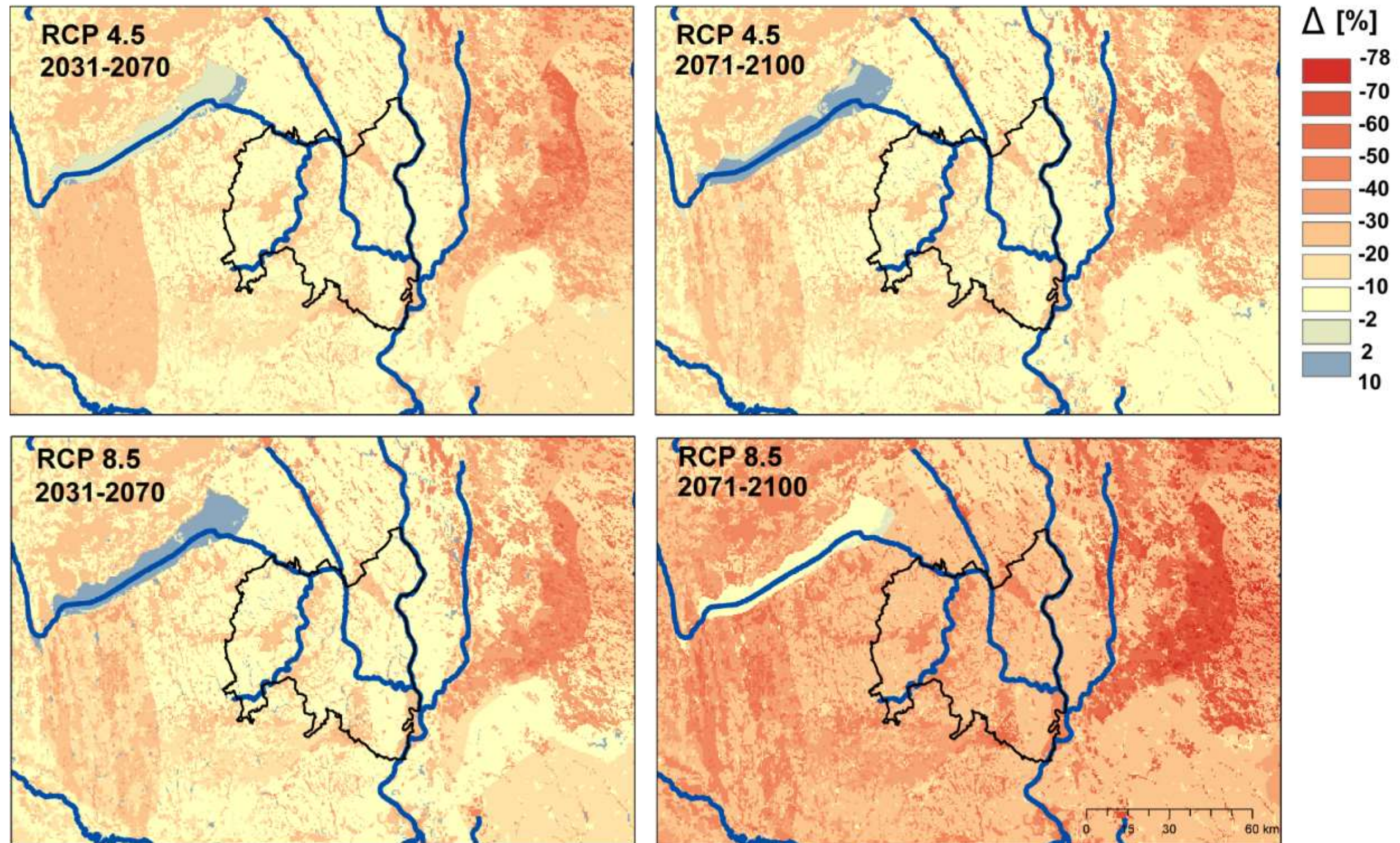








## Changes in annual surface runoff compared to the years 1971-2000





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# National examples

Colombia  
South Africa





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# BellagioSTAMP:



SUSTAINABILITY  
ASSESSMENT  
AND  
MEASUREMENT  
PRINCIPLES

**iisd** International Institute for Sustainable Development  
Institut international du développement durable  
[www.iisd.org/measure/](http://www.iisd.org/measure/)



<http://www.iisd.org/measure/principles/progress/bellagiostamp/>



# Principle 1: Guiding vision

Assessing progress towards sustainable development is guided by the goal to **deliver wellbeing within the capacity of the biosphere** to sustain it for future generations.





# Principle 2: Essential considerations

Sustainability assessments consider:

The underlying **social, economic and environmental system** as a whole and the **interactions** among its components

The adequacy of **governance mechanisms**

Dynamics and interactions between **current trends and drivers of change**

Risks, uncertainties, and activities that can have an **impact across boundaries**

Implications for decision making, including **trade-offs and synergies**



# Principle 3: Adequate scope

Sustainability assessments adopt:

Appropriate **time horizon** to capture both short and long term effects of current policy decisions and human activities

Appropriate **geographical scope** ranging from local to global



# Principle 4: Framework and indicators

Sustainability assessments are based on:

A **conceptual framework** that identifies the domains that core indicators have to cover **reliable data, projections and models**

The most recent and reliable data, projections and models to infer **trends** and build **scenarios**

**Standardized measurement** methods, wherever possible, in the interest of **comparability**

Comparison of indicator values with **targets and benchmarks**, where possible





# Principle 5: Transparency

Sustainability assessments:

Ensure that data, indicators and results are **accessible to the public**

Explain the **choices, assumptions and uncertainties** determining the results of the assessment

Disclose **data sources and methods**

Disclose all sources of **funding** and potential **conflicts of interest**



# Principle 6: Effective communication

In the interest of effective communication, to attract the broadest possible audience and minimise the risk of misuse, sustainability assessments:

Use **clear and plain language**

Present information in a **fair and objective** way, that helps to build **trust**

Use innovative **visual tools and graphics** to aid interpretation and tell a **story**

Make data available in as much **detail** as reliable and practical



# Principle 7: Broad participation

To strengthen their legitimacy and relevance, sustainability assessments:

Find appropriate ways to **reflect the views of the public**, while providing **active leadership**

**Engage early** on with users of the assessment so that it best fits their needs





# Principle 8: Continuity and Capacity

Sustainability assessments require:

**Repeated** measurement

**Responsiveness** to change

Investment to develop and maintain

**adequate capacity**

Continuous **learning and improvement**





# NAP Global Network

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**Twitter: @NAP\_Network**

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