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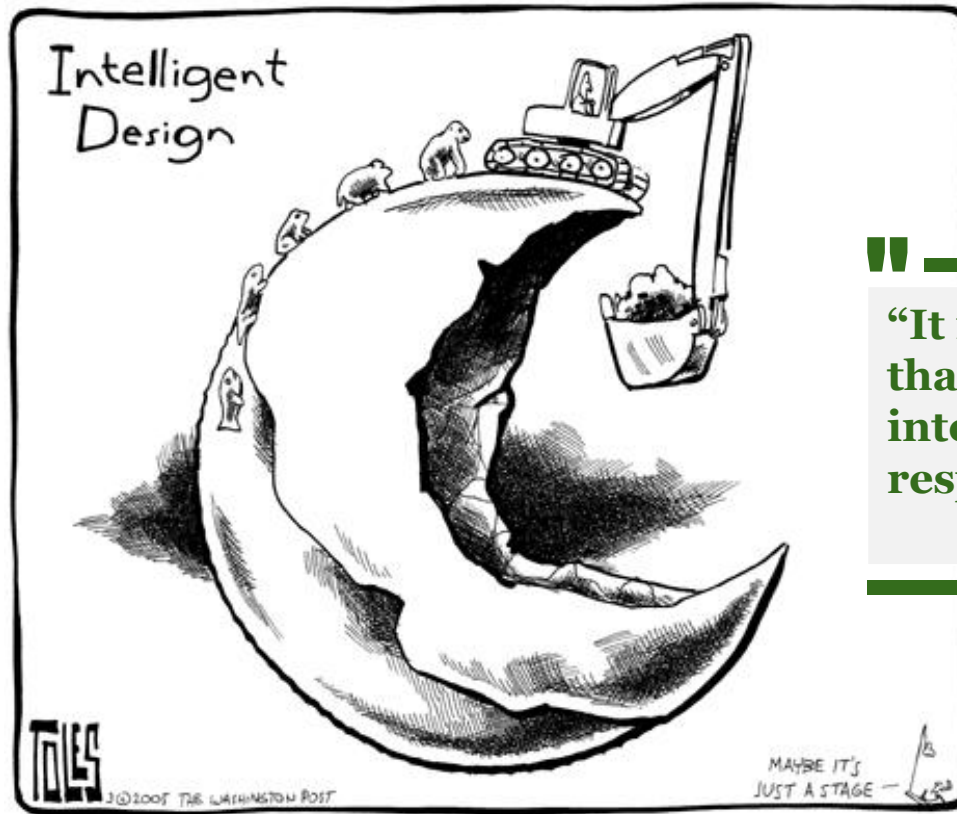
Nature Resilience

Scaling up ecological restoration