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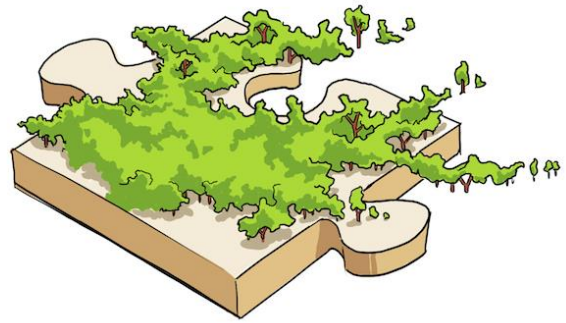
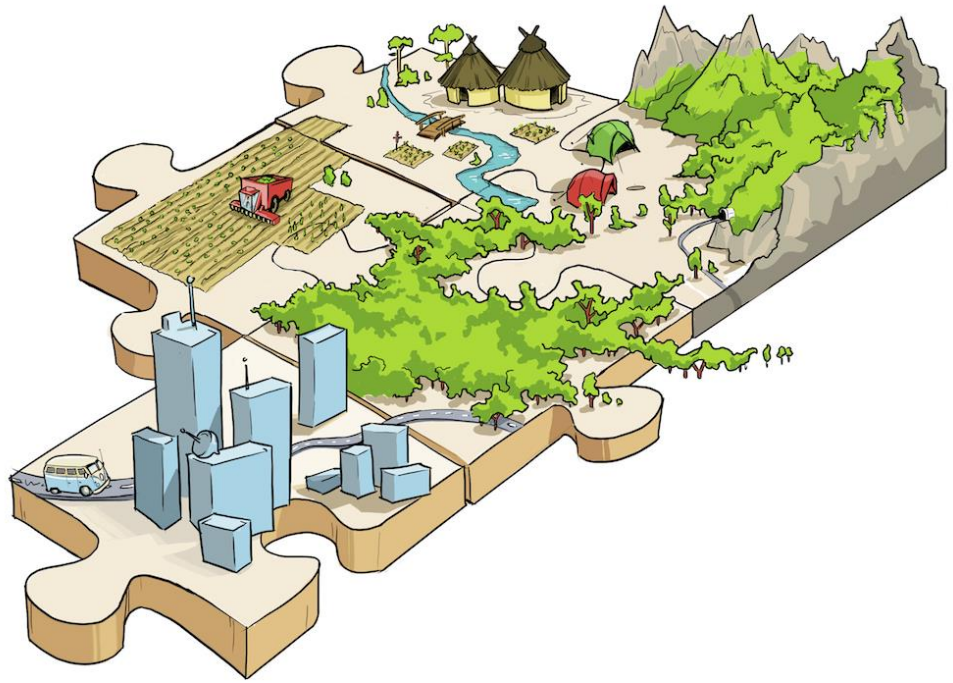
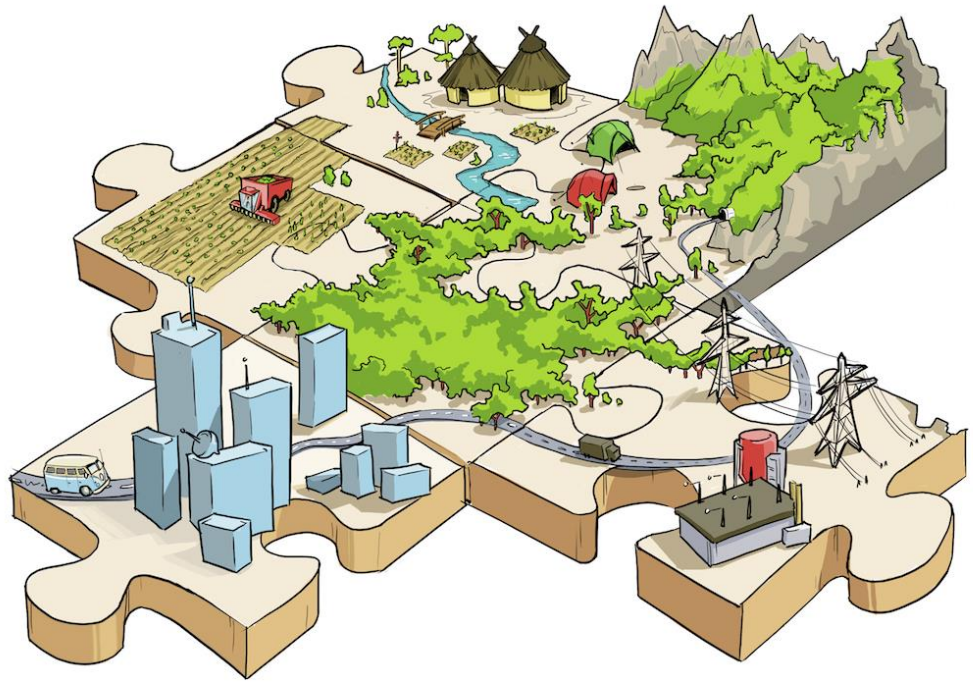
Values in the landscape

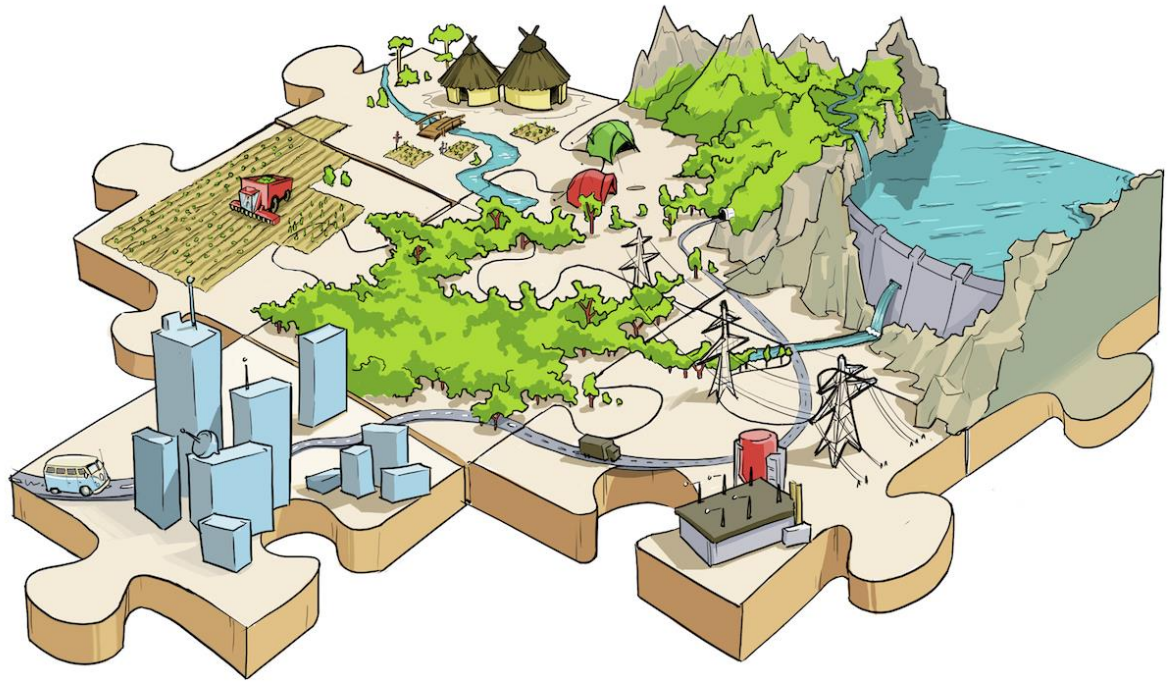
Outline: Value in the landscapes

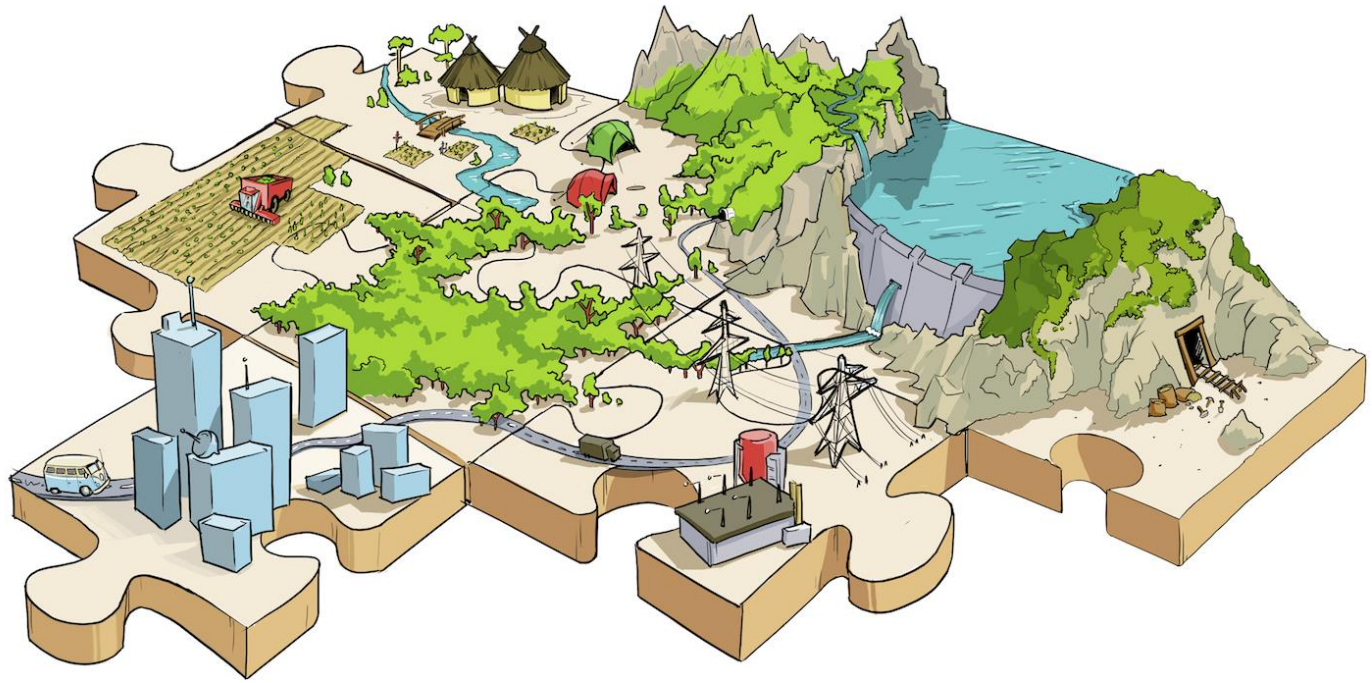
1. What is a landscape?
2. Value of ecosystem services in the landscape
3. Value creation, extraction and destruction in the landscape
4. Global goals for landscapes
5. *Case study:* Restoration cost-benefit analysis for 42 African countries
6. *Case study:* Uganda wildlife tourism sector
7. *Case study:* Agricultural externalities in Malaysia (TEEB)
8. Tools and resources
9. Conclusions

