Prosperity in a finite world

Reconciling human development and climate change

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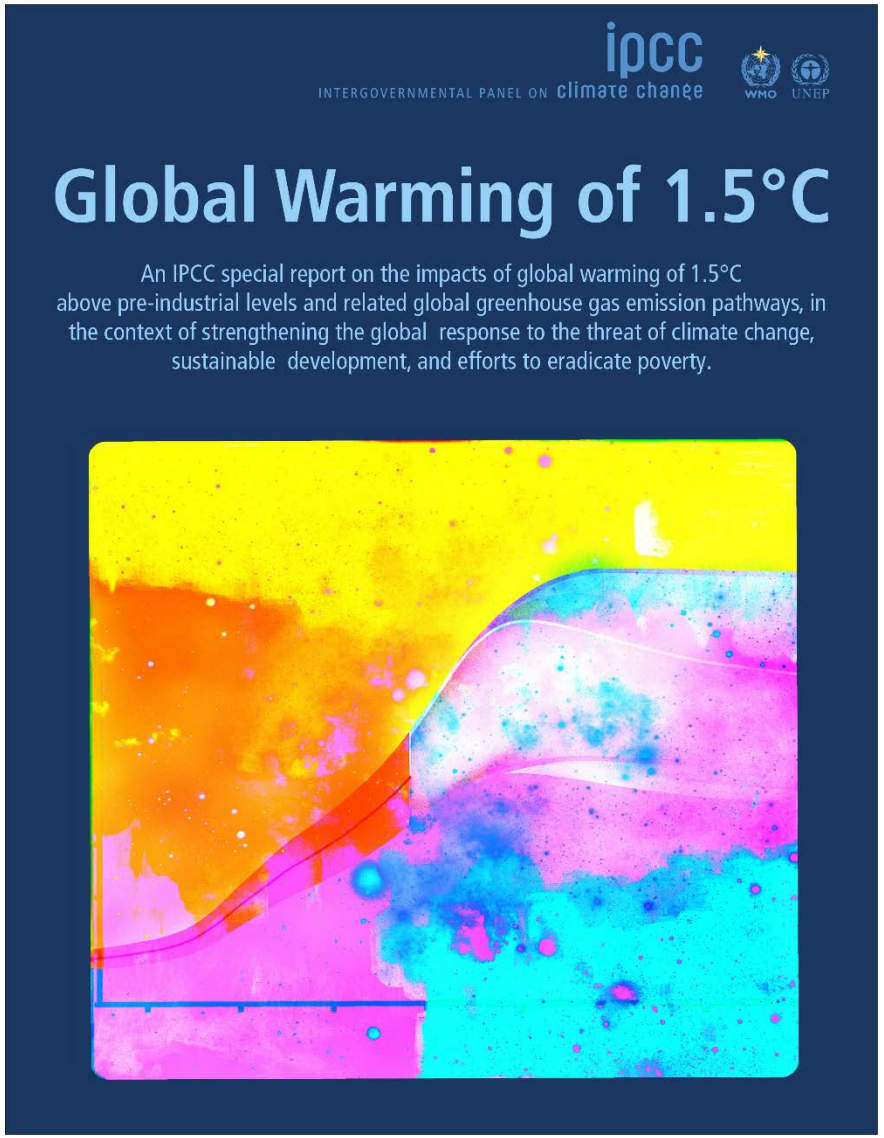
Global warming as a threat to developing countries

How do we foster ***social, sustainable*** **and** ***economic development*** taking into account the limited ***resources*** available on our ***planet*** ?

I. **Sustainable development: are we on the right track?**

II. **Supporting transition towards a low-carbon and climate-resilient development**

IPCC report



- Every fraction of a degree counts.
- We are already **close to +1.1°C** and, if nothing is done (as today), we **shall reach +1.5°C between 2030 and 2052**.
- Emissions must peak worldwide in 2020 if we want to have any little chance to remain close to +1.5°C.
- We can still avoid the worst impacts of climate change.