by partners in business for future generations.



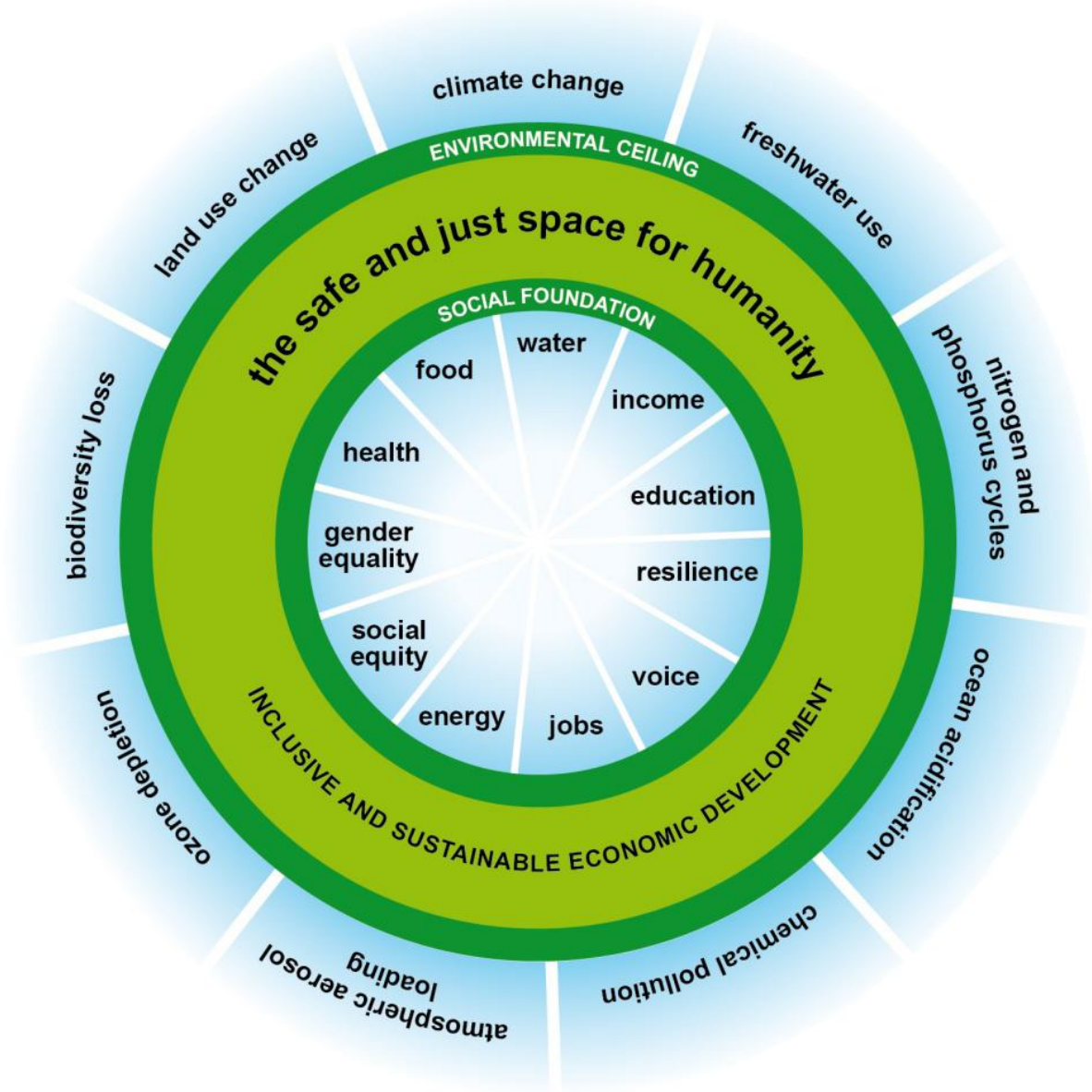
Willem Ferwerda
Presentation, 7 February 2013

