Adaptation of the corporate Ecosystem Services Review to a territorial approach

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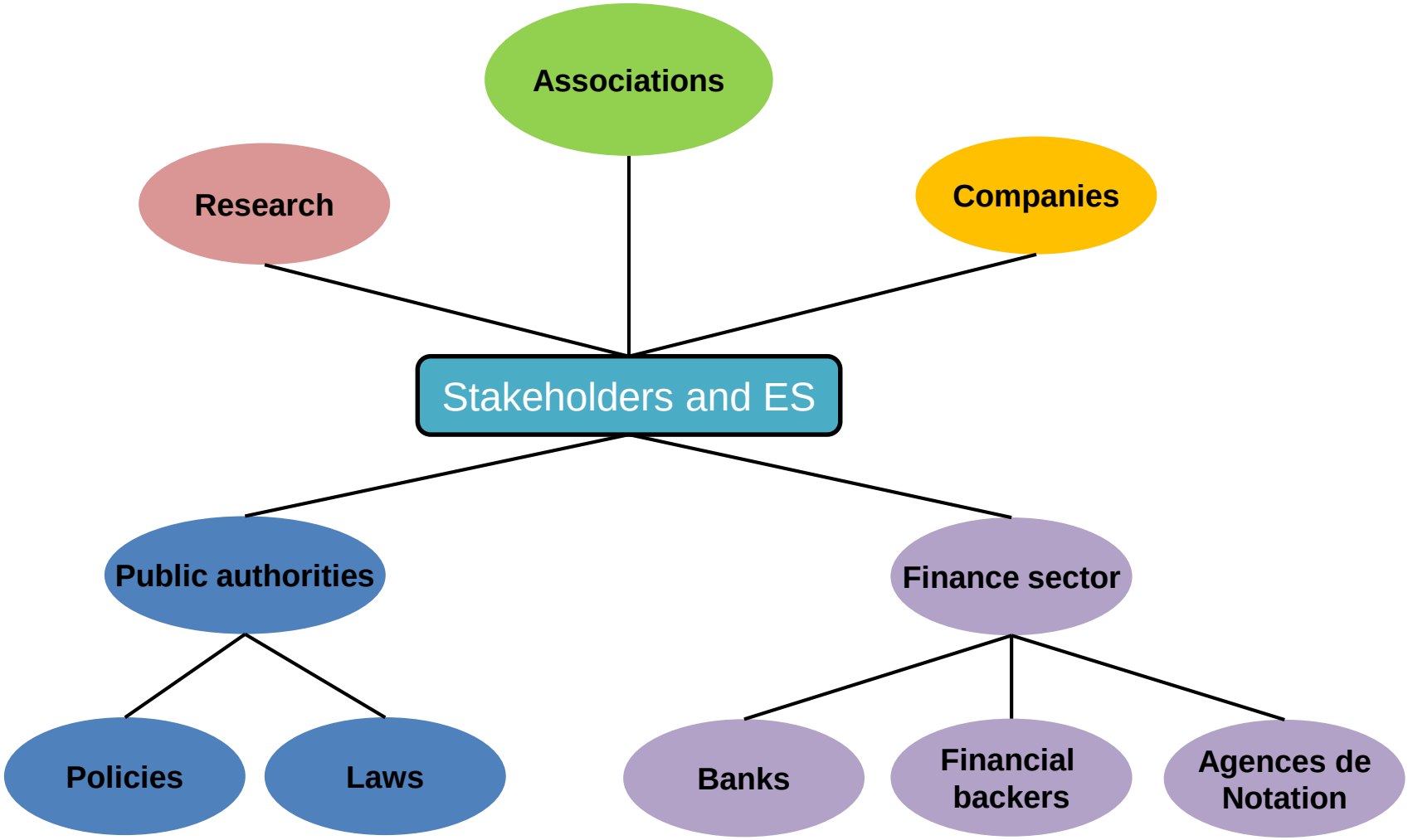
The rise of the ES concept