Loss of biodiversity

- Towards a sixth mass species extinction?
- Worsening worldwide land degradation now “critical”
- In Africa: **by 2100, climate change could also result in the loss of more than half of African bird and mammal species, a 20-30% decline in the productivity of Africa’s lakes and significant loss of African plant species.**

Scarcity of minerals

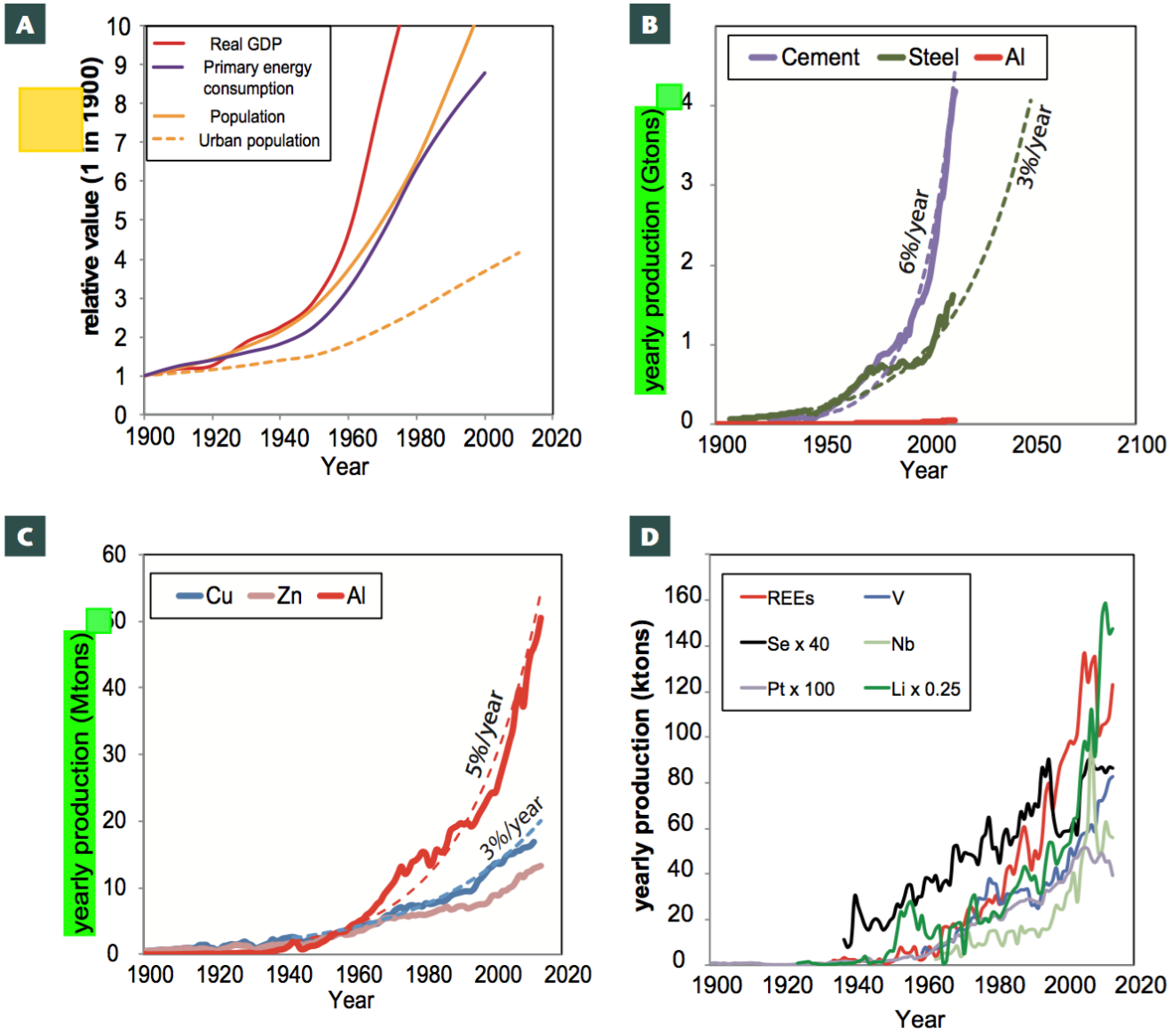


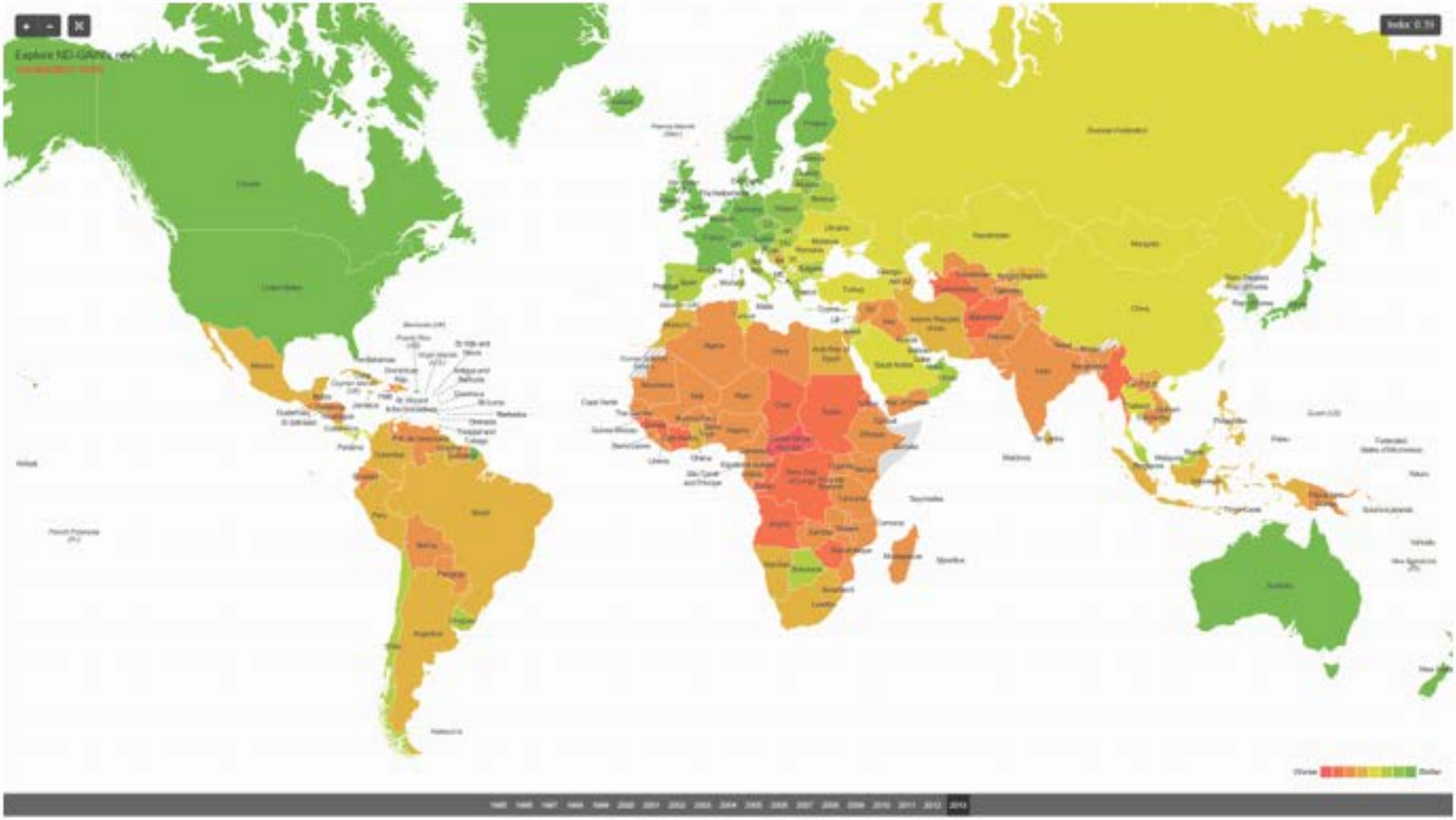
FIGURE 1 (**A**) Historical evolution of various indicators of prosperity and human activity. FROM STEFFEN ET AL. (2014). (**B**) Yearly production, between 1900 and 2015 of cement, steel and Al. (**C**) Yearly production, between 1900 and 2015 of Cu, Zn and Al. (**D**) Yearly production of rare-earth elements, Se, Nb, Pt and Li. The dashed lines in (B–C) show the production calculated for the indicated growth rates. 1B, 1C AND 1D FROM USGS (2017b).

Giraud et al. (2017)