We are destroying our economic model



**“It is not the strongest species
that survive, nor the most
intelligent, but the one most
responsive to change”**
Charles Darwin

Planetary Boundaries and Social Foundation



Recap: 60 % of our ecosystems services are degraded

Forests: last 300 years < 40% disappeared

Topsoil: 13-25 million hectares is annually depleted

Food Crops: genetic material 75% is gone

Coral: 1/3 coral reefs is dying; aquaculture instead of mangroves

Fish: 75% of population is over harvested

Species: < 65,500 threatened of which 20,219 with extinction

Ecosystems: < 2 billion hectares degraded

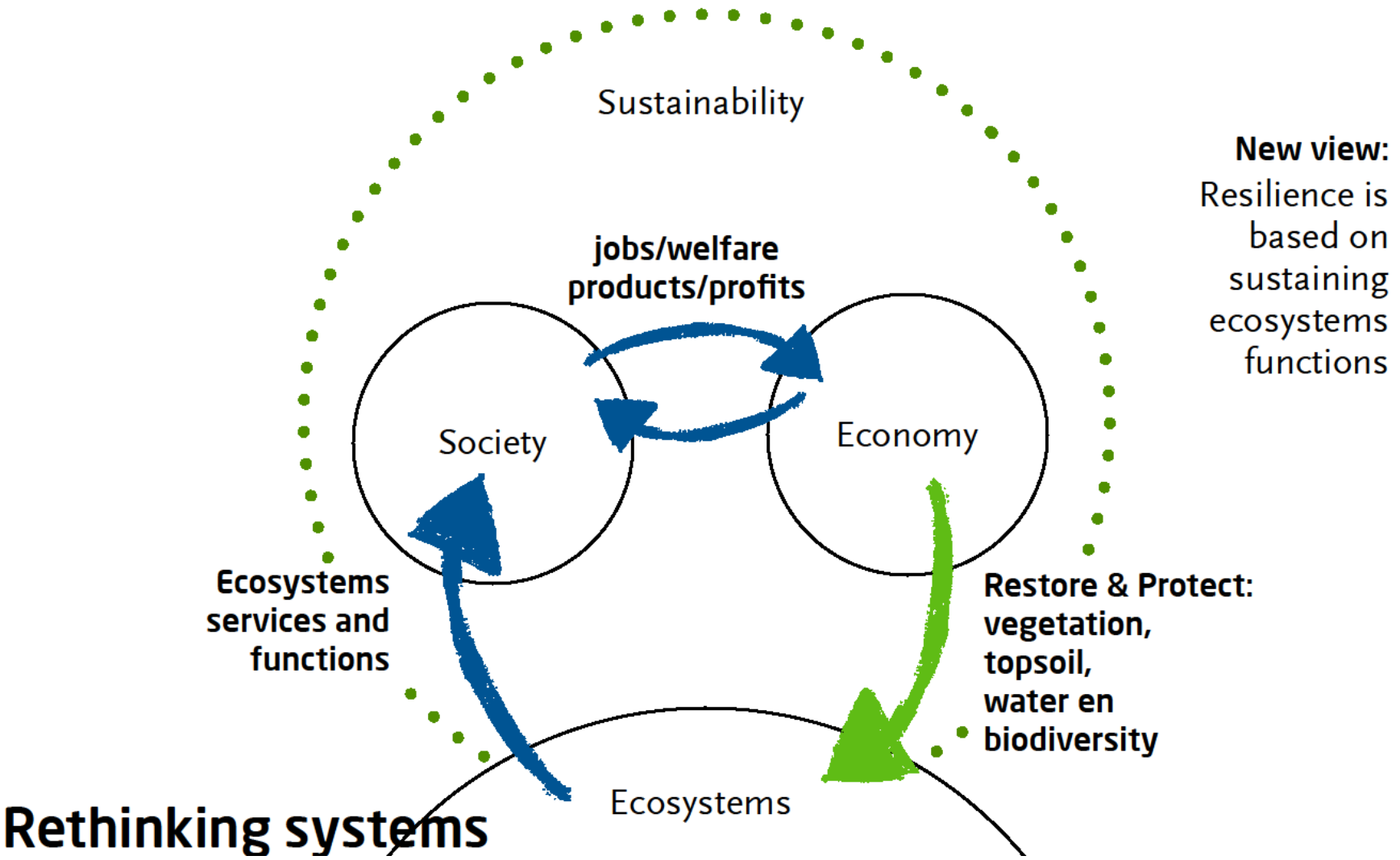
The economic impact

60% of Ecosystem Services degraded
cost us US\$21–72 trillion annually

Soy and Rainforest in Brazil



A new view on sustainability is needed

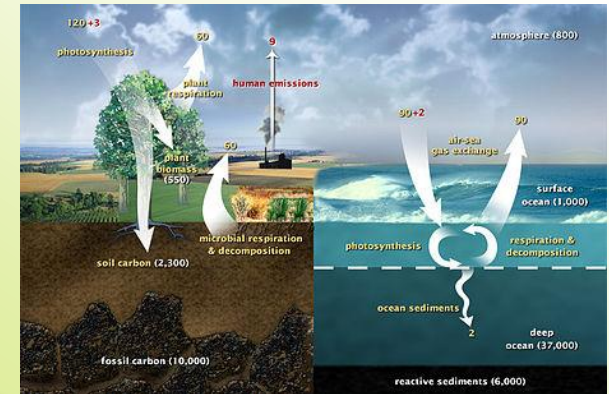


Ecosystems form the foundation to our Society, Economy, and well-being, through 4 types of services

Provisioning services



Regulating services



Ecosystems

Supporting services



Cultural services



Ecosystem functions need to be restored due to severe degradation over the past years

Examples of degradation



Accumulation of muddy loess debris, a product of erosion caused by degradation of the Loess plateau in China



Moon landscape as a result of tree cutting for charcoal and pressure from goats and dromedary in Oman



Severely degraded and poisoned land as result of tar sand winning in Alberta

Restoration of ecosystems has been proven in many parts of the world

Loess Plateau Watershed Rehabilitation, China






Project started in 1995, total budget ~\$500mln for 3.5 million hectares. Equaling investment < US\$143 USD per hectare

Key outcomes

- >2.5 million people lifted out of poverty, rate of poverty reduction from 59 to 27%
- Farmer incomes rose from US\$ 70 per year per person to US\$ 200.
- Sediment flow into the Yellow River reduced by more than 53 million tons
- Increased perennial vegetation cover from 17% to 34%
- Network of small dams stores water for use by towns and also reduces flooding