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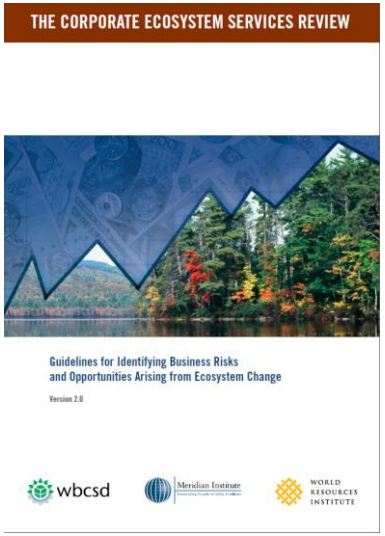
A milestone towards a better integration of impacts and dependencies on ES

- Developed by WRI, WBCSD and Meridian Institute in 2008
- Applied by more than 300 companies
- A voluntary, qualitative and adaptable methodology
  - > Positive and negative impacts on ES
  - > Dependencies on ES



Select the scope → Identify priority ecosystem services → Analyze trends in priority ecosystem services → Identify business risks and opportunities → Develop strategies

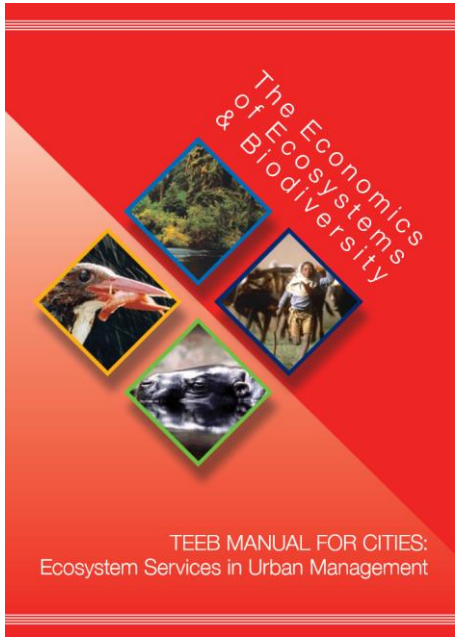
What is the interest of the ESR?

- Assessment and prioritization of environmental issues as a complement to environmental resource management
- Development of an integrated management of these issues
- Innovation and support to CSR

Why an adaptation to urban context? (1)

- Cities also fundamentally depend and impact on ES
  - > Air quality regulation, food provision, micro-climate regulation, recreation…
  - > Contribution to city-dwellers well being

- Growing urbanization
  - > More than 50 % of the global population lives in cities
  - > Cities account for 3 % of global land area…
  - > …and consume 75 % of the global resources



- TEEB for Cities: maintaining functioning ecosystems as the most cost-effective solution to meeting human needs

- ES approaches lack from practical implementation in urban context (Delgado and Marín, 2015), (Haase, Larondelle et al. 2014)

Why an adaptation to urban context? (2)

- Analysis of French urban planning documents:
  - > Growing integration of biodiversity issues but very few ES-based approaches
  - > Progressive shift in local policies from biodiversity preservation to enhancement of well-functioning ecosystems
- Analysis of planning and environmental documents for 5 European cities
  - > Implicit presence of the ES concept
  - > Identification of key ES, mostly regulating and cultural ES

	Stockholm	**Berlin**	**Stuttgart**	**Montpellier**	**Lyon**
Population	830,000	3.4million	580,000	250,000	480,000
Green areas	40%	41%	55%	33%	24%
Examples of key ES	Noise and air quality regulations	Rainwater runoff regulation	Micro-climate and air quality regulations	Rainwater runoff, noise, and air quality reg.	Air quality and noise regulations, cultural ES