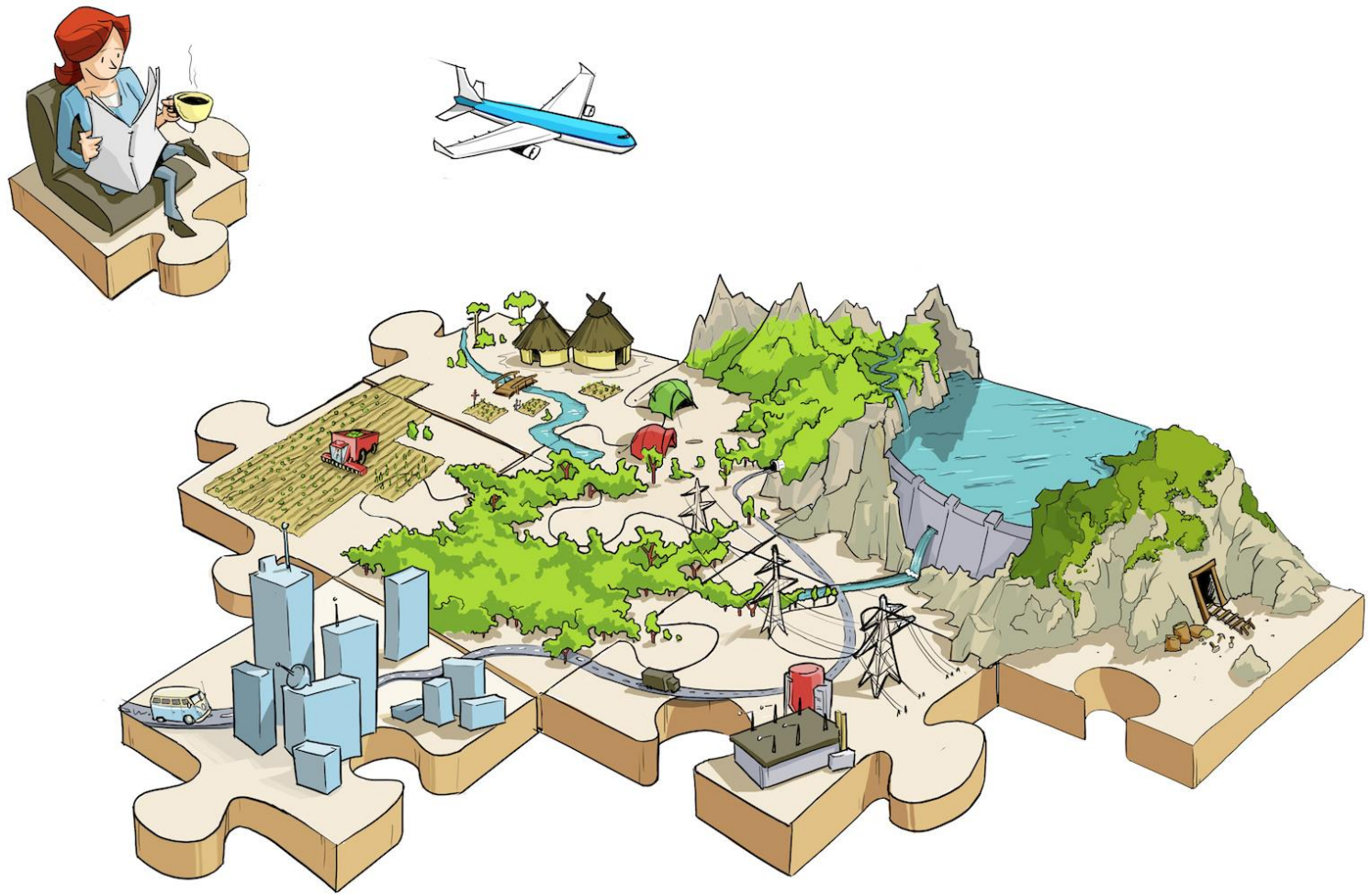


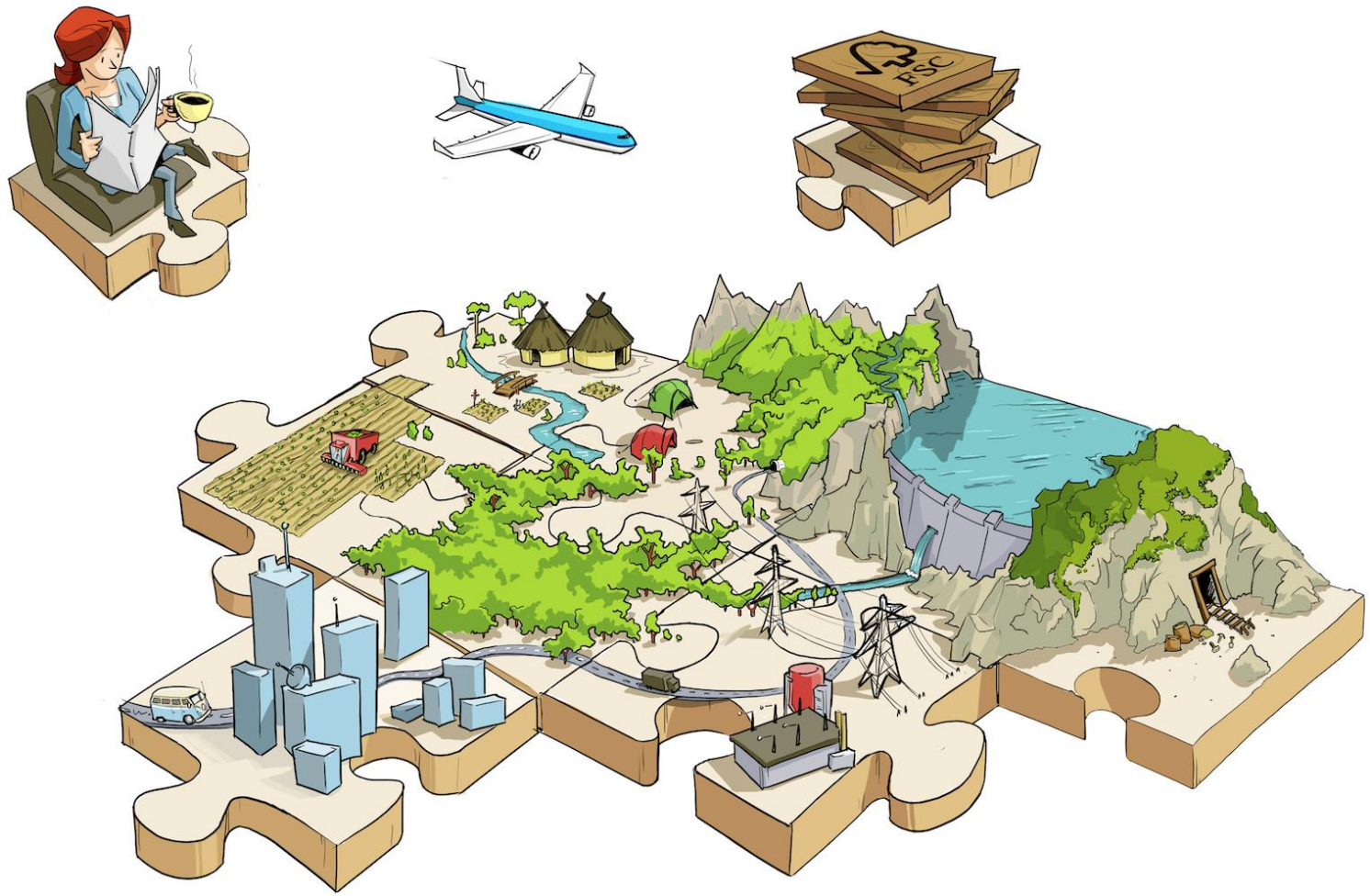


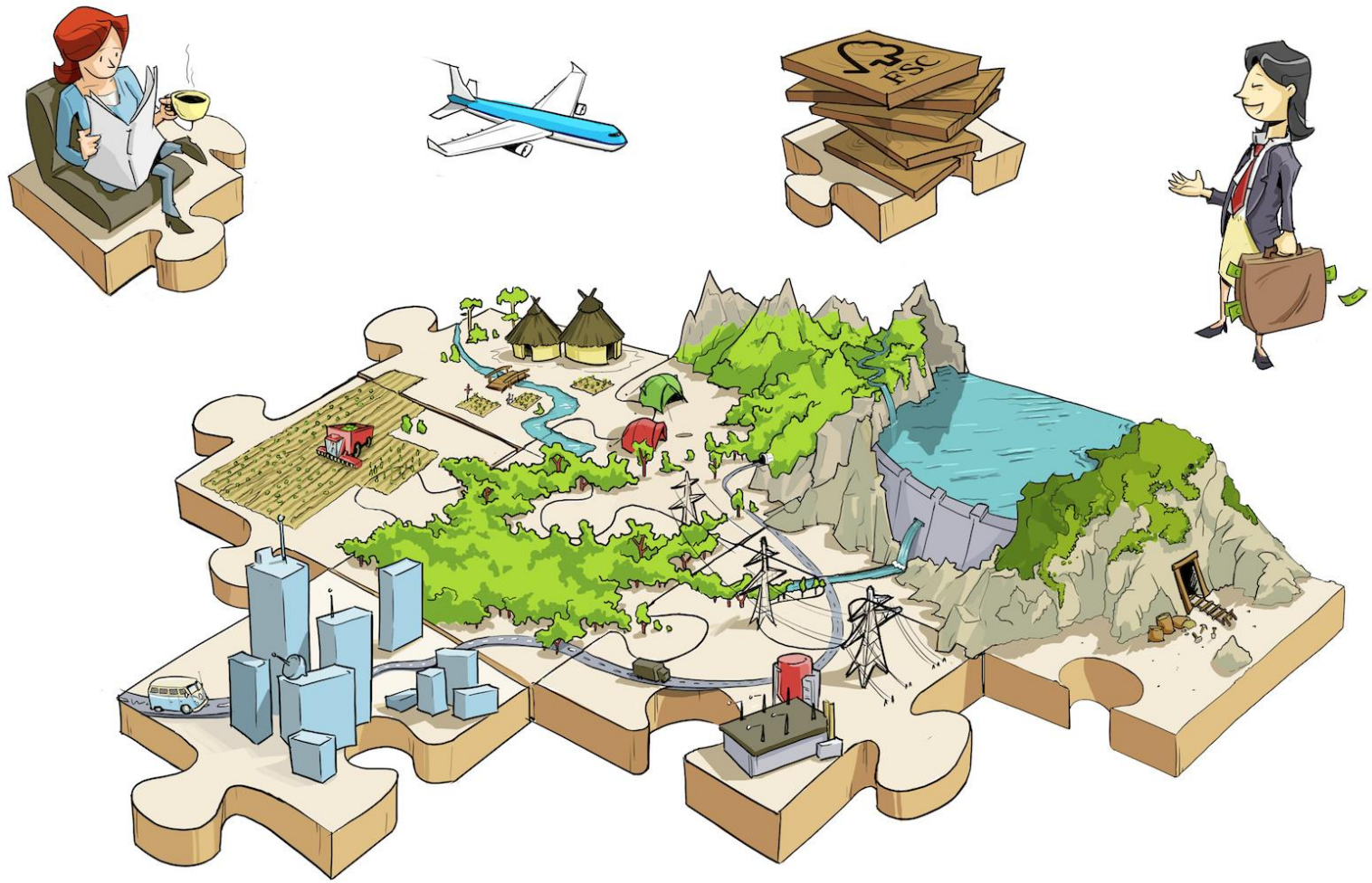






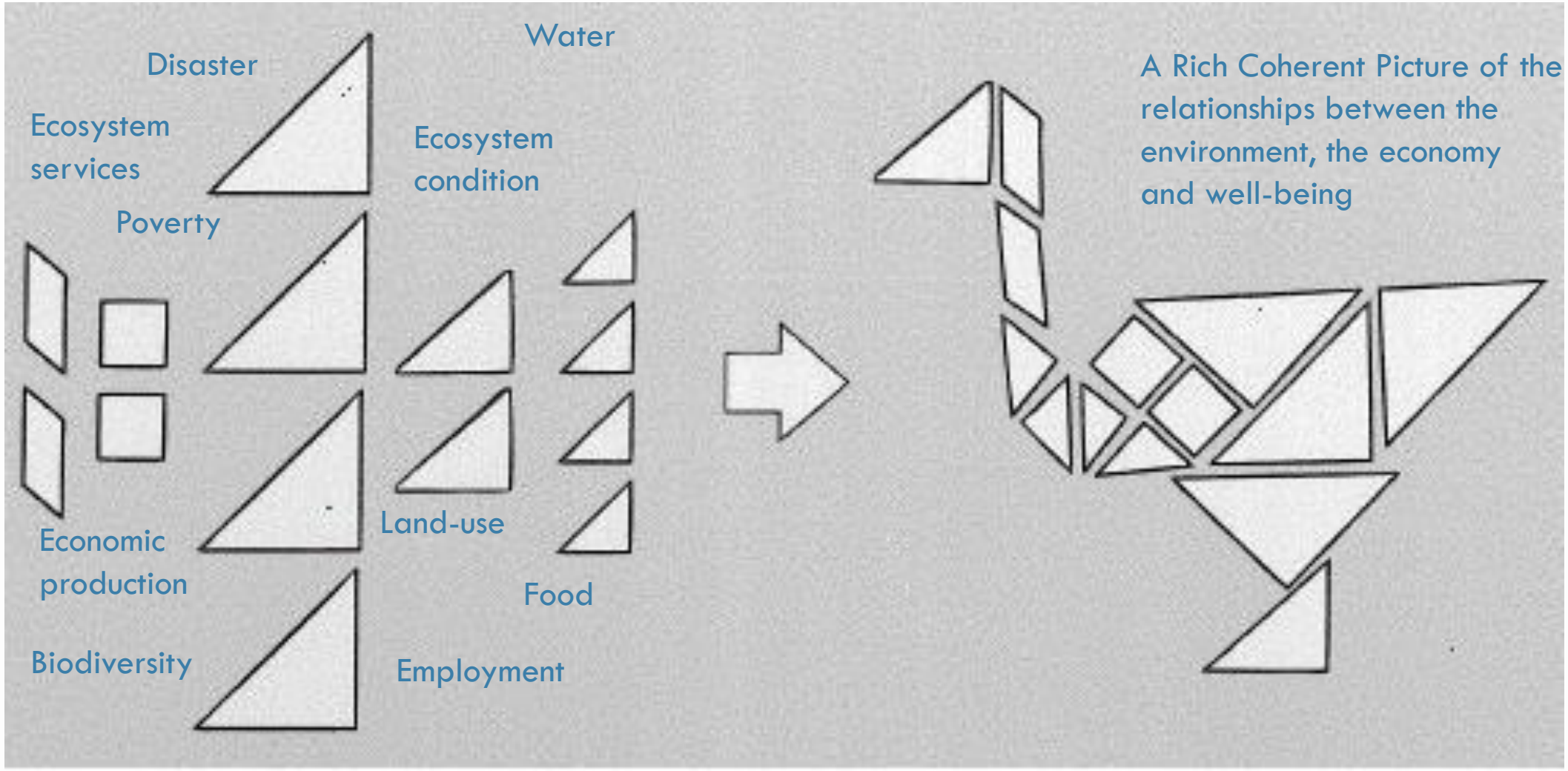






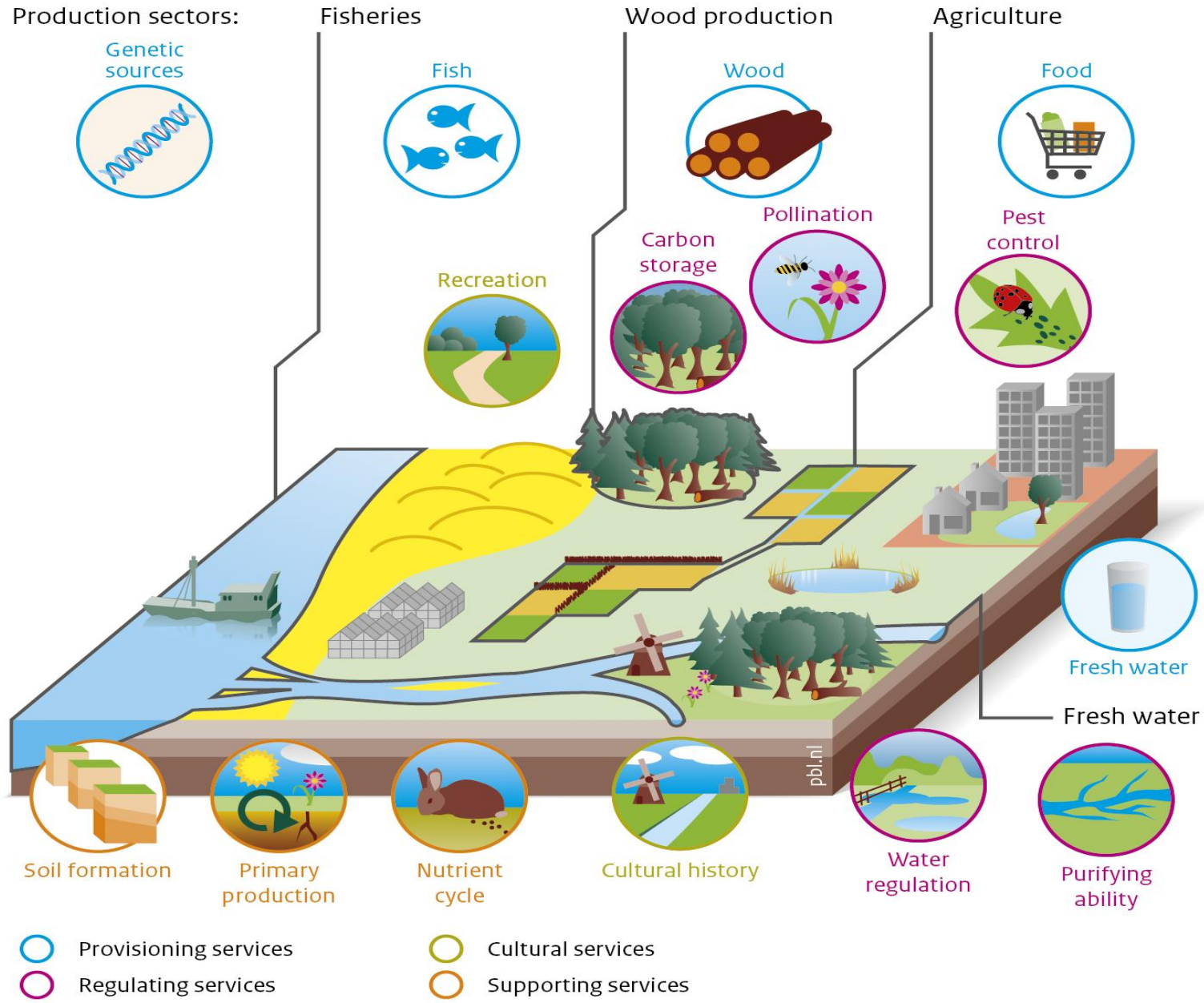
The 10 Principles of a Landscape Approach