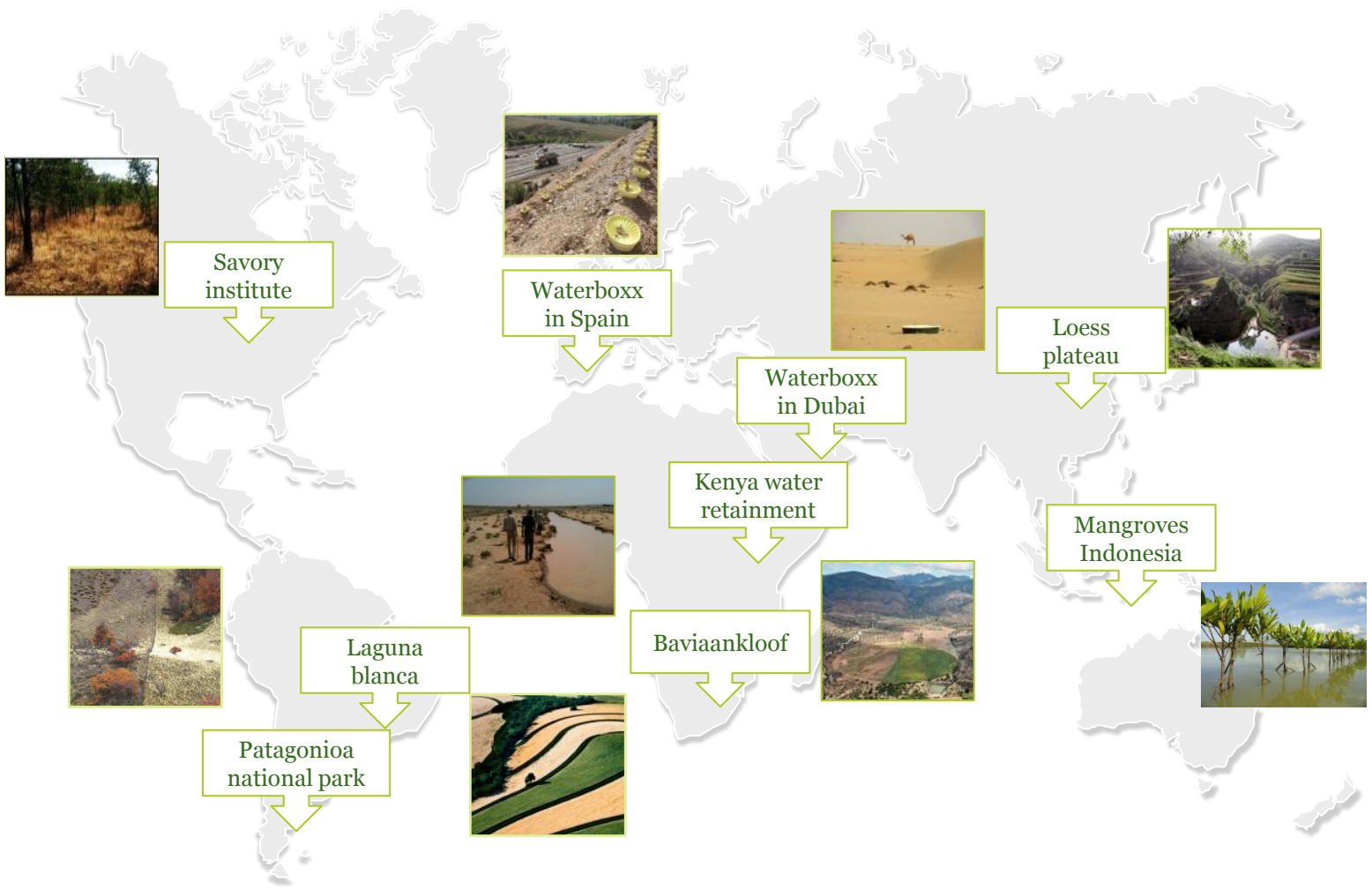
There are proven tools and techniques which allow ecosystem restoration to be replicated

Examples of tools	Description	Impact
Waterboxx	 A low-tech solution that stores water in a 'protected' surrounding. Pen root growth of tree.	Allows trees and vegetables to grow in degraded dry areas without irrigation
Permaculture	 Bringing organic material back into the ecosystem cycle	Nutrient enrichment of the soil; dramatically improving land yield
Microbiome species	 The introduction of certain types of mycorrhizae or fungi in the environment	Enables plants to grow faster and land to be more productive