Need for a framework to better integrate ES into territorial and actions plans

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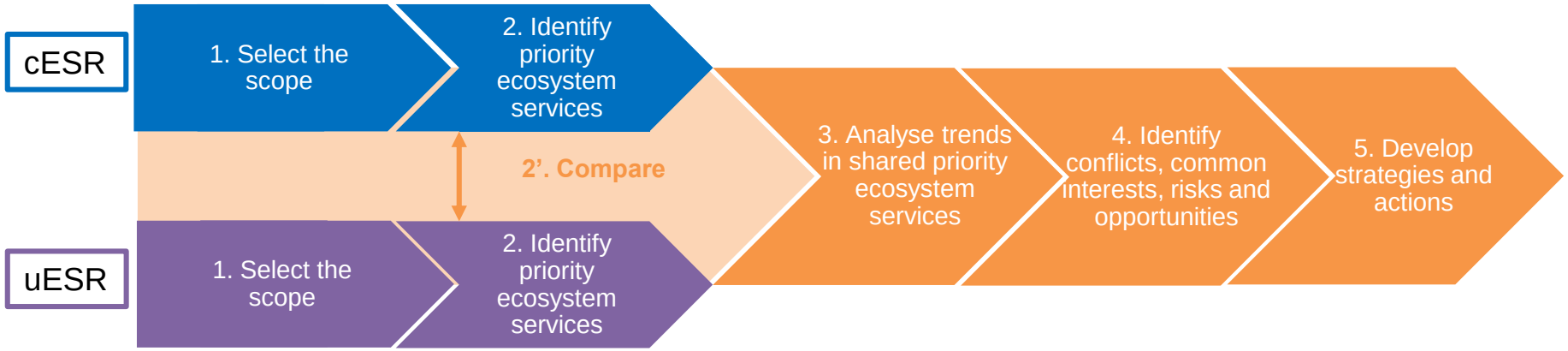
Why?

Help local economic stakeholders to make their actions more relevant to the local context and to be better coordinated

Objective of the presentation

Propose a broader methodological framework adapted to:

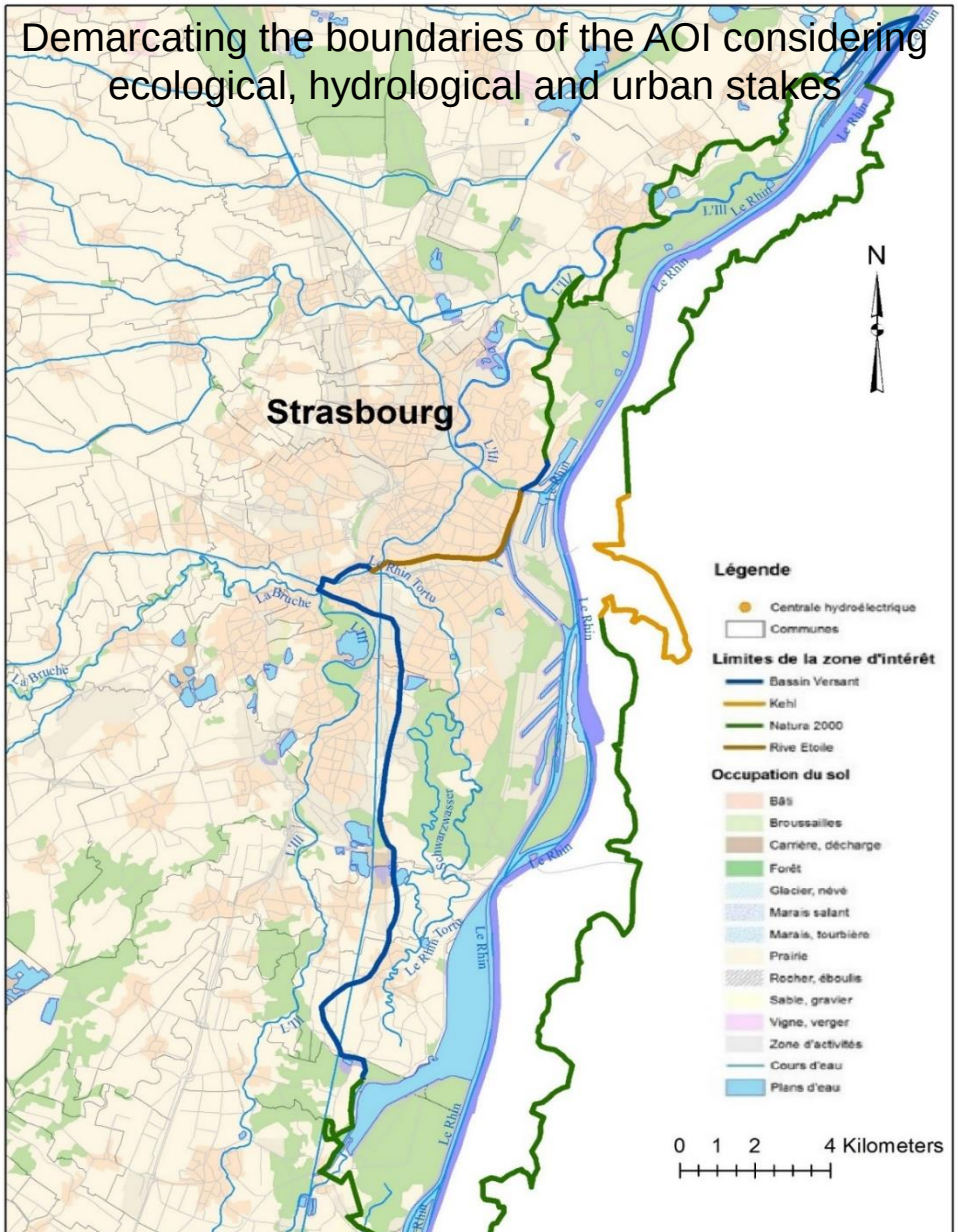
- > urban and peri-urban contexts
- > a combination of private and public stakeholders