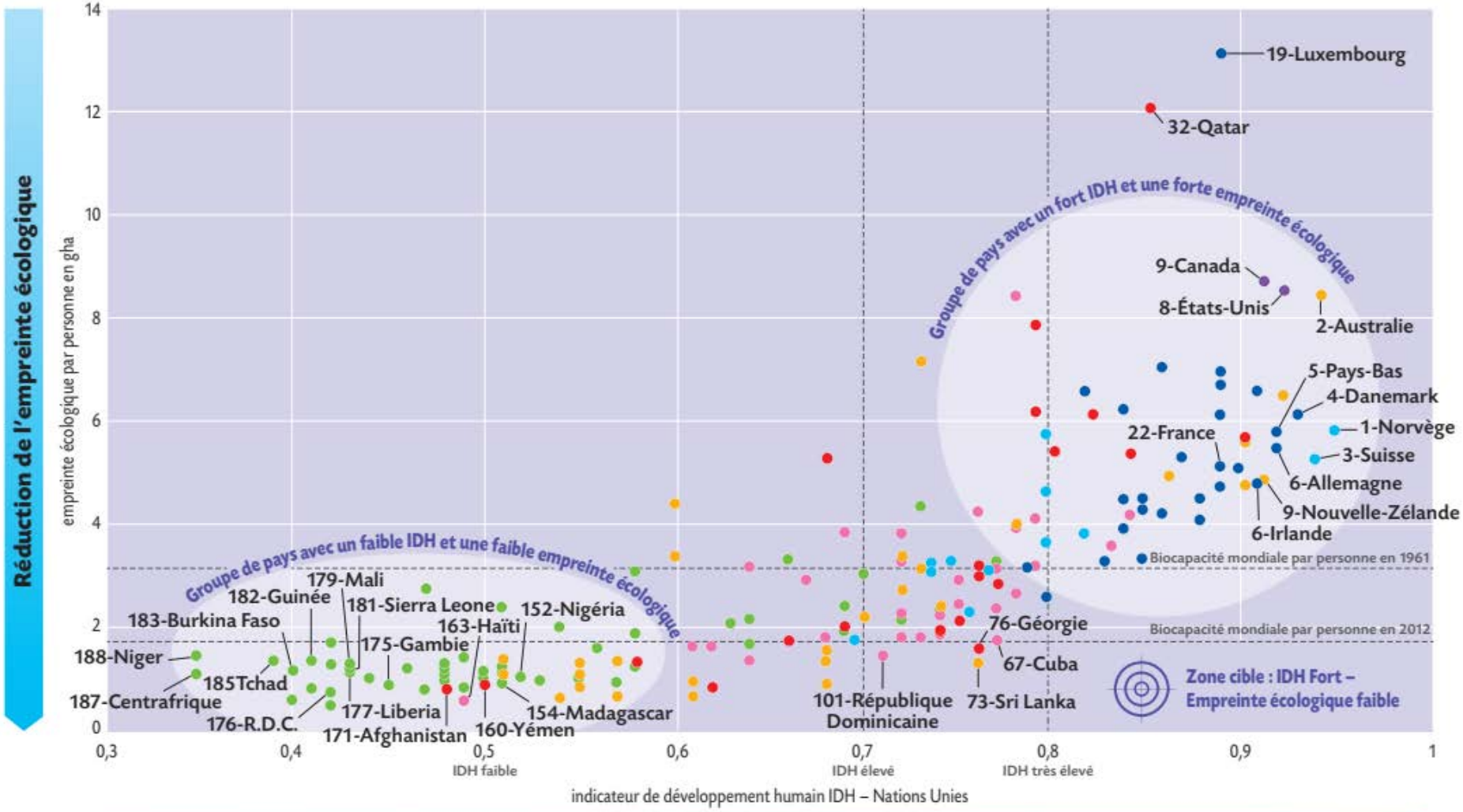
Climate Change Vulnerability Index

Source : Maplecroft 2014

Adaptation capability



Source : GAIN Index / readiness map



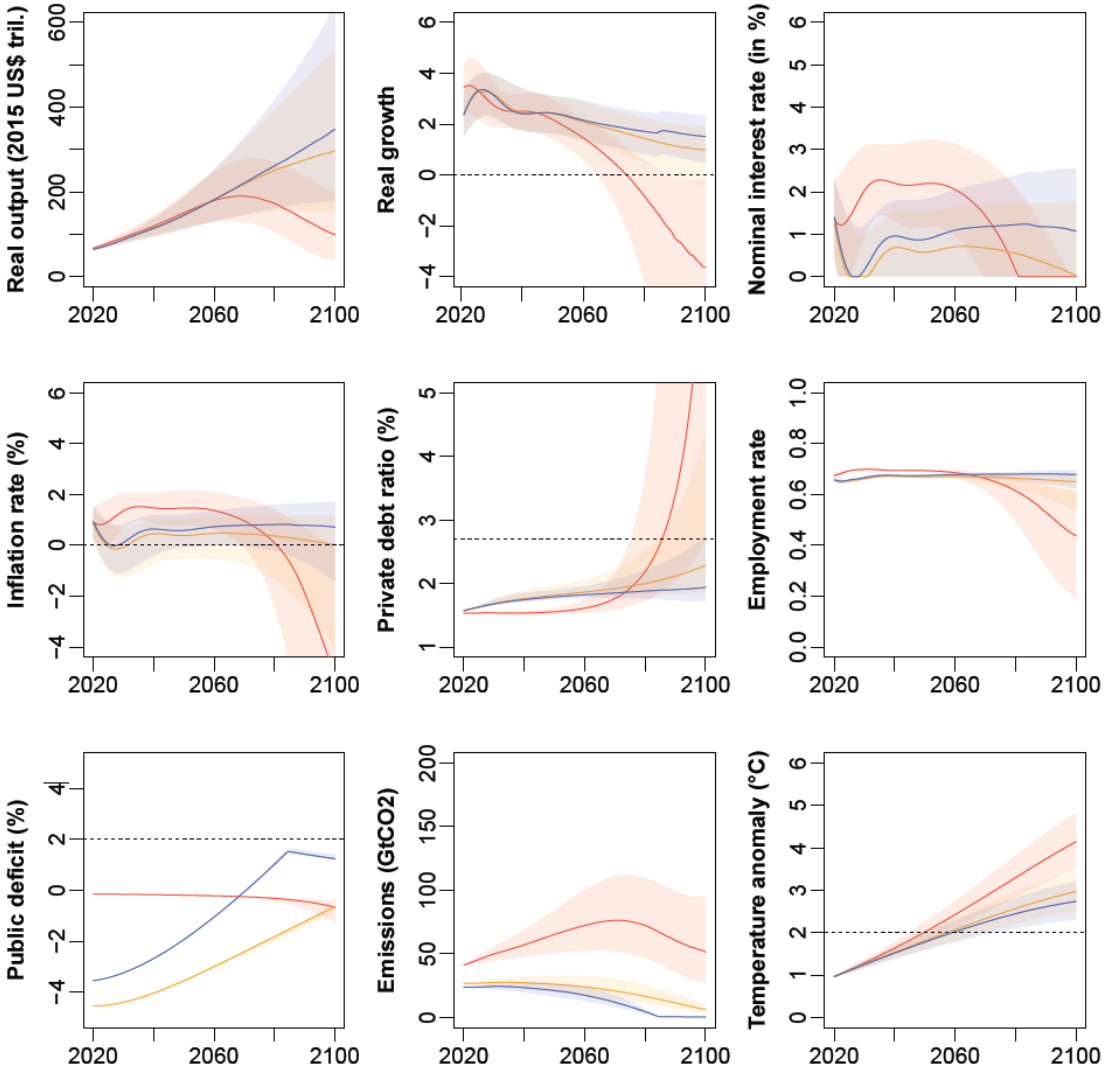
Source : Wackernagel M., Hanscom L., Lin D. Making Development Goal consistent with sustainability. Frontiers in Energy Research. 2017, Jul 11 ; 5 :18

I. Sustainable development: are we on the right track?

II. Supporting transition towards a low-carbon and climate-resilient development

Defining development pathways

GEMMES World



Scénario 1 (red) :
Without public intervention

Scénario 2 (orange) :
Implementation of a carbon tax (high end of the recommendation of the Stern-Stiglitz report)

Scénario 3 (blue) :
Scenario 2 carbon tax with a public sector subsidy for decarbonisation

Managing trade-offs for transformative changes

- **Social acceptability and inequality**
  - social impact of transitions, green jobs, redistributive effects of carbon revenues, green fiscal reforms
- **Macroeconomic policy and financial sustainability**
  - assessing physical and transition risks (e.g. stranded assets)
- **Resilience and adaptation**
- **Energy shifts**
  - impacts in terms of governance (decentralised/centralised)
  - Interaction with other economic sectors
- **Spatial planning and mobility**

AFD's ambition: 100% Paris agreement & 100% social cohesion

- **Building a shared vision at country-level** for possible and desirable development pathways

  - **Assessment**:
    sectoral diagnostics,
    simulation,
    macroeconomic modeling,
    evaluation, etc.
    → **developing research capacity on public policy**

  - **Help inform** decision makers on the efficacy, ambition and feasibility of policies

  - Facilitate **policy dialogue** and foster a public debate

Building knowledge around pathways

Innovation
- Finding and sharing solutions(e.g. between South and North)

Knowledge
- Research, evaluation and knowledge sharing

Modeling
- Long term modeling exercises to help define transition pathways

Development projects (1/4)

Accompanying the energy transition in Kenya

- **Geothermal energy** in Olkaria, south of Lake Naivasha, Great Rift Valley
- Financing infrastructures for production
- Competitive, secure and low-carbon energy