SEEA Provides integrated information



2 Value from the landscape: Ecosystem services

Examples of ecosystem services for production sectors



Source: PBL

Solution: business *unusual* balancing economic, social and environmental SDG targets

- **Emissions**: 24% AFOLU / Paris
- **Conservation**: CBD Aichi targets ⇩
- **Restoration**: 350m ha by 2030 (Bonn Challenge), UN Decade

- **Population**: 9 billion (2050)
- **Food production**: ⇧ 60% (2050)
- **Food insecurity** (800+m hungry)

Business as usual won't work!

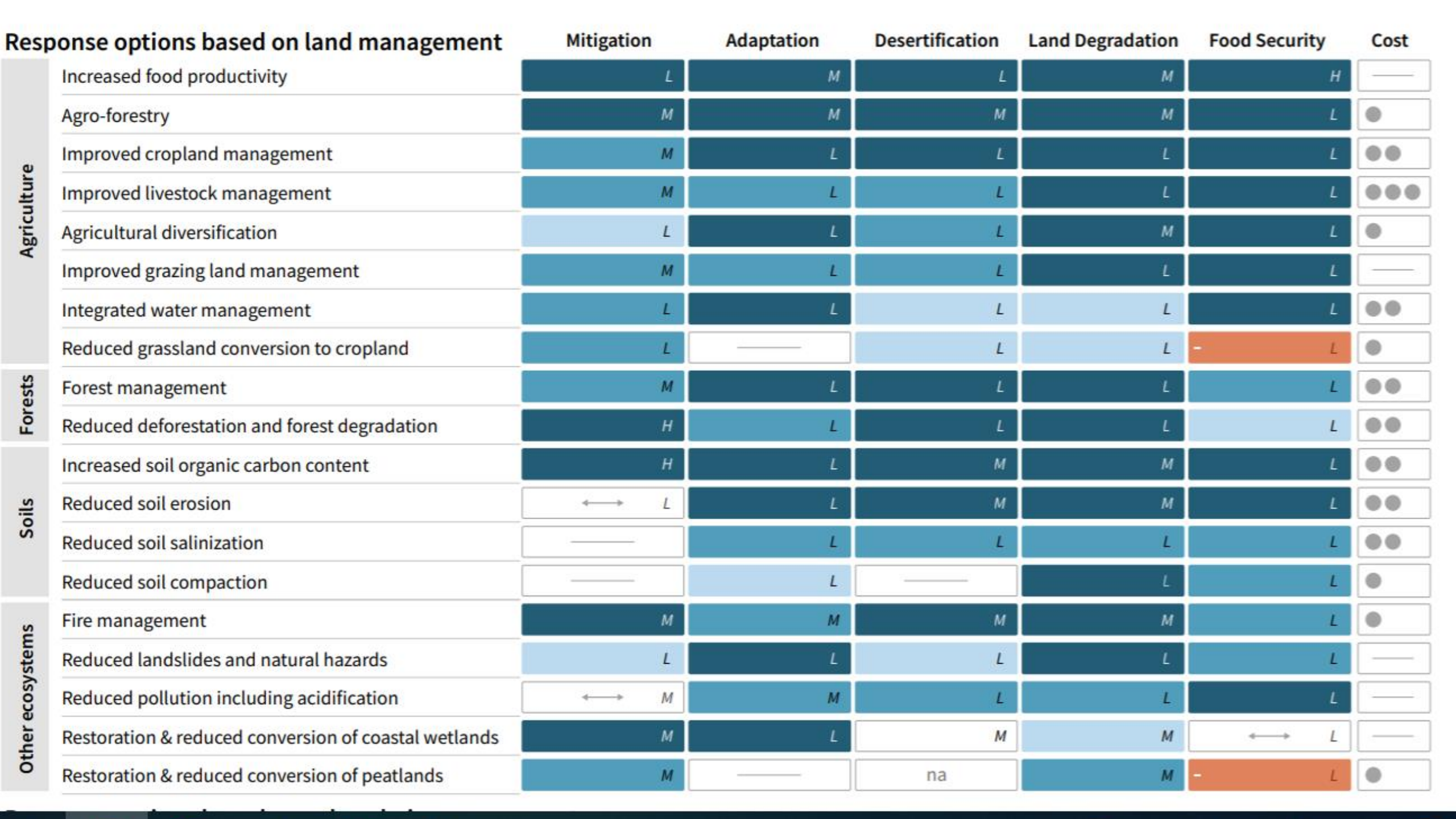
Need to better balance economic development, poverty alleviation, conservation and climate goals in the landscape


1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

3 Value creation, extraction and destruction in the landscape

3 Value creation, value extraction and value destruction in the landscape

Activity in the landscape	Short-term gain	Long-term costs	Main indicators
Industrial agriculture	High agricultural yields (with high inputs)	• Nutrient runoff (eutrophication; coral reef dieback/bleaching) • High GHG emissions: climate change • Depletion and pollution of freshwater • Loss of biodiversity	➢ **Soil organic carbon** ➢ **Biodiversity** ➢ **Freshwater quantity and quality** ➢ **Nutrient runoff into marine ecosystems**
Organic Agriculture	None (lower yields)	• Higher farmer income • Farmer and consumer health • Biodiversity • Lower climate impact	
Regenerative Agriculture	Negative (upfront investment)	• Higher farmer income • CC Mitigation and adaptation • Farmer and consumer health • Biodiversity • Lower climate impact	
Ecosystem Restoration	Negative (upfront investment)	• Carbon capture (CC mitigation) • CC Adaptation	


Response options based on land management
Mitigation
Adaptation
Desertification
Land Degradation
Food Security
Cost
Agriculture
Increased food productivity L M L M H
Agro-forestry M M M M L
Improved cropland management M L L L L
Improved livestock management M L L L L
Agricultural diversification L L L M L
Improved grazing land management M L L L L
Integrated water management L L L L L
Reduced grassland conversion to cropland L L L - L
Forests
Forest management M L L L L
Reduced deforestation and forest degradation H L L L L
Soils
Increased soil organic carbon content H L M M L
Reduced soil erosion L L M M L
Reduced soil salinization L L L L
Reduced soil compaction L L L L
Other ecosystems
Fire management M M M M L
Reduced landslides and natural hazards L L L L L
Reduced pollution including acidification M M L L L
Restoration & reduced conversion of coastal wetlands M L M M L
Restoration & reduced conversion of peatlands M na M - L


Estimated 25 million ha of degraded land in the Cerrado/Brazil alone; about 2 billion ha world-wide, about half of all agricultural land.

4 Global goals for landscapes

Main international policy goals for landscapes

1. **Sustainable Development Goals:** contribute directly & indirectly to several SDG goals and targets in a holistic way by balancing the need to enhance food production and support to smallholder farmers with better forest protection, climate mitigation, water management

2. **Climate Change:** mitigate emissions to ensure the global community meet the Paris Climate Agreement to limit temperate rise to 1.5-2C

3. **Restoration:** contribute to rehabilitation of degraded land (there is more than 2 billion ha of degraded land at present). UN Decade on Ecosystem Restoration 2021-2030 will focus on restoring degraded ecosystems worldwide

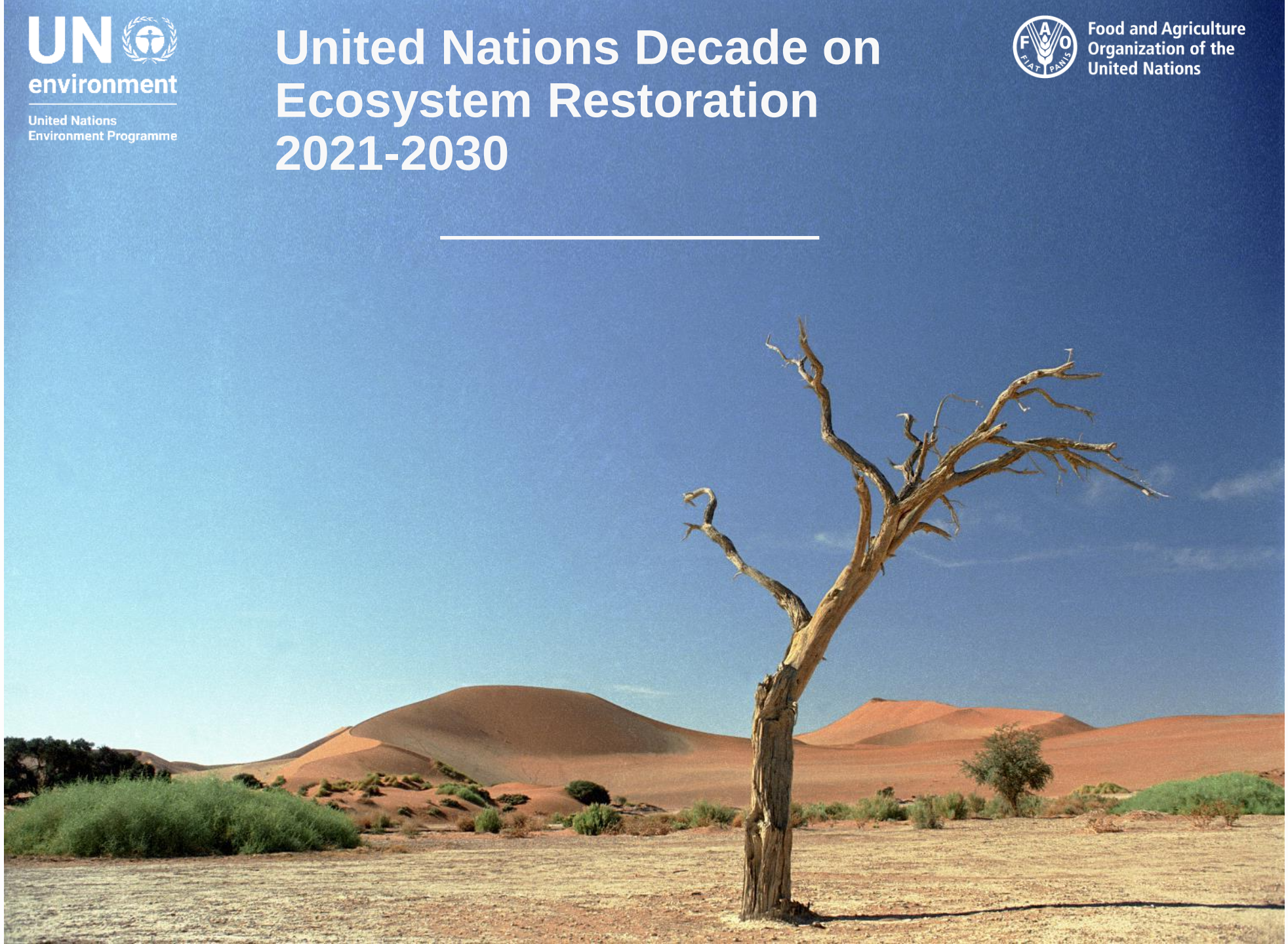
4. **Halting (tropical) deforestation:** The New York Declaration on Forests aims to half deforestation by 2020 and end it by 2030

5. **Biodiversity and ecosystems:** contribute to reduce loss of natural habitats, and protect biodiversity through Aichi Biodiversity Targets (new post-2020 framework COP15 in 2020)

UN environment
United Nations Environment Programme

United Nations Decade on Ecosystem Restoration 2021-2030

Food and Agriculture Organization of the United Nations



The need for action

Land Degradation:

Negatively affecting well-being of **3.2 billion people**

Loss of biodiversity and ecosystem services = **10% of global GDP**

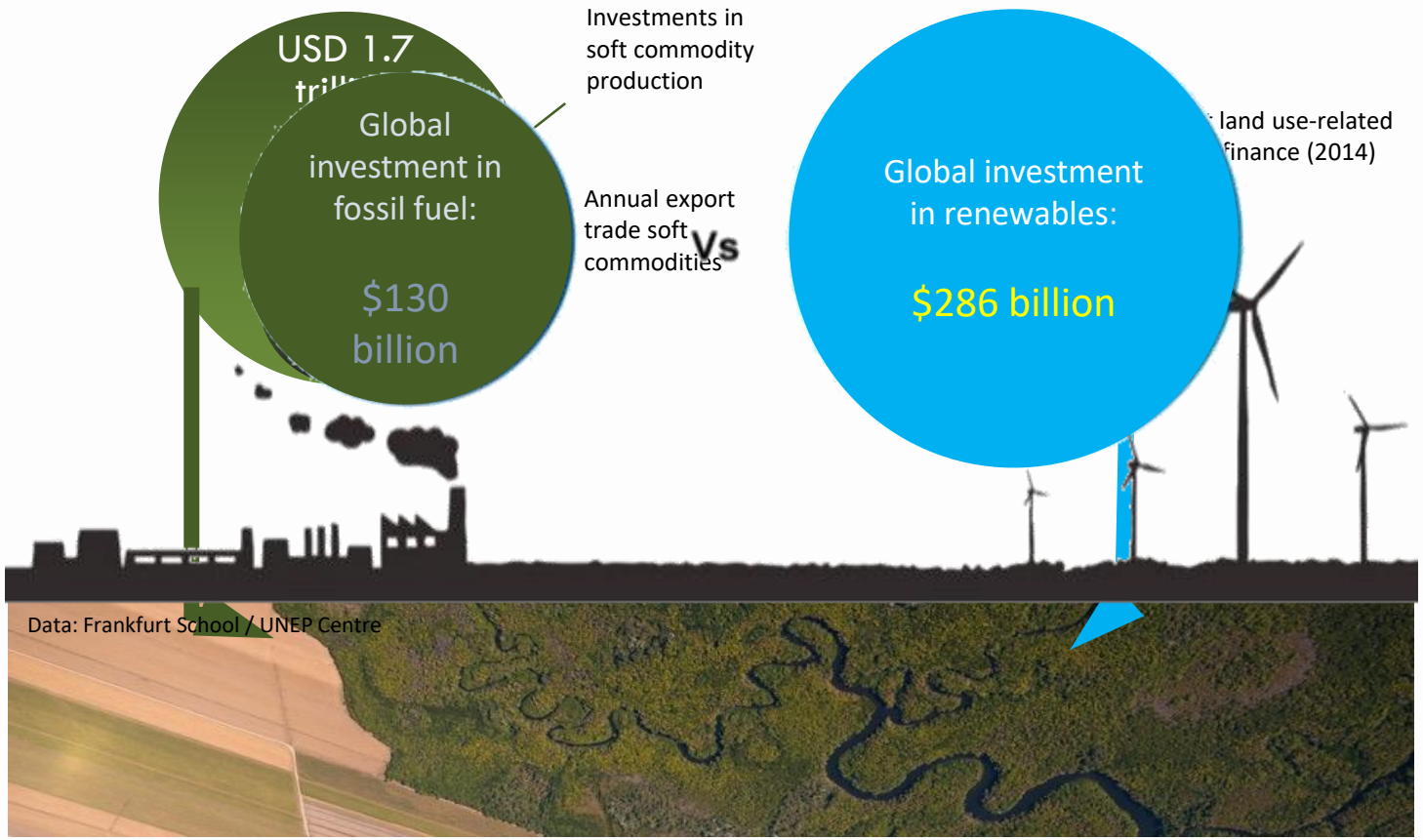
Forests:
70 M ha lost since 2000

Wetlands:
70% lost in last century

Drastic decline of coral reefs and seagrass beds

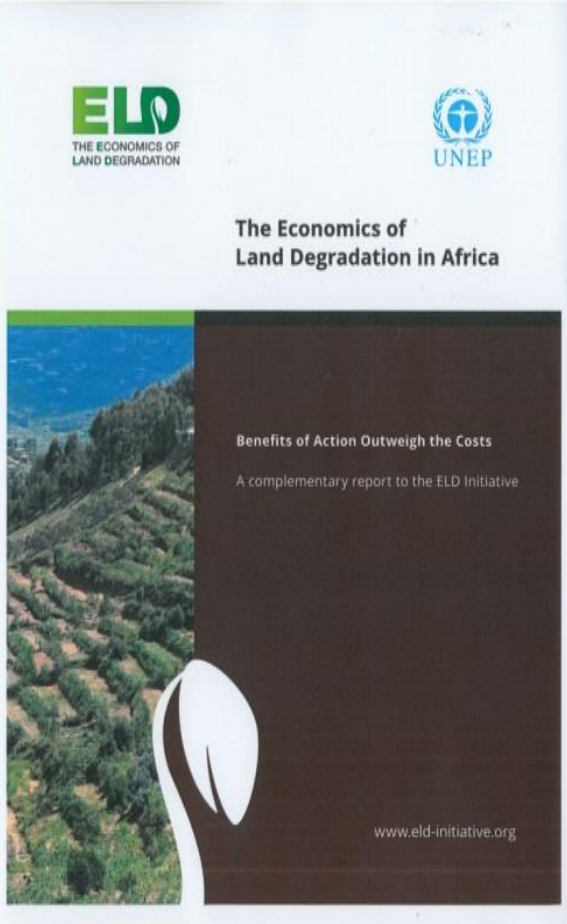
Current situation

- **Energy**: investment renewables now higher than fossil fuels (inflection point?)
- **Land use**: investment in ‘unsustainable’ land use orders of magnitude larger



5 *Case study:* Benefit-Cost Ratio of restoration in Africa and Asia

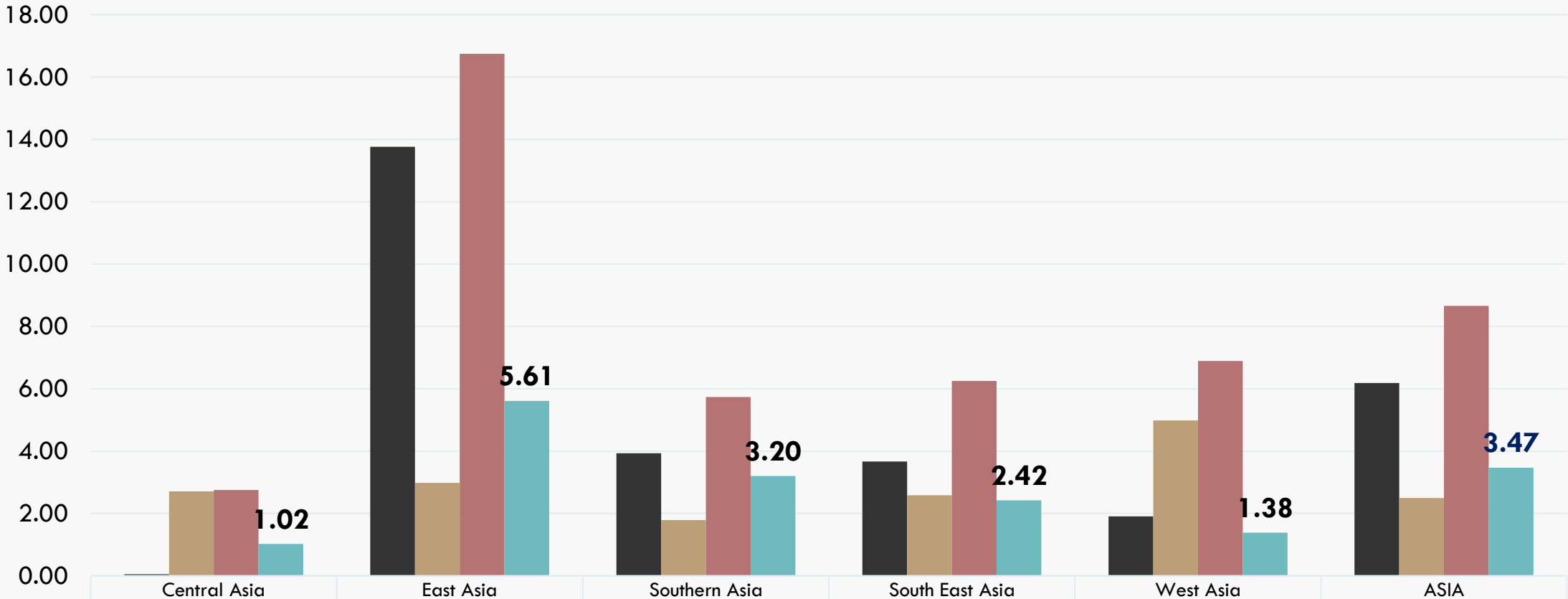
Economic Efficiency of Restoration in Africa (42 Countries)



	Benefit Cost ratio over 20 years
Region	BCR
East Africa	4.00
Central Africa	4.62
North Africa	26.35
South Africa	3.16
West Africa	5.45

Investment in LDN in Asia (46 Countries)

Present values of costs, benefits , net present values and benefit cost ratios of achieving agricultural land degradation neutrality in Asia and sub-regions (period 2018-2030, average discount rate of 5.67%)



	Central Asia	East Asia	Southern Asia	South East Asia	West Asia	ASIA
NPV in 1000s USD/ha	0.05	13.77	3.93	3.67	1.91	6.18
PVTC_SLM in 1000s USD/ha	2.71	2.98	1.79	2.59	4.99	2.49
PVB in 1000s USD/ha	2.75	16.75	5.74	6.25	6.90	8.66
BCR	1.02	5.61	3.20	2.42	1.38	3.47

6 *Case study*: Wildlife tourism in Uganda

Policy Entry Point: Uganda Green Growth Development Strategy (UGGDS)

- Tourism sector contributes 7.3% of GDP and employing 6% of labour force in Uganda.
- UGGDS targets the tourism and wildlife sector:
  - Quadruple the value of foreign tourism by 2030.
  - Create jobs and boost incomes
  - Protect natural capital
- Environmental-economic accounts are needed to provide key data and statistics for supporting green growth policy actions (UGGDS, Section 4.10)

Map of National Parks in Uganda (2019)

0 50 100 km

N

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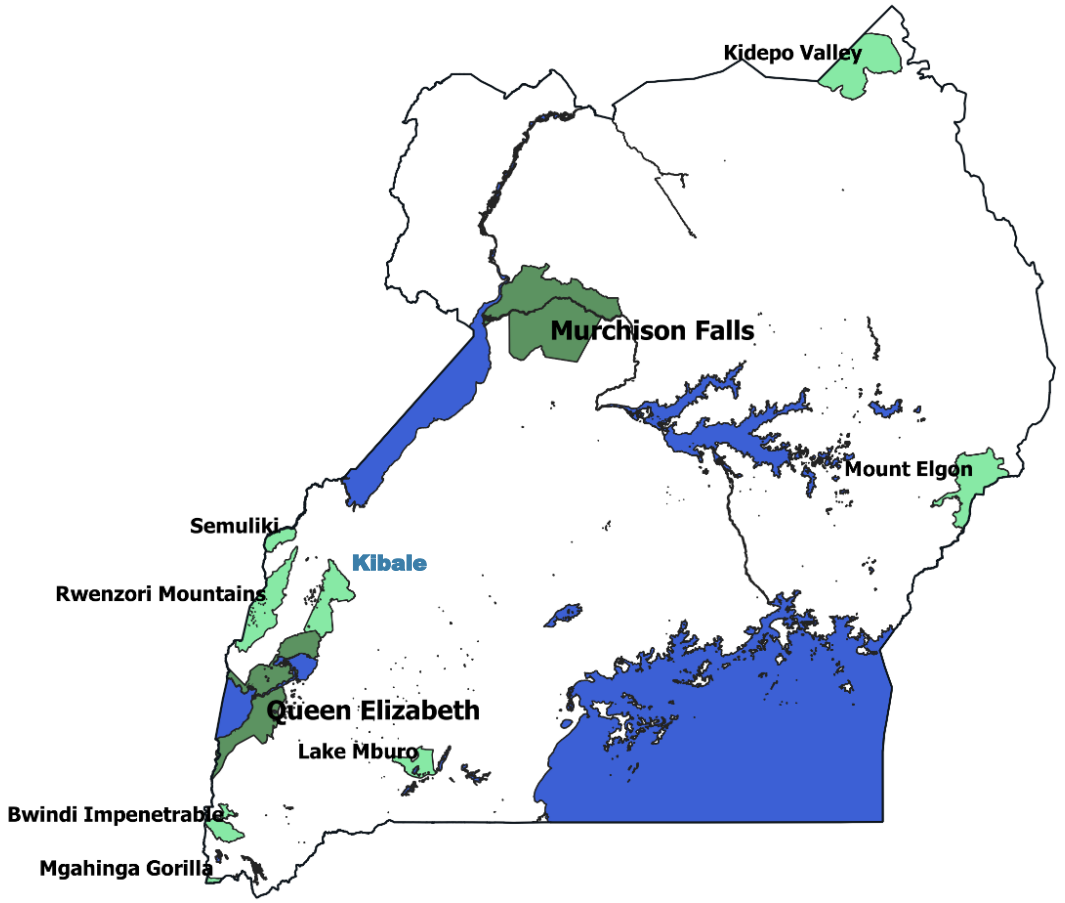
www.unep-wcmc.org