Among many other tools

Small scale restoration projects are now happening across the globe

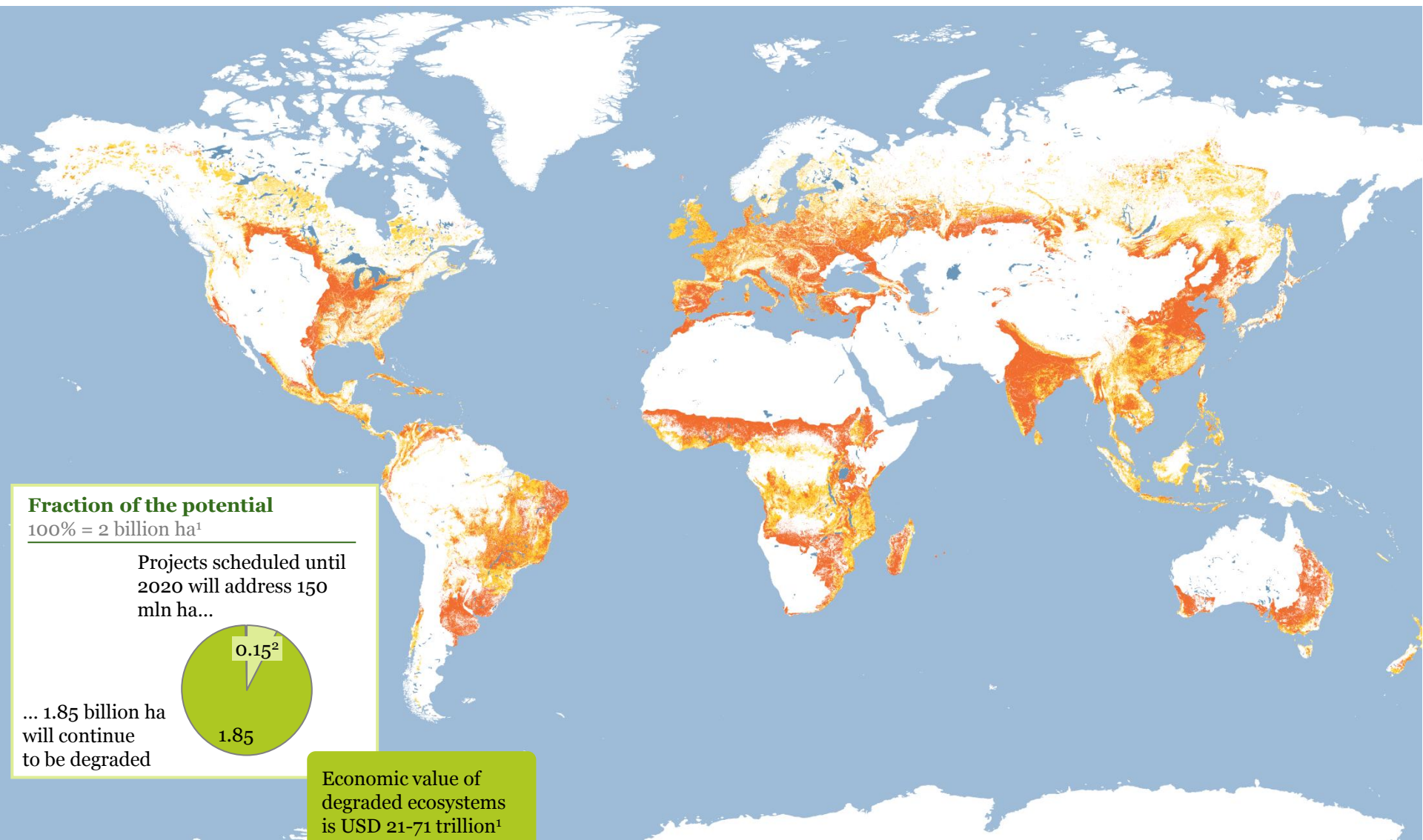
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1 Estimation of G20 study TEEB 2 Based on the Bonn Challenge

... but scaling up is urgently needed, as only a fraction of the potential is currently being addressed

■ Degraded
■ Deforested



There are 5 obstacles we need to collectively overcome

1

Economic value of eco-systems is poorly understood and externalities not accounted for

2

Lack of long term thinking; time frame needs to expand from 2-3 years to 20+ years

3

Silo thinking; many stakeholders working in isolation; well intentioned but not additive

4

Local communities continue pattern of behaviors, which are unknowingly detrimental

5

Solution often presented overly complex while simple proven tools and techniques exist



These obstacles cannot be overcome without involving companies

1

Companies use and impact ecosystems

- Source of raw materials and food
- Source of energy
- Source of water



Mining



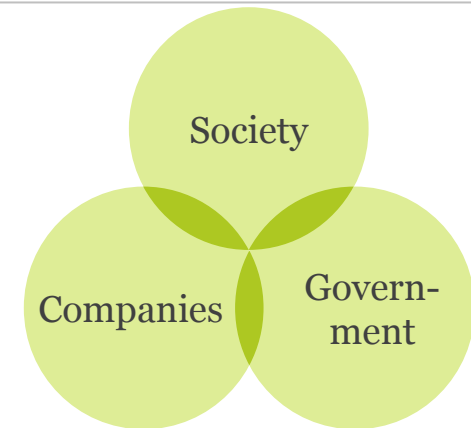
Agriculture



Energy

2

Companies are an essential and valued part of the societal stakeholders and are, therefore, essential to create long-term commitment and trust



3

Companies have capabilities that other stakeholders do not have

- The ability to steer efficient and balanced decision making
- Funds to invest
- R&D capabilities to develop innovative product lines



Funds



Research



Decision making

Some companies have some experience, and are ready to scale up – Example RWE

RWE has already experience in long lasting investments and **restoration of lignite mining**...

...Needs to **compensate carbon** emissions...

... And is looking for **R&D experience** in CO₂ absorption, soil, biofuels and new innovative partnerships, good personnel, and long lasting relations with stakeholders

RWE Example of restoration of lignite mining fields

Top-soils are dug and stored separately



Bringing top soils of old forestry stands to the young rehabilitation sites



Young forest rehabilitation



Dugged stamps of old trees as new livingroom for species



However companies are not yet leading the change required, as...

