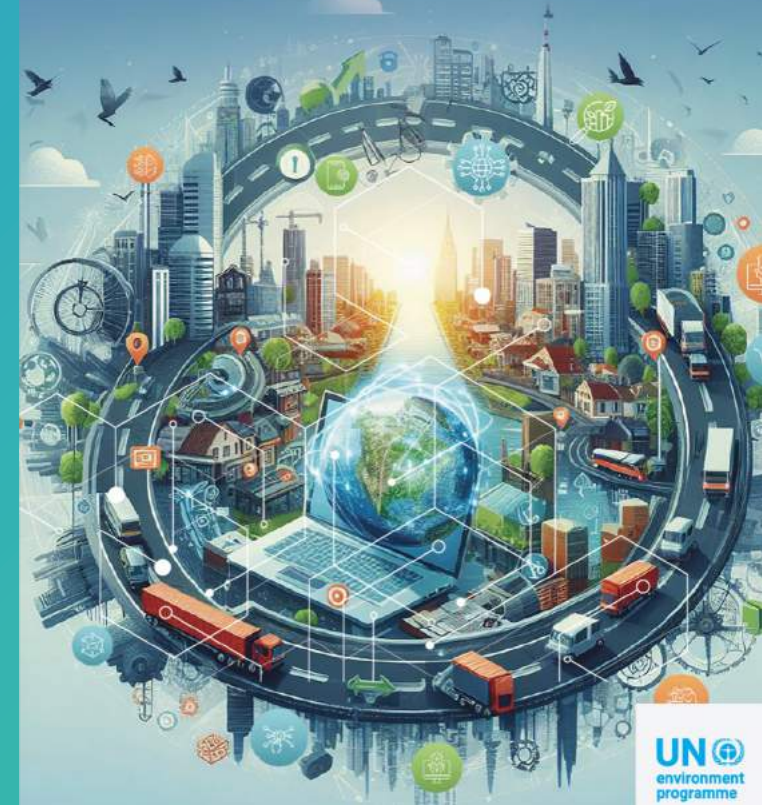


KEY FINDINGS

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Digital Public Infrastructure for Environmental Sustainability



Connected Data



Environmental data



Deforestation levels



Economic operations




Beef value chain



Public policy information



Regulation on deforestation-free products



Aerial view of a city street grid with a blue overlay and a network diagram in the top right corner.

A BLEND OF DIGITAL PUBLIC AND PRIVATE INFRASTRUCTURE IS NEEDED

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Digital Public Infrastructure as a Data Exchange System:



- Data generation
- Data collection
- Ease the discovery of data sources
- Reduce the barriers to data sharing