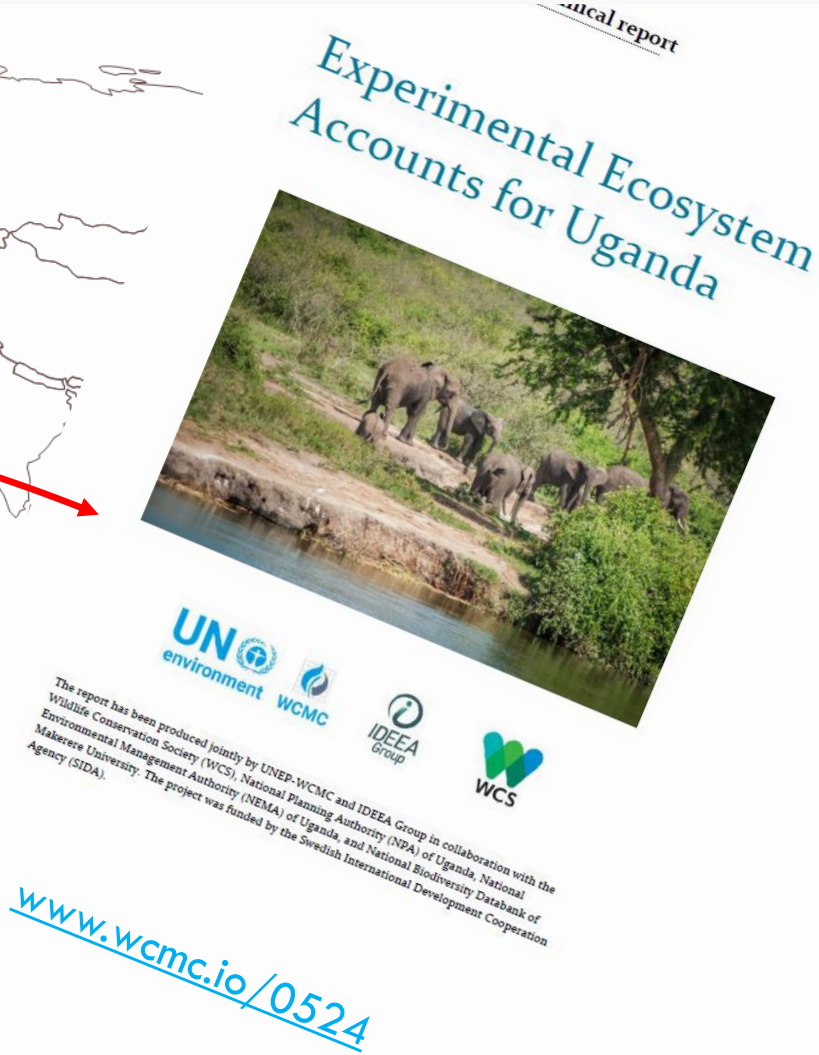
This map presents the location and extent of Uganda's 10 National Parks (from the World Database on Protected Areas). Forest Reserves and other Conservaion Areas are omitted. Printed on: 14.10.2019



Policy Insights for Green Growth

- Understand direct and indirect expenditure associated with the wildlife tourism sector (identify highest multipliers for green growth)
- Reveal trends in the condition of ecosystems and species and where these are a risk to tourism revenues (protect natural capital)
- Identify opportunities for developing wildlife watching packages for different tourists (increase export revenue)
- Link wildlife tourism development to job creation and poverty alleviation (integrate with local employment and poverty statistics)
- Inform macroeconomic analysis for Green Economy policy planning (by linking ecosystem services to standard economic units)

Ecosystem accounting in Uganda



Work with partners to design accounts targeting key policy entry points

a. NBSAP (II) – Achieve Aichi Targets

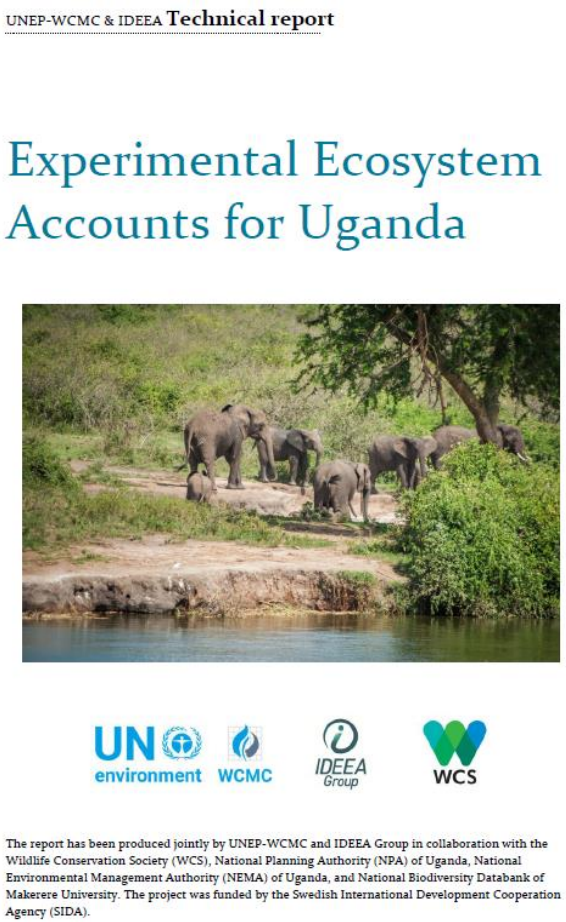
b. NDP (II) – Implements SDGs

www.wcmc.io/0524

More Accounts!

- Land
- Ecosystem Extent
- Species
- Policy applications

www.wcmc.io/0524


UNEP-WCMC & IDEEA Technical report

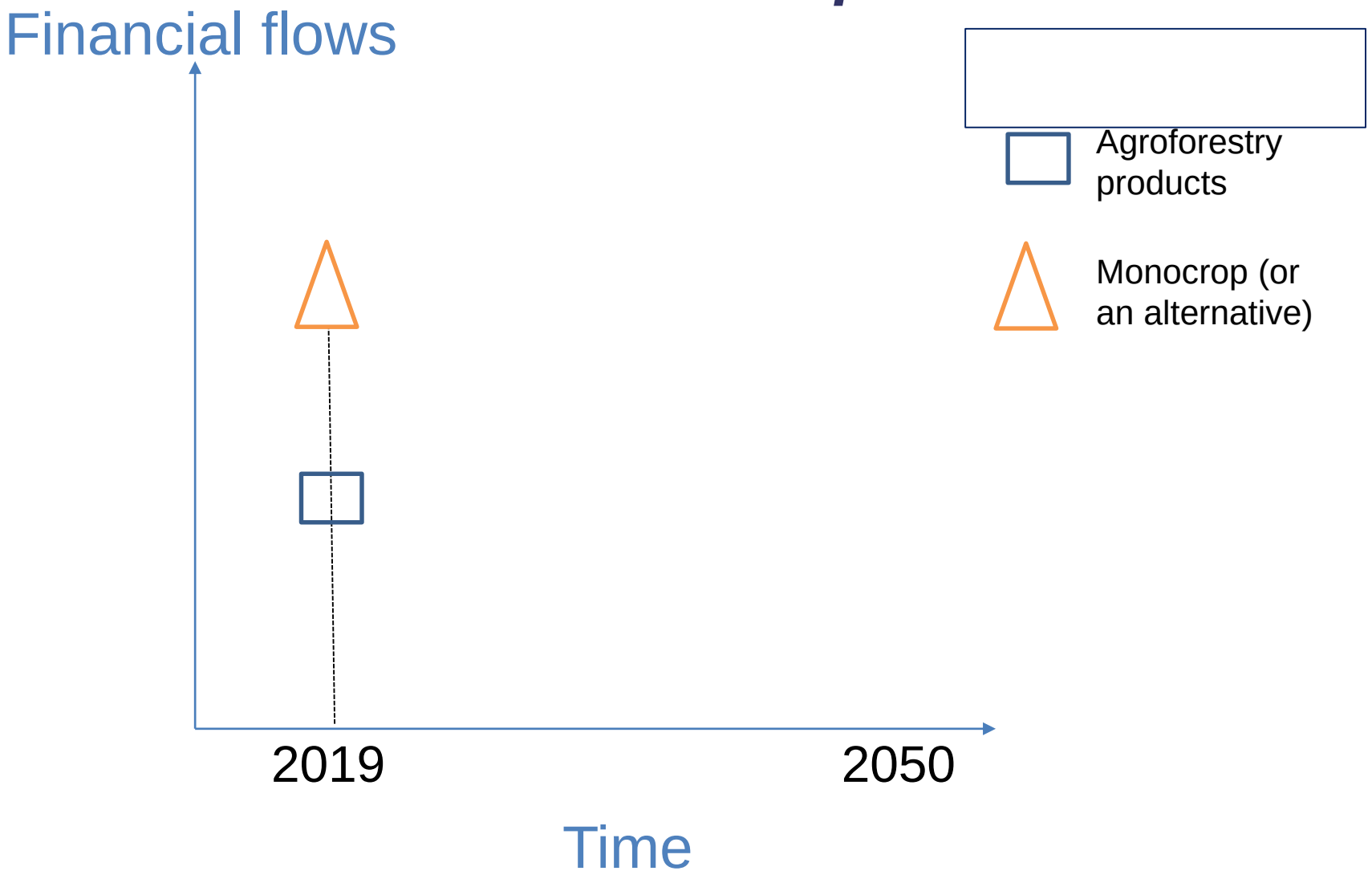
Experimental Ecosystem Accounts for Uganda

UN environment WCMC IDEEA Group WCS

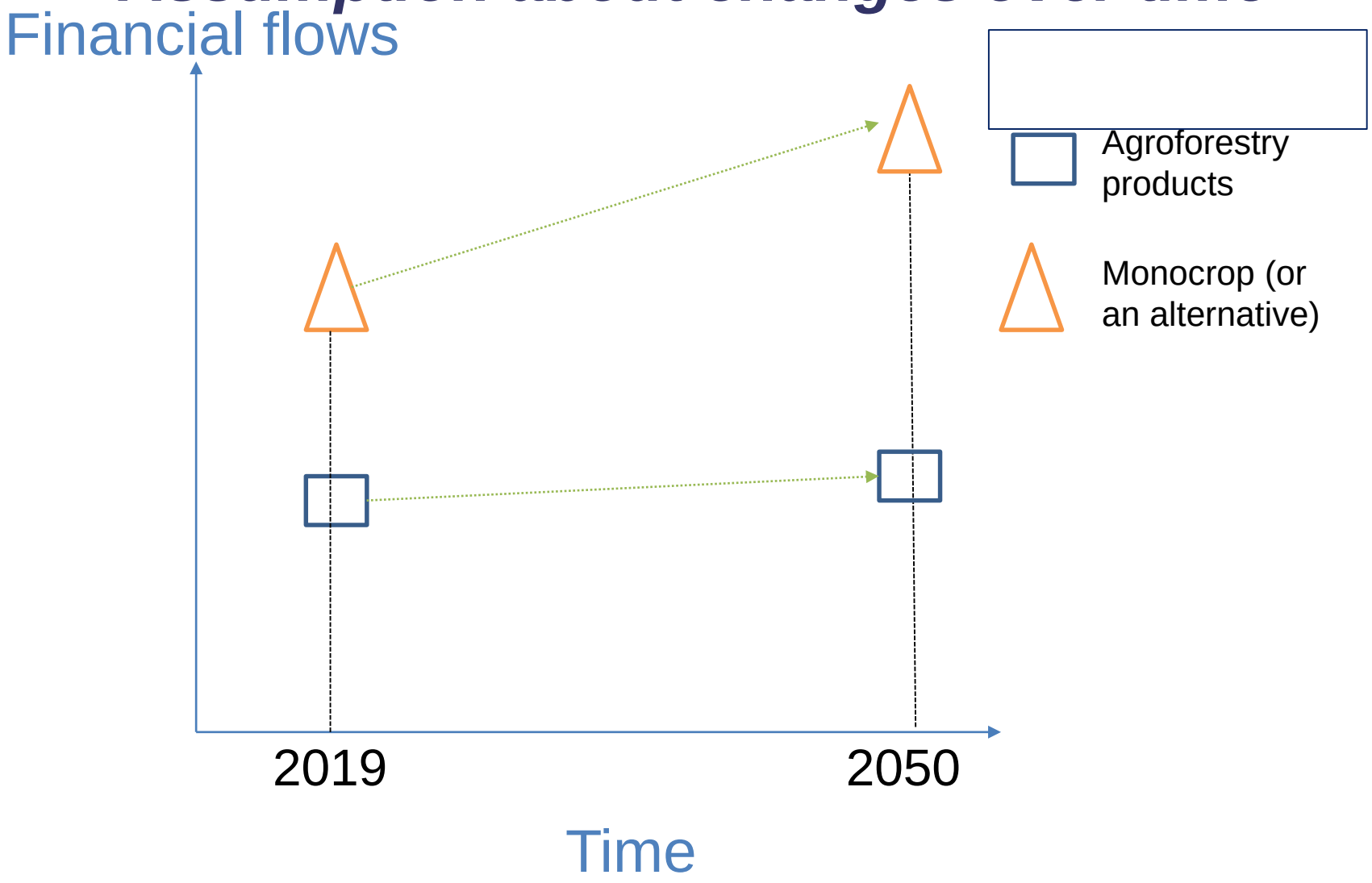
The report has been produced jointly by UNEP-WCMC and IDEEA Group in collaboration with the Wildlife Conservation Society (WCS), National Planning Authority (NPA) of Uganda, National Environmental Management Authority (NEMA) of Uganda, and National Biodiversity Databank of Makerere University. The project was funded by the Swedish International Development Cooperation Agency (SIDA).