1



Either lack of knowledge, fear of implications or lack of capabilities withhold companies to do something about it

2



A lack of real, long-term trust between the relevant stakeholders, to safeguard company investments

3



A lack of proper tools to value, implement, monitor, build upon, and take maximal benefit of ecosystem restoration

4



A lack of scale in projects, resulting in companies not reaching the desired material impact levels

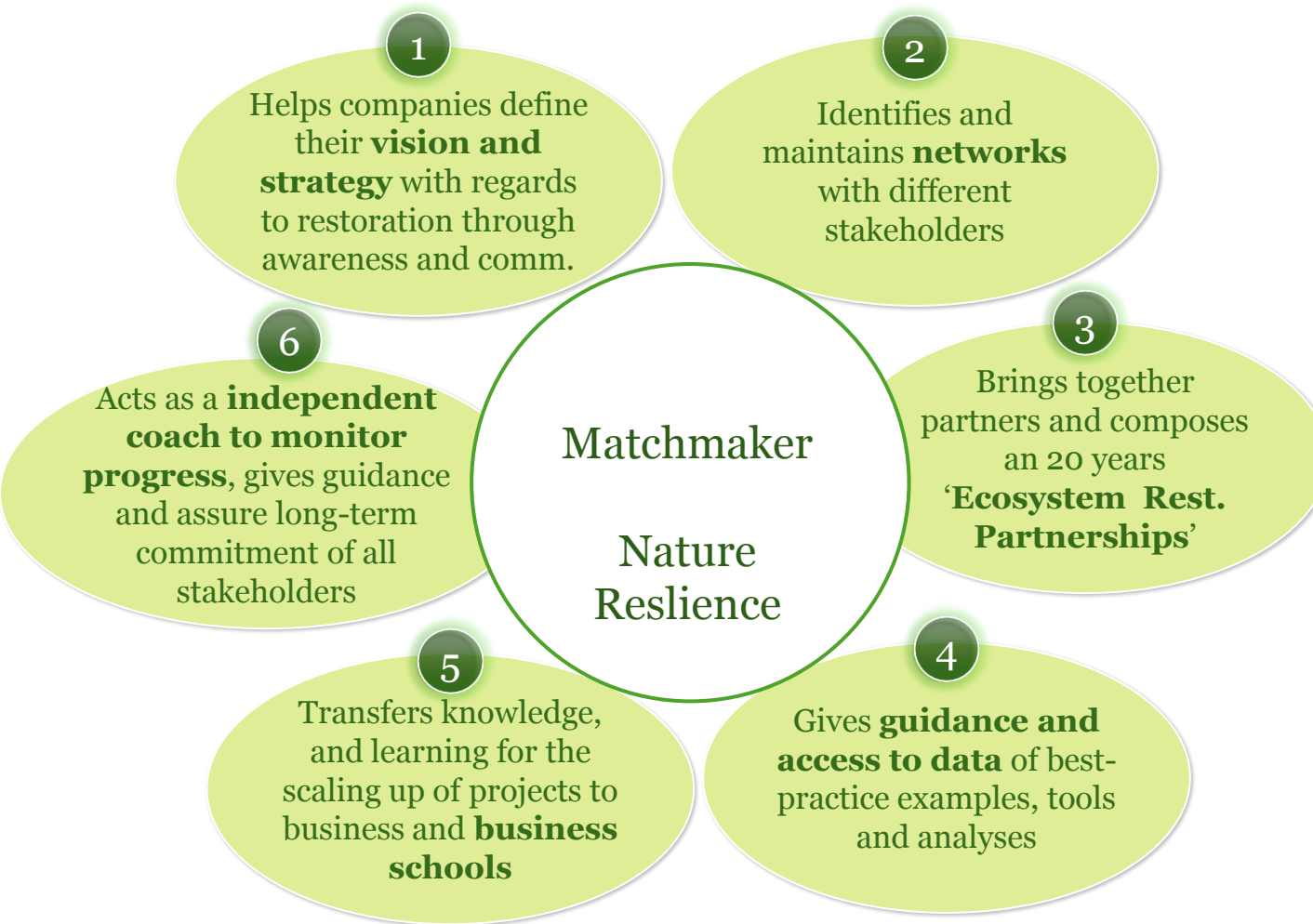
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A lack of proper networks, that connect **all** relevant stakeholders