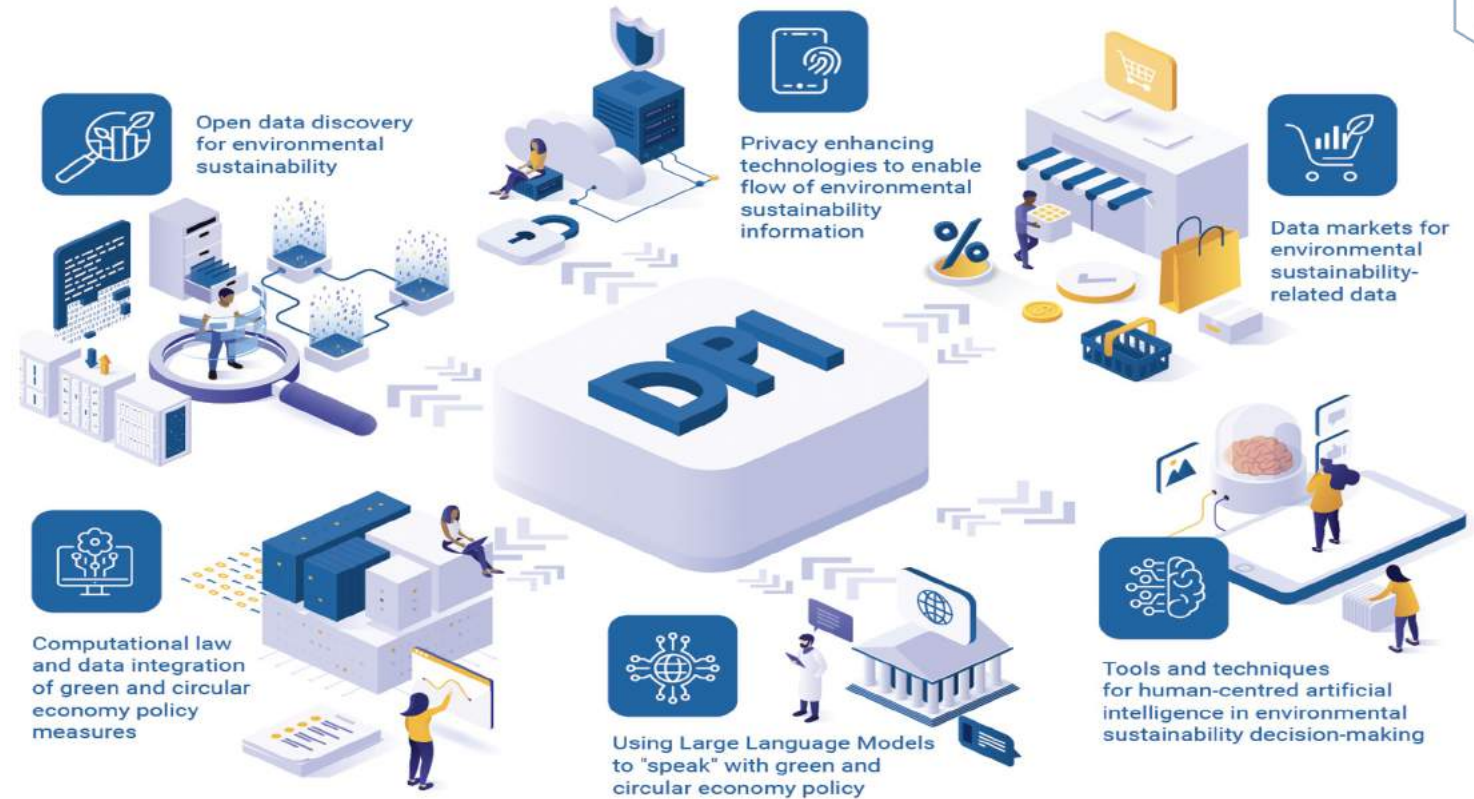


Active participation in data exchange: multiple roles



What is required?

Technology Innovations - The Challenges



Open Data Discovery



- How to find relevant information for my organization, country, use case, etc. ?
- Solutions:
 - Federated (decentralized) open data repository
 - Build, integrate and use ontology/terminology of environmental policy



Privacy Enhancing Technologies



- How to make sure that data can be stored and shared safely?
- Solutions:
 - Differential privacy:
 - Add random noise but keep characteristic distribution
 - Homomorphic encryption:
 - Enables working on encrypted data



Data Markets



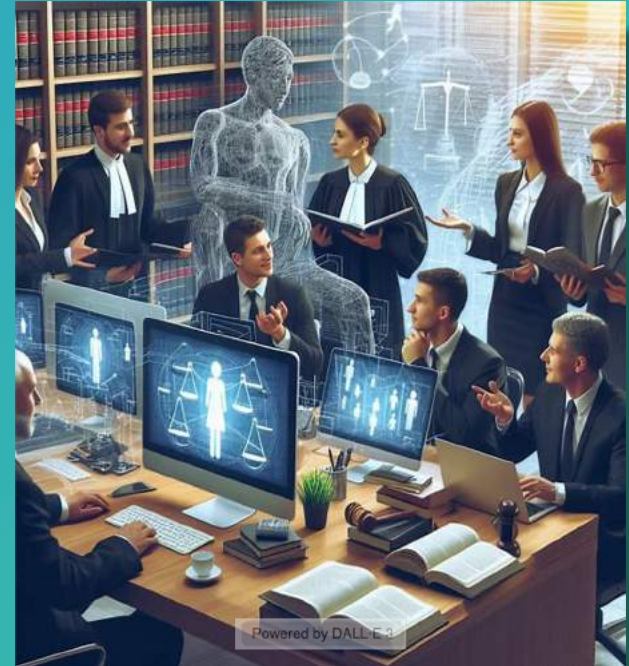
- What are incentives for sharing data?
- What is a good reward model?
- Solutions:
 - Marketplaces that make it easy to share, discover or monetize data
 - Blockchain technology to ensure secure and “fair” transactions



Computational Law and Data Integration



- How to keep track of changing policies/law?
- How to make policies understandable by machines/ algorithms?
- Solutions:
 - Computational law: write law in specific computer/coding language
 - Automatic data extraction and integration to build computer-readable law



Usage of Large Language Models



- How do I teach LLMs the language of green economic policy making?
- How to avoid hallucination of LLMs?
- Solutions:
 - Use LLMs with human-in-the-loop to explain answers
 - Enhance explainability with fact checking against trusted sources



Tools for Human-Centered AI



- How do we keep the human in the loop when AI makes decisions?
- Solutions:
 - Use AI-systems as co-pilots rather than as trusted decision-makers
 - Build solutions that focus on explainability and transparency to build trust



Success Factors for Tackling Grand Challenges

- **Transparent design** considerations of the technology
- Solutions should be **open-source** and re-usable
- **Collaboration** between governments, organizations, domain-experts, data scientists, etc.

Let us work to together, to tackle this interdisciplinary challenge!