First application
Selection of the scope

- Spatio-temporal scopes must be interconnected
  - ➢ Same temporal scope
  - ➢ Spatial scopes should largely overlap or the scope of the cESR should be included in the scope of the uESR

Demarcating the boundaries of the AOI considering ecological, hydrological and urban stakes



Sources: BD Carthage, version 3.0, IGN (March 2006);
BD Carto®, version 3.1, IGN (October 2010, révision February 2013);
BD TOPO® version 2.1, IGN (October 2011, révisions January 2014).
Design: S. Michel, 22.05.2015

First application
Identification of priority ES

- Review of Strasbourg plans to identify underlying ES
- Selection of 7 priority ES

Priority ES	Example of measures (plan)
Water provisioning	Reduce impacts of quarries on groundwater (SDAGE)
Flood regulation	Protection of floodplains (SDAGE, SAGE, SCOT)
Water quality regulation	Agricultural pollution control (SDAGE, SAGE)
Climate regulation	Reduce greenhouse gases emissions (SRCAE)
Maintaining habitat and populations	Enhance wildlife corridors (SRCE, SDAGE, SAGE, SCOT, PLU)
Air quality regulation	Reduce air pollution (SRCAE)
Aesthetics	Protect landscape quality (SCOT)

Theoretical selection of common priority ES

- Comparison of lists

	Priority ES for the territory	Priority ES for a company	Common list of priority ES
Fisheries	✗	✓	✓ / ✗
Water provisioning	✓	✓	✓
Flood regulation	✓	✓	✓
Water quality regulation	✓	✓	✓
Climate regulation	✓	✗	✓ / ✗
Maintaining habitat and populations	✓	✓	✓
Air quality regulation	✓	✗	✓ / ✗
Aesthetics	✓	✗	✓ / ✗
Recreation	✗	✓	✓ / ✗

Next steps

1. <u>Condition and trends in the ES</u>
- Supply and demand
- Quantity and quality
- Present and future

3. <u>Company activities</u>
- How
- Where
- To what degree

2. <u>Direct drivers</u>
- Changes in land use and land cover
- Overconsumption
- Climate change
- Pollution
- Invasive, non-native species

<u>4. Activities of others</u>
- Who
- How
- Where
- To what degree

5. <u>Indirect drivers</u>
- Governmental
- Demographic
- Economic
- Technological
- Cultural and religious

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- Cultural and religious

Why mapping ES?

- ES are spatially distributed
- European Strategy for Biodiversity
- Maps are good support for communication and decision-making