7 *Case study*: Agricultural externalities

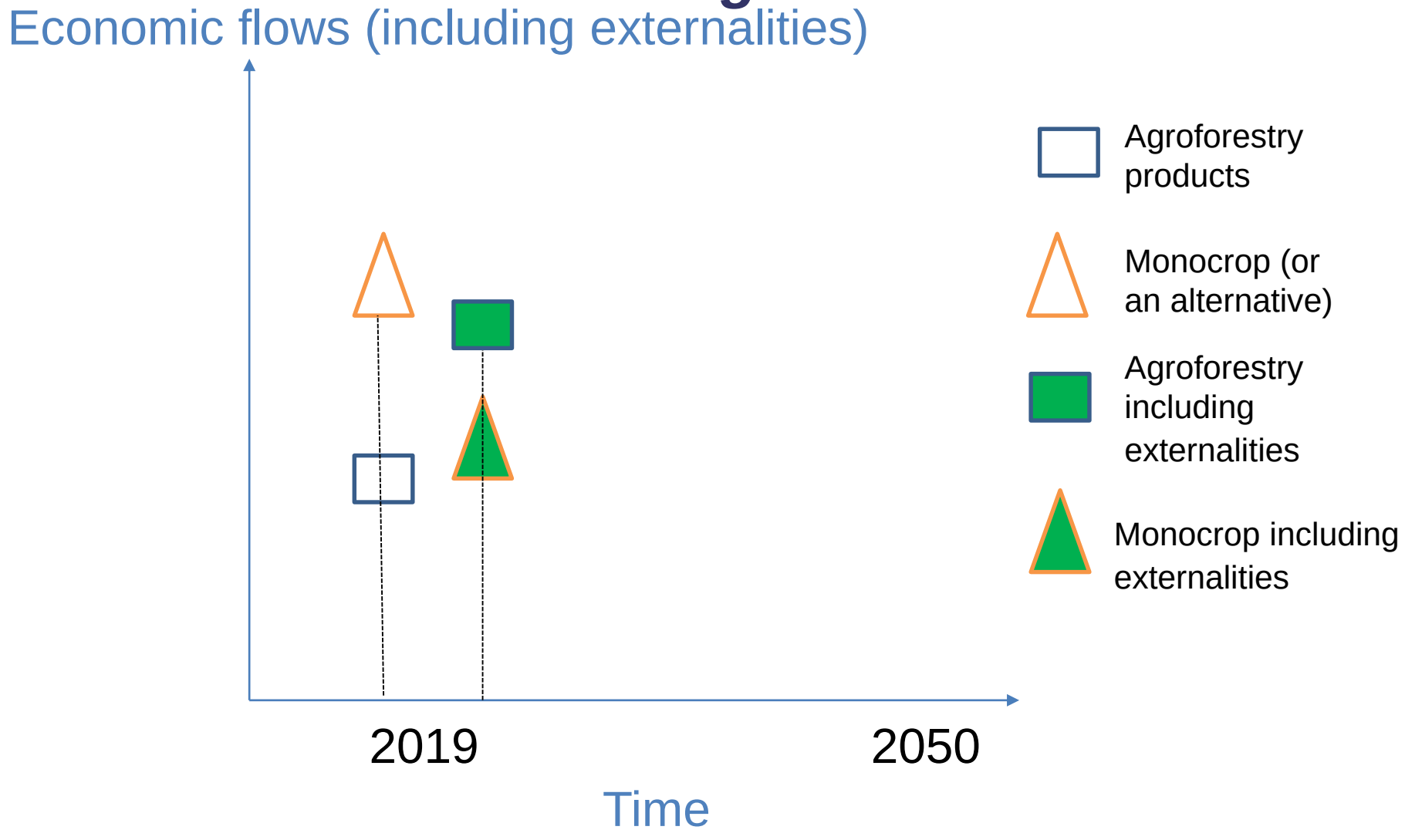
Agro-forestry versus monoculture: *current assumption*



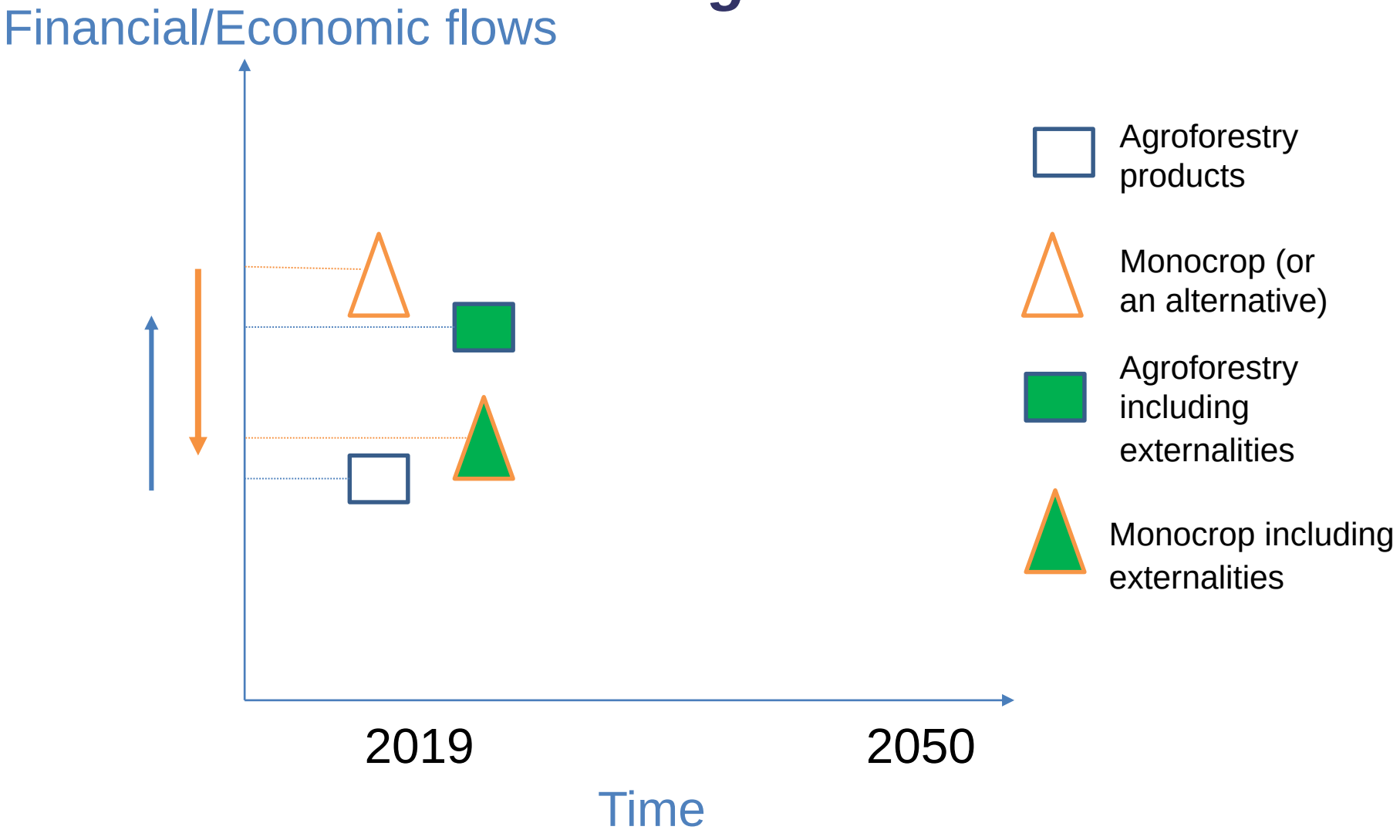
Agro-forestry versus monocrop:
Assumption about changes over time



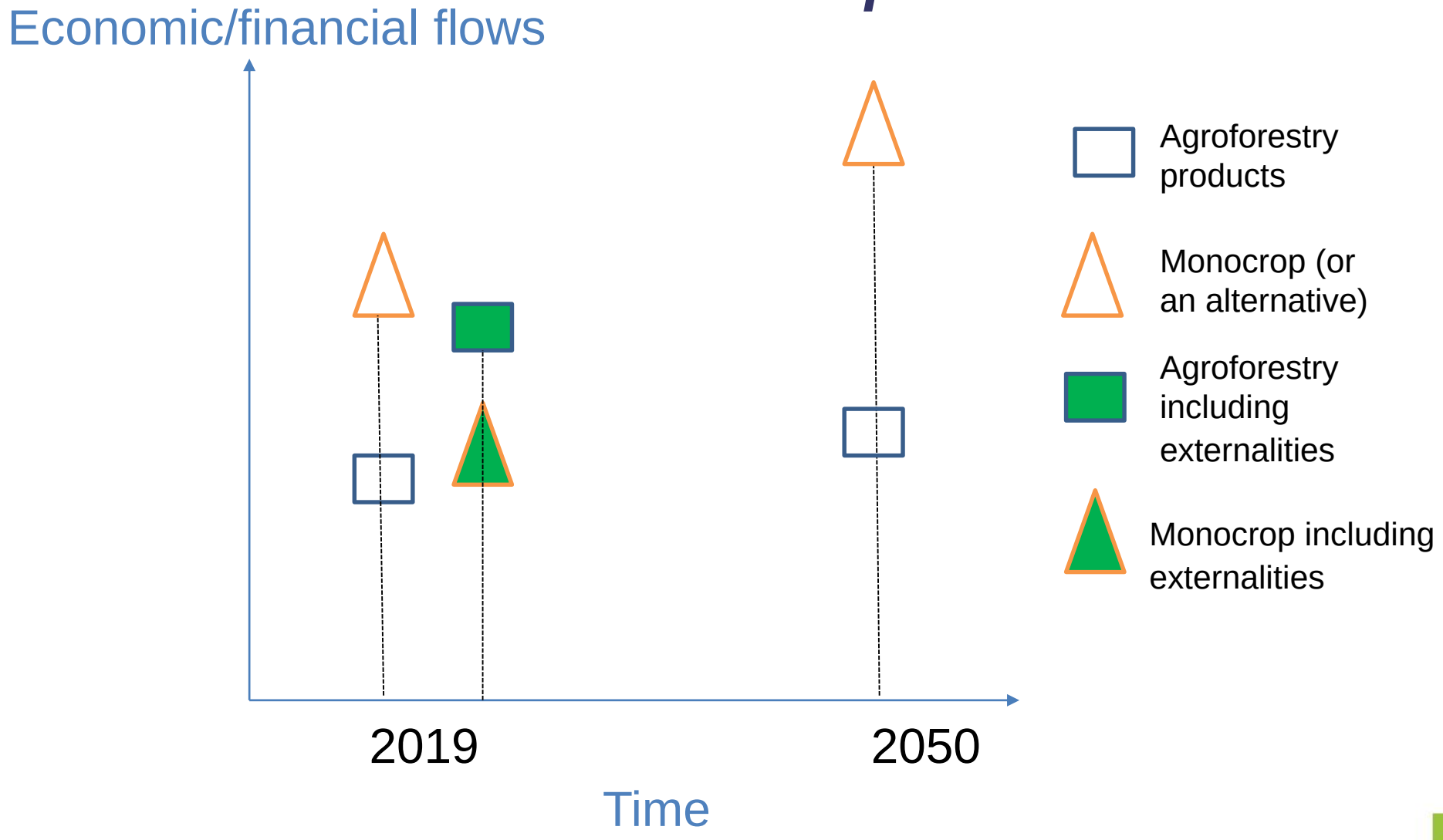
Agro-forestry versus monocrop: *2019 including externalities*



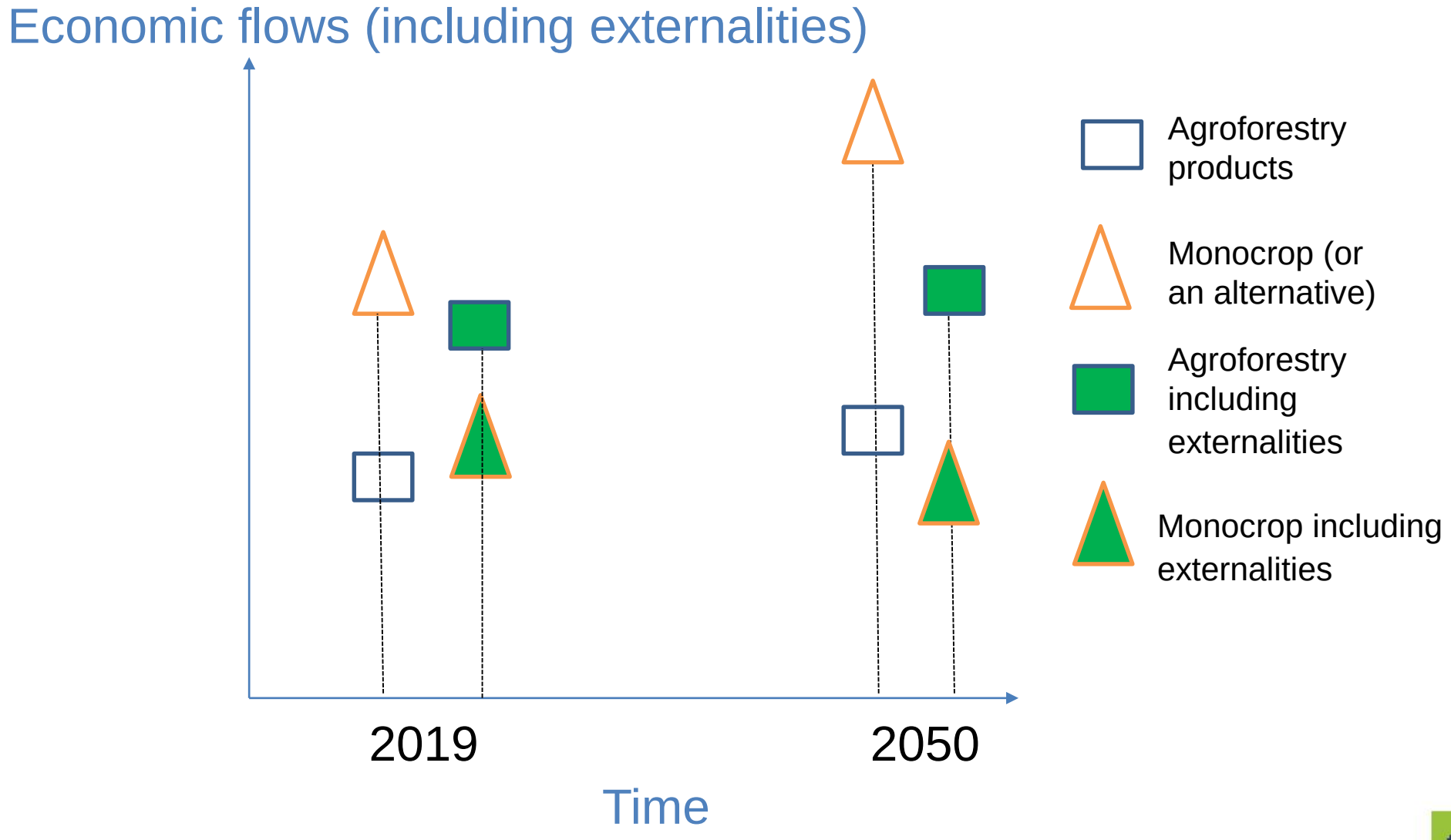
Agro-forestry versus monocrop: *2019 including externalities*