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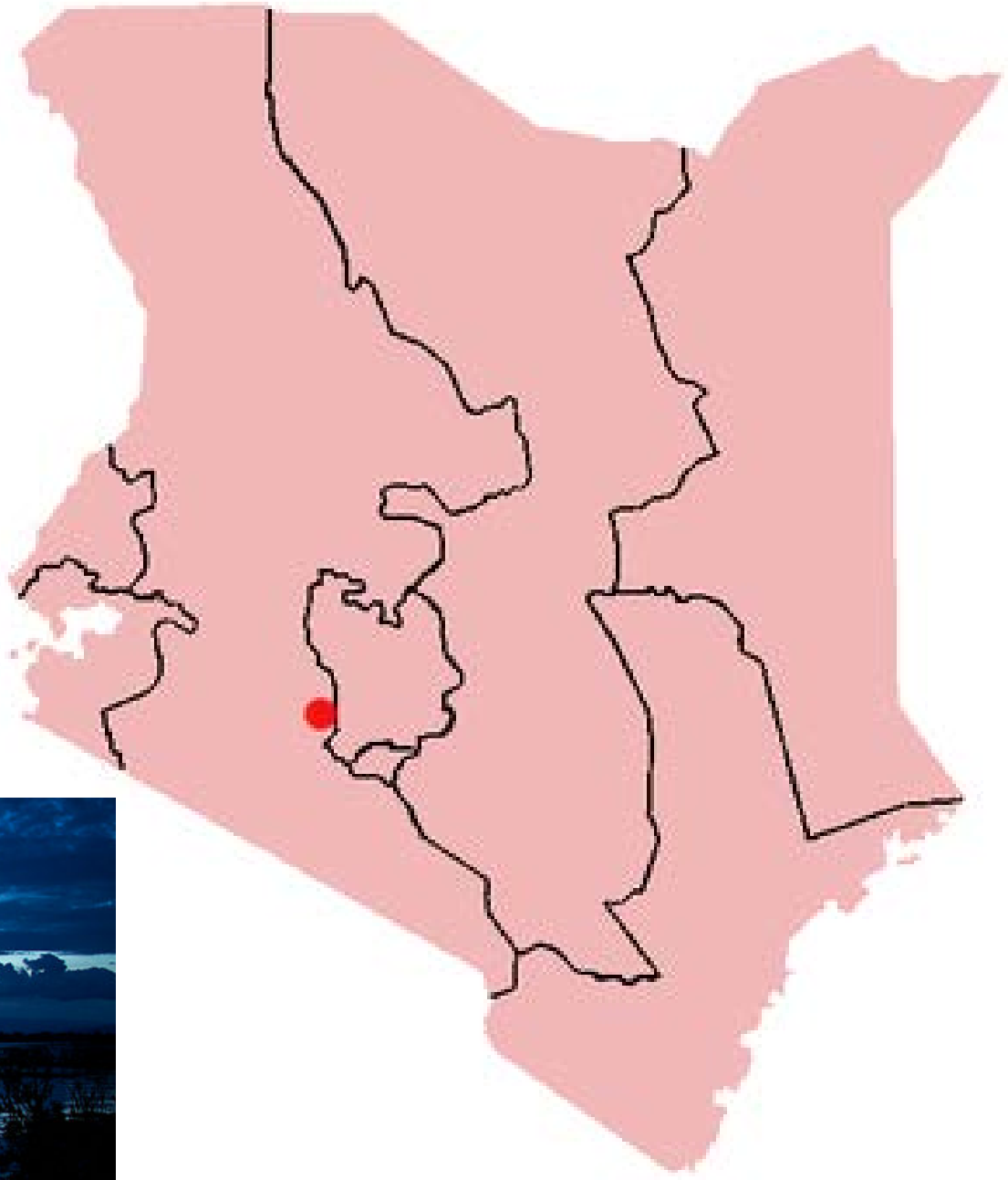
Lake Naivasha



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Development projects (2/4)

Preserving nature in the city in Brazil

- **Creation of an ecological corridor** along the Barigui River in Curitiba, South-West of Brazil
- In support of Curitiba's urban development plan
- **Preserve urban biodiversity**

Curitiba (Paraná)

Development projects (3/4)

Improve water management to cope with climate change in Cambodia

- **Rehabilitation of irrigation infrastructure**
- Crop diversification and vegetable gardening in the dry months.
- In some parts, allowed for the water-intensive practice of multiple rice plantations in a year.