Creating 'Ecosystem Restoration Partnerships' for business

Return on Investment & Return of Involvement







Nature Resilience does not

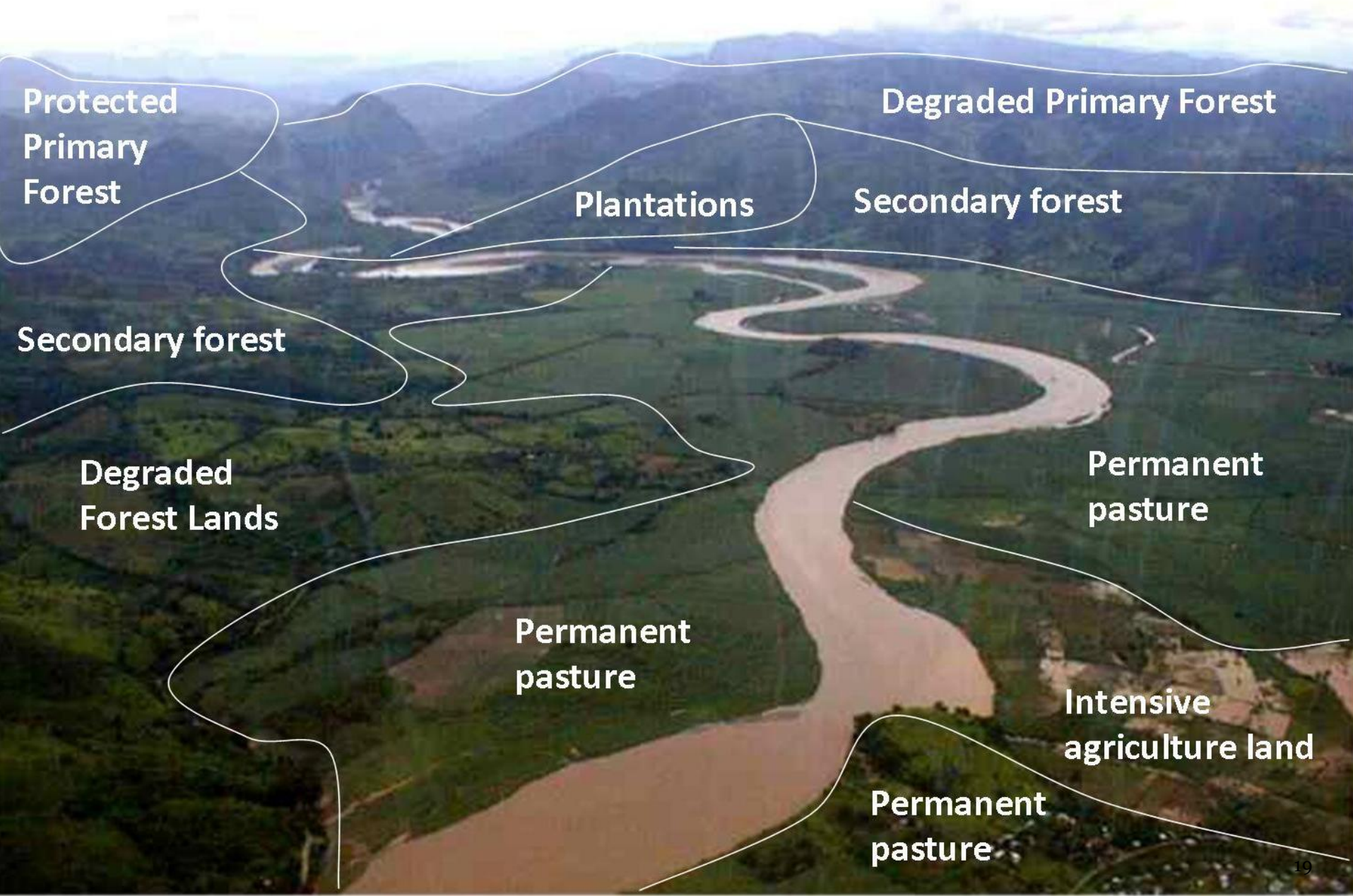
- Take ownership of the project
- Take ownership of land
- Finance the projects
- Take benefit of the project – the financial basis for operations is not related to project partners