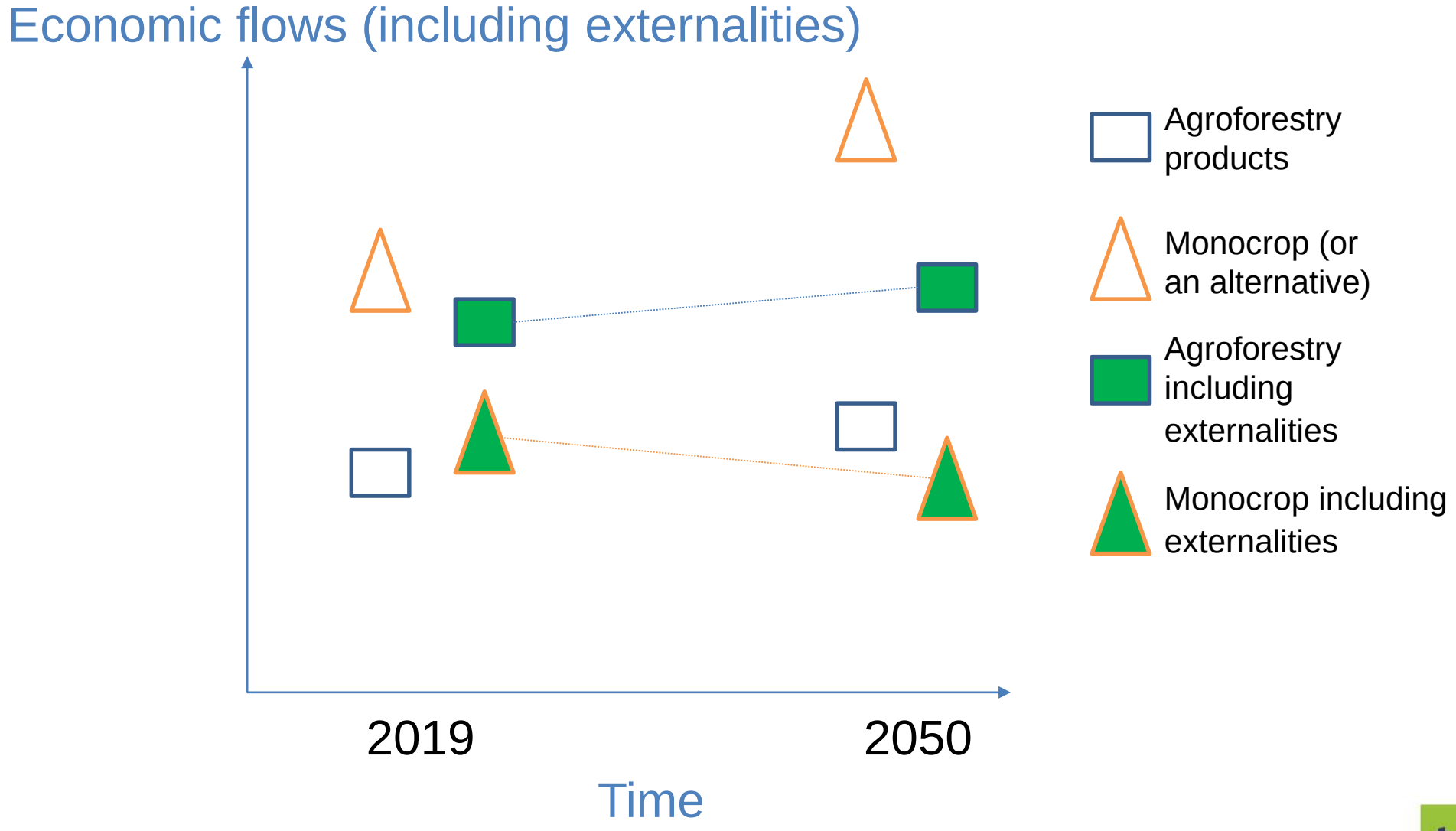
Agro-forestry versus monocrop: *current assumption*



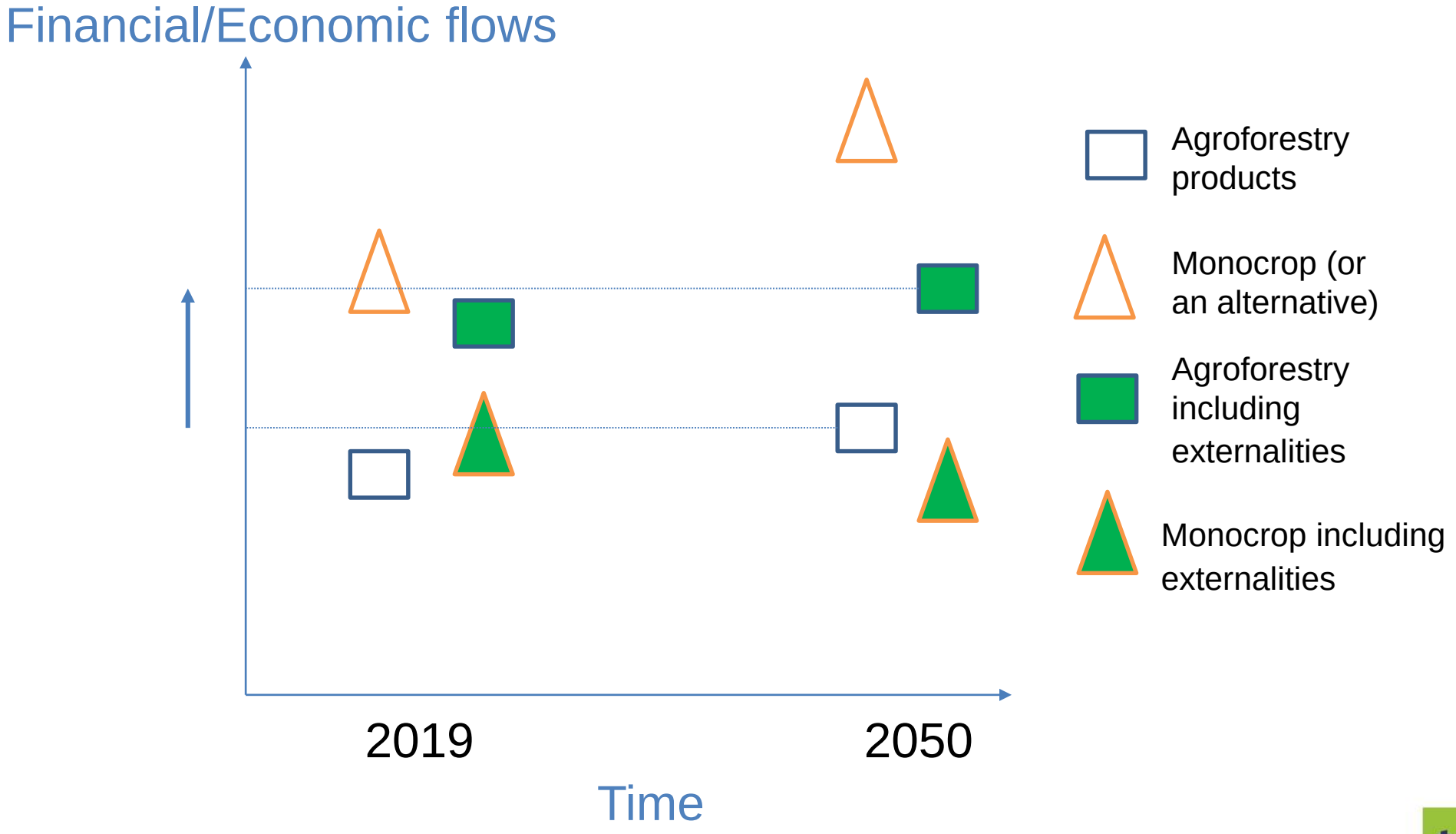
Agro-forestry versus monocrop: *2019/2050*



Agro-forestry versus monocrop: *Situation worsens for monocrop over time*



Agro-forestry versus monocrop: *2050 for agro-forestry*



Agro-forestry versus monocrops: *2050 for the monocrop*

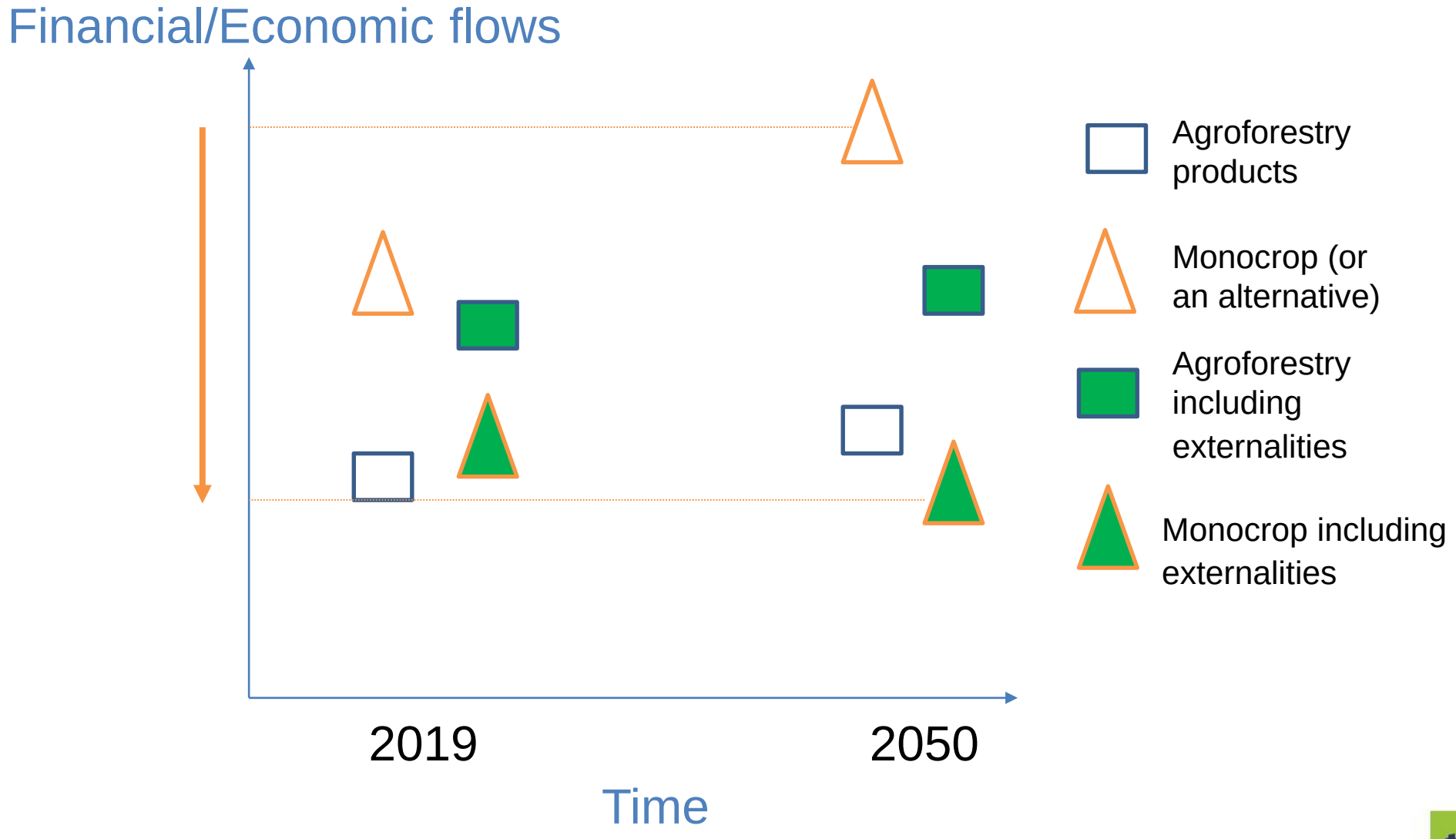
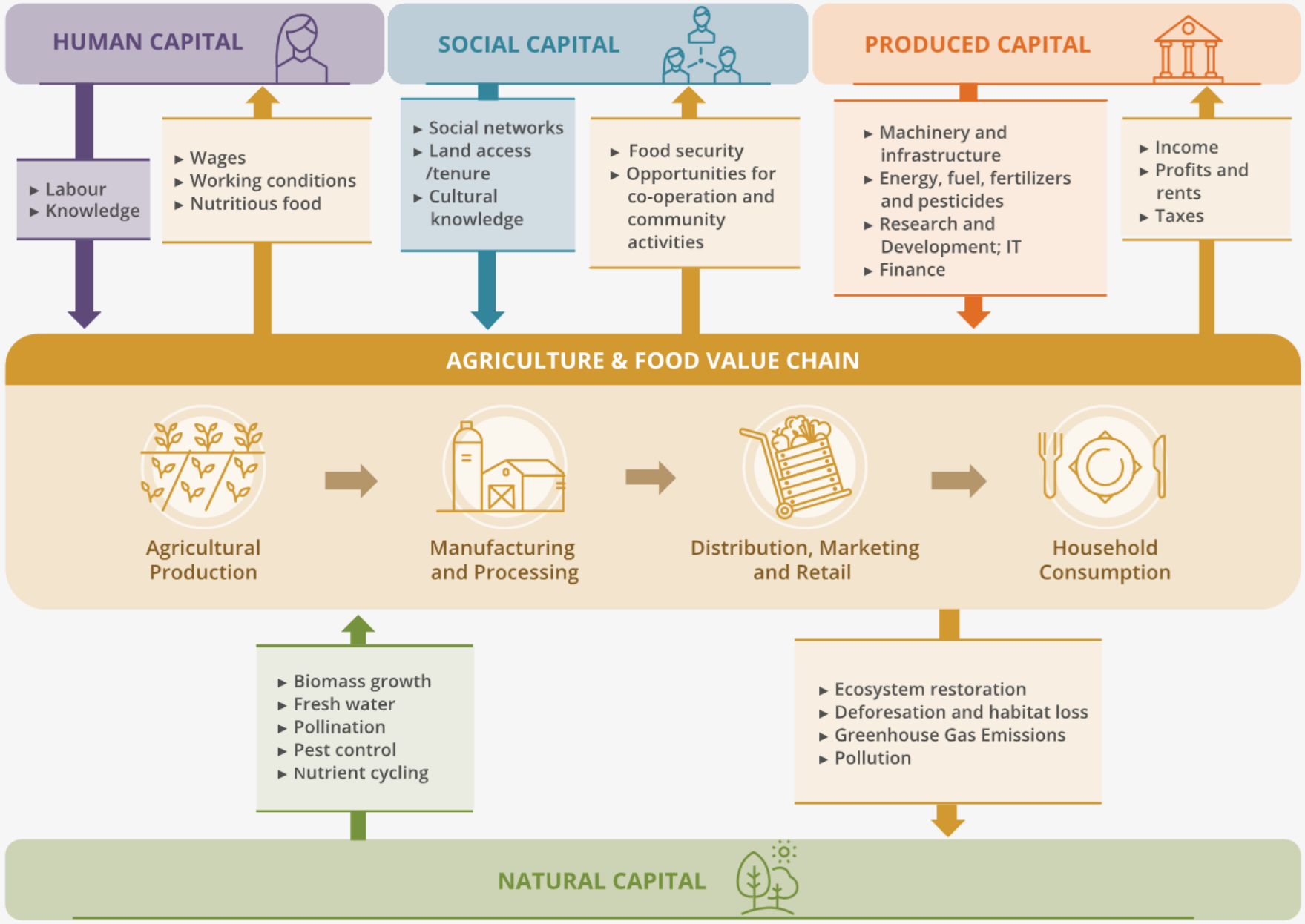