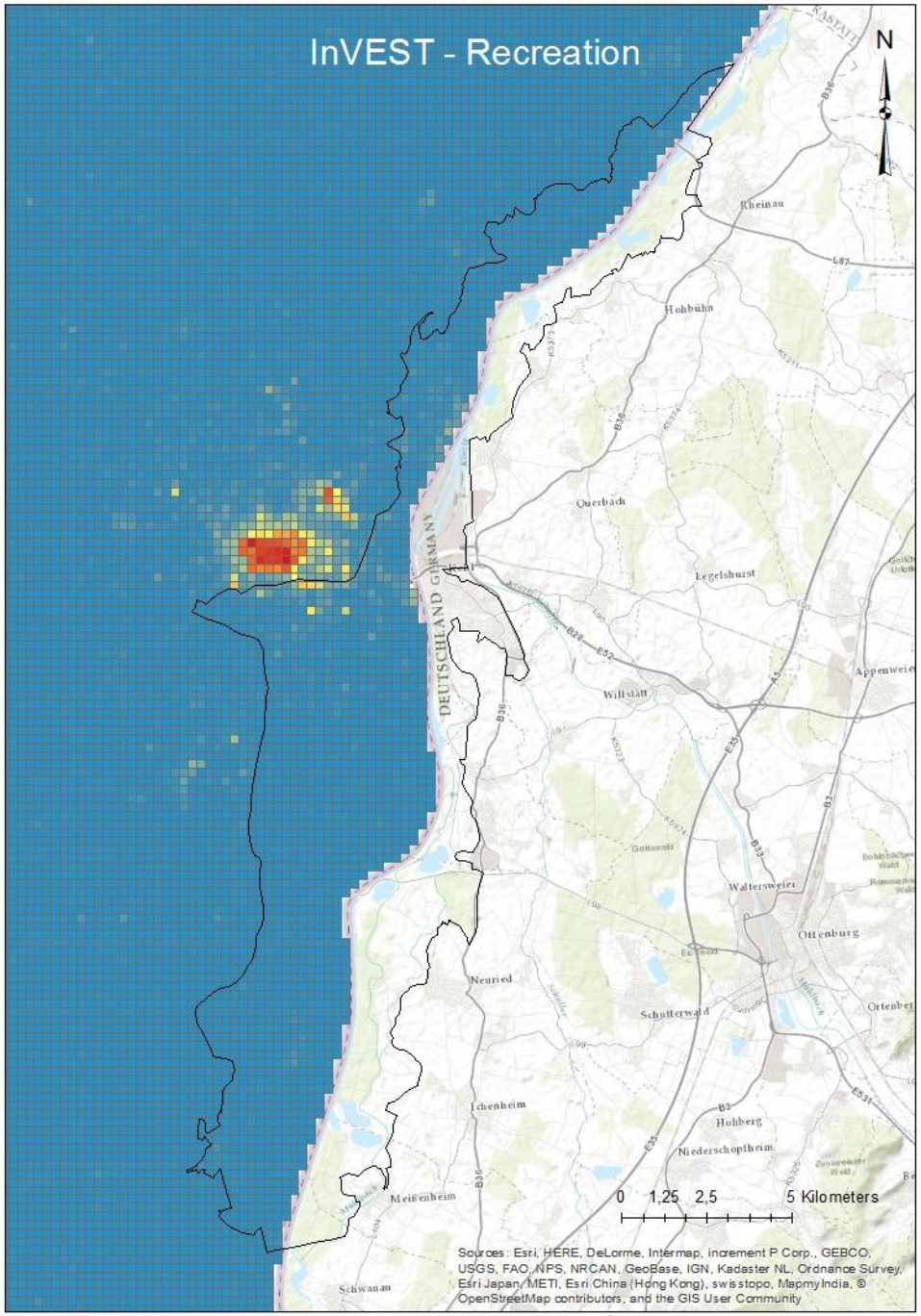
Which possible contributions to the ESR?

- To enhance the analysis of trends in priority services

  > Offer and supply, threats, change, scenarios
- To support identification of risks, opportunities
- To localize actions to be implemented

Difficulties

- Large panorama of available tools: how to select?
- Heterogeneity of results (Seppelt *et al.*, 2011), (Martínez-Harms et Balvanera, 2012), (Egoh *et al.*, 2012), (Crossman *et al.*, 2013), (Schägner *et al.*, 2013)
- Models do not necessarily provide the expected results



Design: M. Pons, 19.05.2016

Discussion – Outlooks

- Proposition of a framework to deal with the lack of integration of ES-based strategies in action plans

- The work conducted so far relies mainly on methodological reflections and developments

➢ Need for implementation

> Test of the whole methodology

> Dialogue with stakeholders

> Explore other GIS-based models for ES assessment

➢ Further objective: assess the potential ability of an ES-based approach to improve dialogues, relationships and partnerships

Thank you…

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