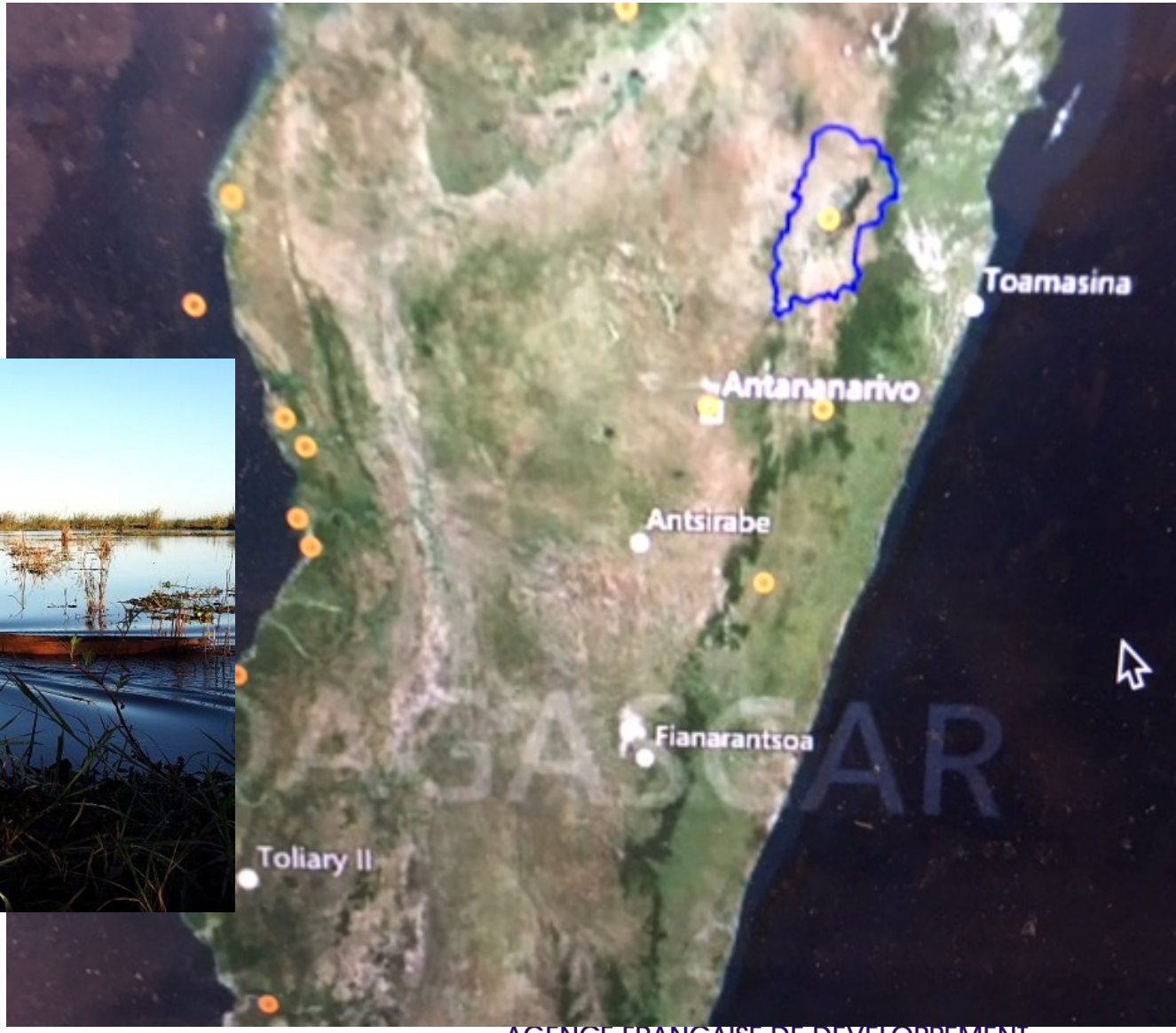
Prey Nup mangrove (Kompong Smatj river)

Development projects (4/4)

Promoting agroecology in Madagascar

- **Agroecological diversification and intensification** of production systems
- Around Lake Alaotra, in the Southeast, the island's most important rice-growing region
- Increasing yields without using fertilizers and other pesticides

Lake Alaotra (Taomasina province)



Promoting commons

A Common is a natural or cultural **resource** shared by a **group**, with specific **rules** of distribution, preservation and promotion.