Powered by: IUCN CEM, UNCCD, Wetlands International

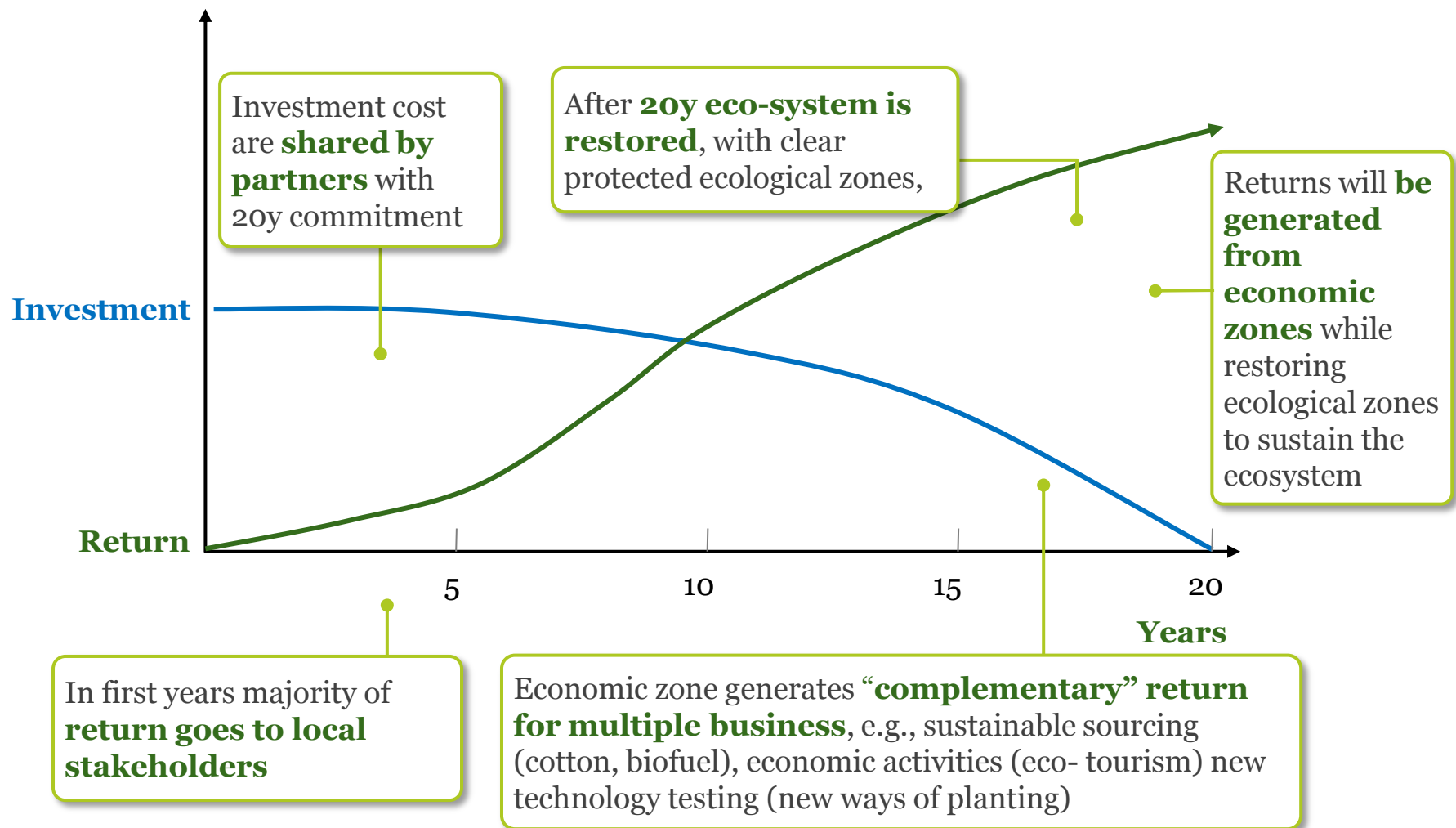
The approach centers around predefining a set of “ecosystem opportunity archetypes” for companies

Archetypes		Rationale	Examples
Tapping resources		Give access to local resources and networks in return for restoration	<ul style="list-style-type: none">● US Catskill mountains forest and wetland conservation, water city of New York● Restoring and making profit with tea plantations (Sri Lanka Dilmah tea)
Obligation to act		Restoration out of moral or legal necessity	<ul style="list-style-type: none">● Superfund clean-up Cape Cod● Restoration of Mining sites (RWE: lignite; Holcim; Rio Tinto)
Testing new technologies		Use restoration to test new technologies and partnership models to reduce learning curves.	<ul style="list-style-type: none">● Waterboxx, New planting technologies, Ecuador, Dubai● New energy technologies (fencing, solar)
Future potentials		Restore and develop sustainable future resources	<ul style="list-style-type: none">● Growing second generation biofuels● Sustainable agricultural products (cotton)

Understanding that 'ecological zones' sustain 'economic zones': different landscapes, need different approaches



Businesses will be asked 20 years commitment in exchange for a sustainable source of return... and a repaired 'ecological motor' will sustain next generations



Thank you!

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CV Willem Ferwerda

Born: 8 July 1959, married, two kids (11, 15)

2012: Executive Fellow Business and Ecosystems

Rotterdam School of Management-Erasmus University (NL) / IUCN CEM (CH)

2000-2012: Director IUCN NL

Ecosystem Grants Programme (1000 projects in 40 countries)

Leaders for Nature.com: Business & Biodiversity network (NL, India)

Platform Biodiversity, Ecosystems Economy at VNO-NCW

Nature NGO platform (36 conservation org. + state)

Agenda setting politicians and business

1995-1999 Coordinator Tropical Rainforest Grants Programme (IUCN NL)

1986-1995 Hd Expeditions

Eco travel agencies SNP Natuurreizen, Baobab Travel

1992: Teacher Biology: 1-6 VWO Multicultural School

Mondriaan Lyceum Slotervaart, Amsterdam

1978-1987 Masters Biology UvA

Tropical ecology, environmental science, didactics, tropical

Agriculture - UvA, VU, Universidad Nacional (Bogotá).

Others: Charles Darwin Foundation (Ecuador), Natuurcollege (NL), World Land Trust (UK), Hortus Botanicus Amsterdam (NL), Prins Bernard Cultuur Fonds (NL)