Figure 2.1 Capital stocks and value flows in eco-agri-food systems (Source: Hussain and Vause 2018)



8 Tools and resources

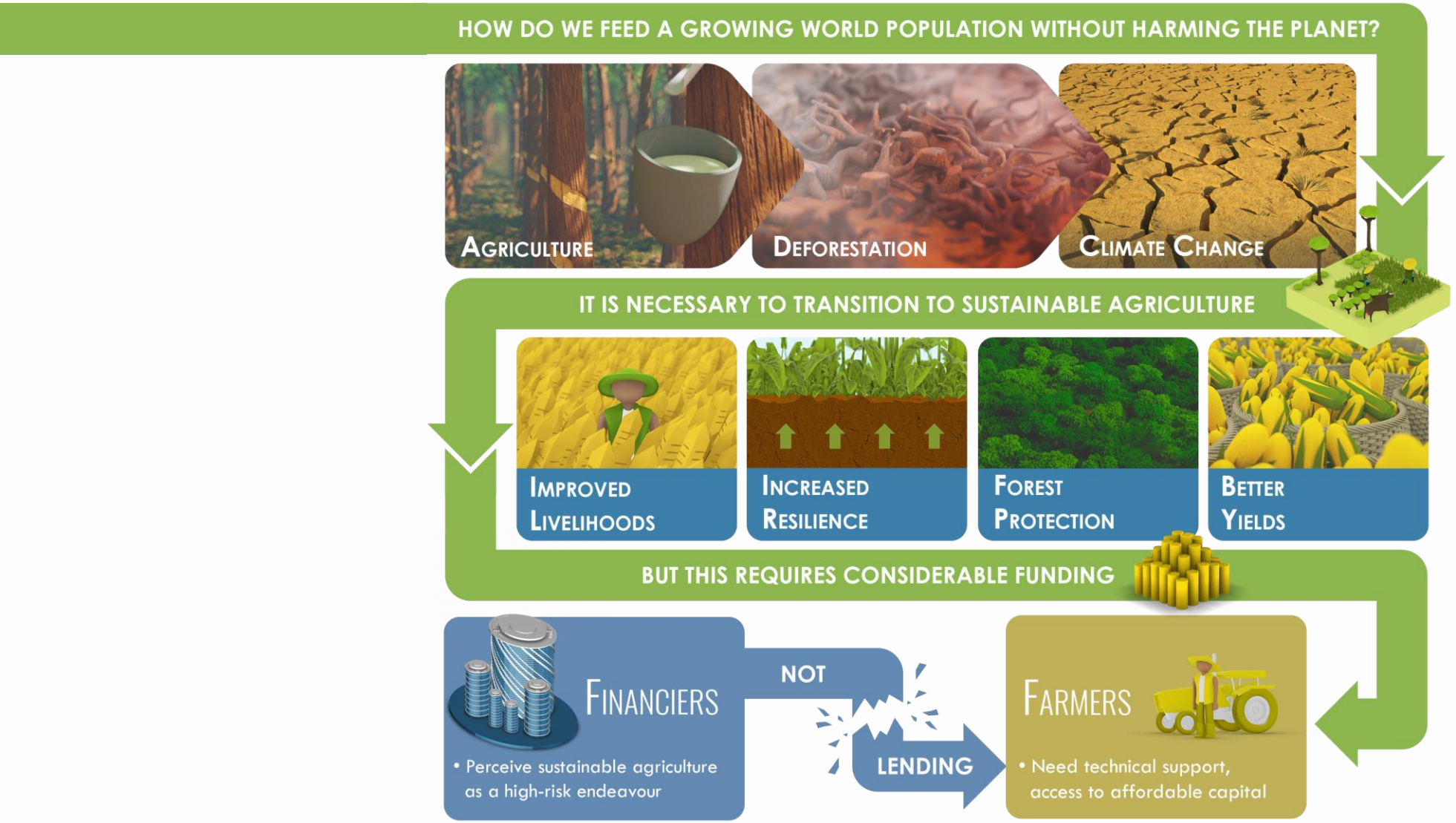
Tools and Resources

1. **TEEB Agri-Food:** http://teebweb.org/agrifood/
2. **IBAT – Integrated Biodiversity Assessment Tool:**

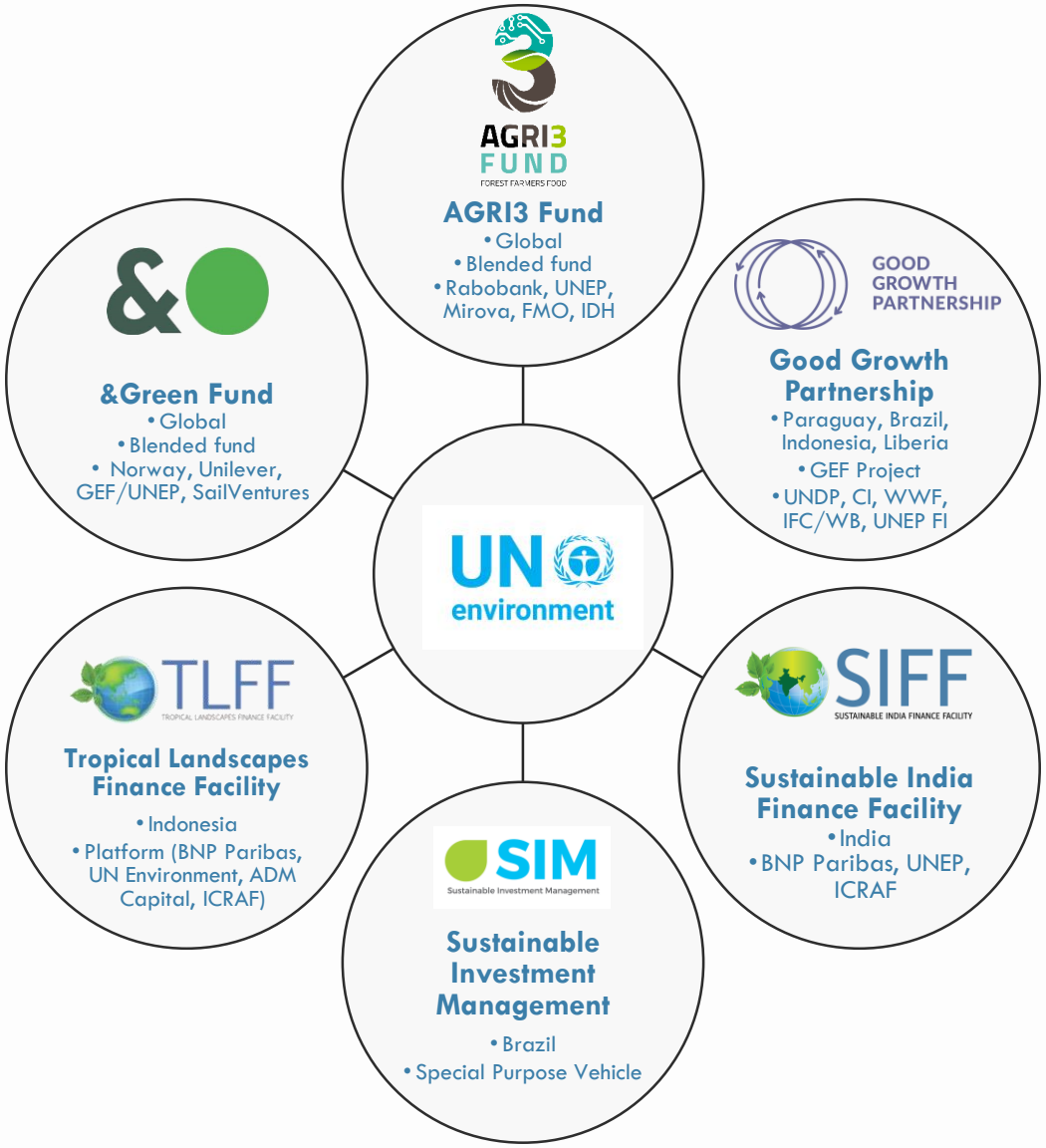
www.ibatforbusiness.org

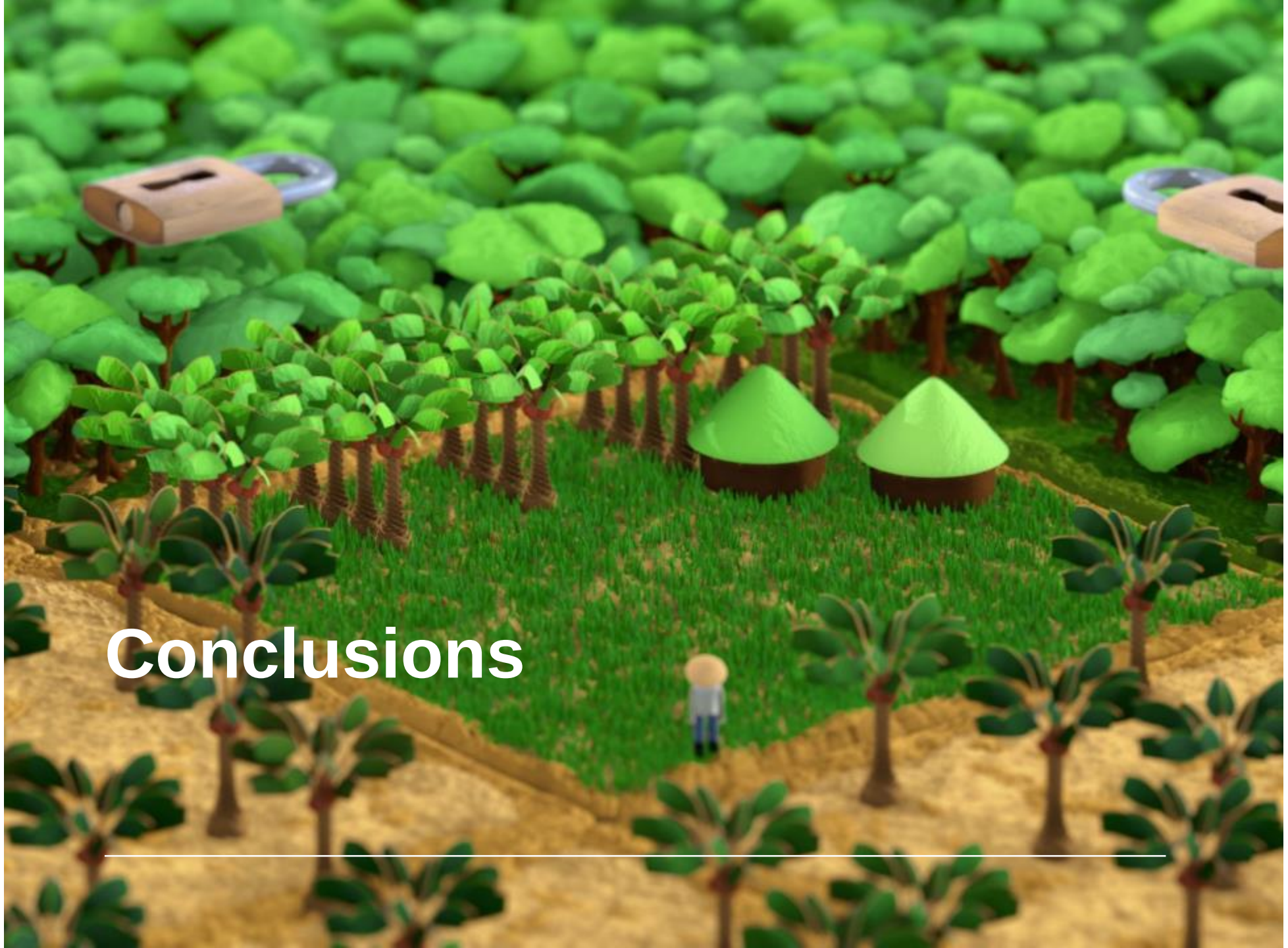
3. **Global Partnership on Forest and Landscape Restoration:** www.forestlandscaperestoration.org
4. **UN Decade on Ecosystem Restoration 2021-2030:** www.decadeonrestoration.org
5. **The Economics of Land Degradation:** www.eld-initiative.org

UNEP LAND USE FINANCE PROGRAMME



Creating structure & alignment across several facilities through UNEP Land Use Finance Programme





Conclusions

How to achieve transformation? (1)

- Focus on **long-term societal gain instead of short-term private profits**
- Reflect this better in **national accounting and fiscal policies**
- Ensure **monitoring of key indicators for success in the landscape:** 1. soil organic carbon; 2. farmer income and health; 3. biodiversity; 4. water quantity and quality
- **Channel public and private funds into regenerative agriculture and ecosystem restoration**

Our values are based on our stories

'If a man walks in the woods for love of them half of each day, he is in danger of being regarded as a loafer; but if he spends his whole day as a speculator, shearing off those woods and making earth bald before her time, he is esteemed an industrious and enterprising citizen.'

Henry David Thoreau (1817-1862): Life Without Principle

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Values in the landscape

THANK YOU