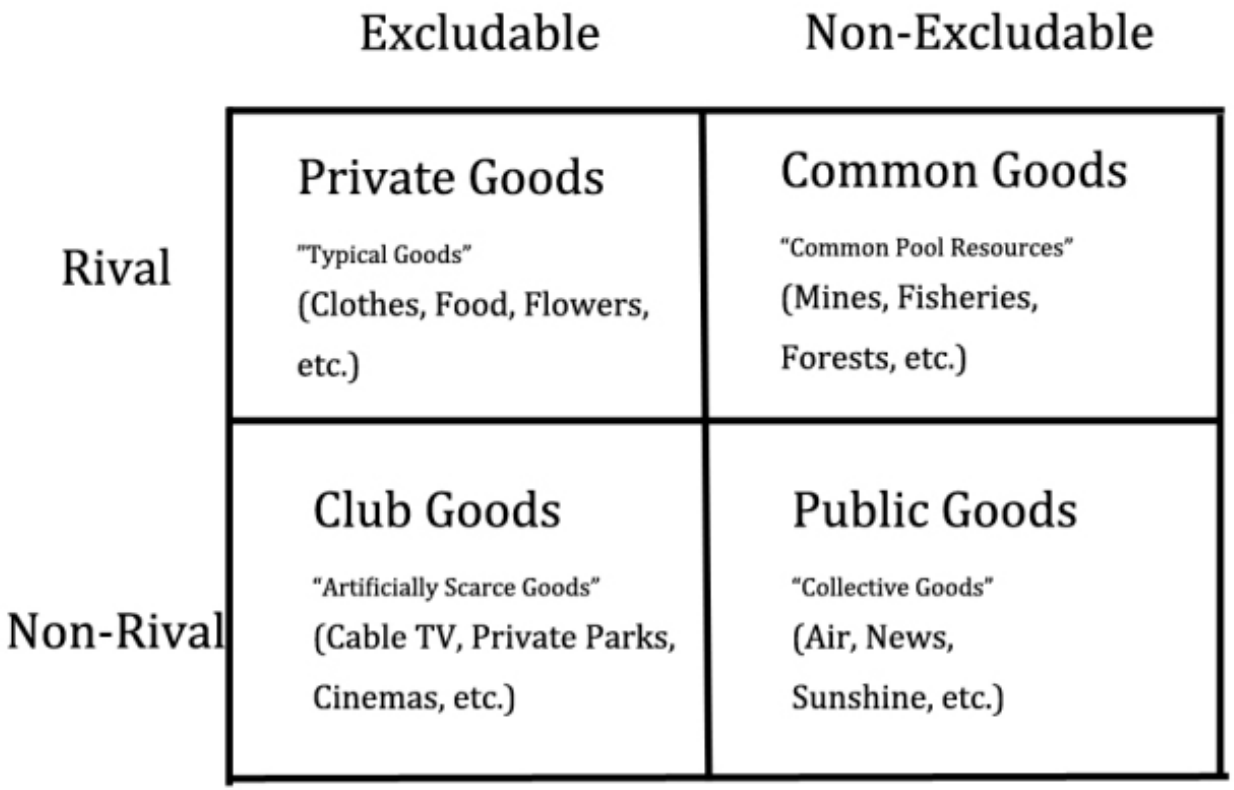
@Bénédicte Desrus

Elinor Ostrom

Nobel Prize Winner 2009

« Governing the Commons: the Evolution of Institutions for Collective Action

Between private and public



Rethinking property : bundle of rights

Examples (1/5)

Community Nature Reserve in Kenya

- Management plans and charters by **local committees**
- Dialogue to **regulate access** to pastures
- Conflict reduction and **biodiversity** preservation

Examples (2/5)

Water management in Kinshasa

- Community management system: **autonomous associations of users** of drinking water resources
- In peri-urban « **neglected** area »
- **Facilitation** of a local NGO

Examples (3/5)

Kandadji Dam in Niger

- **Multipurpose** dam:

hydropower plant, agriculture

- Land issue:
  - ✦ management of irrigated perimeters
  - ✦ allocation of agricultural land

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O To prevent conflicts of use, should we manage infrastructures (dams, schools, hospitals) as Commons?

Kandadji dam on the Niger river

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Examples (4/5)

Fablabs

fablab in Ivory Coast : Babylab
©Guiako Obin

- Dissemination, development and preservation of **knowledge**
- Specificity of African fablabs: development of Commons for **educational purposes**

Examples (5/5)

DNDI
Drugs for Neglected Diseases Initiative

- **Health** & Intellectual **Property** Rights
- Private and public collaboration
- **chronic crisis of R&D** for essential medicines in developing and emerging countries

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