Ecosystem Health, Land Degradation Neutrality and Food Security: Perspectives

Johns Muleso Kharika

United Nations
Convention to Combat Desertification

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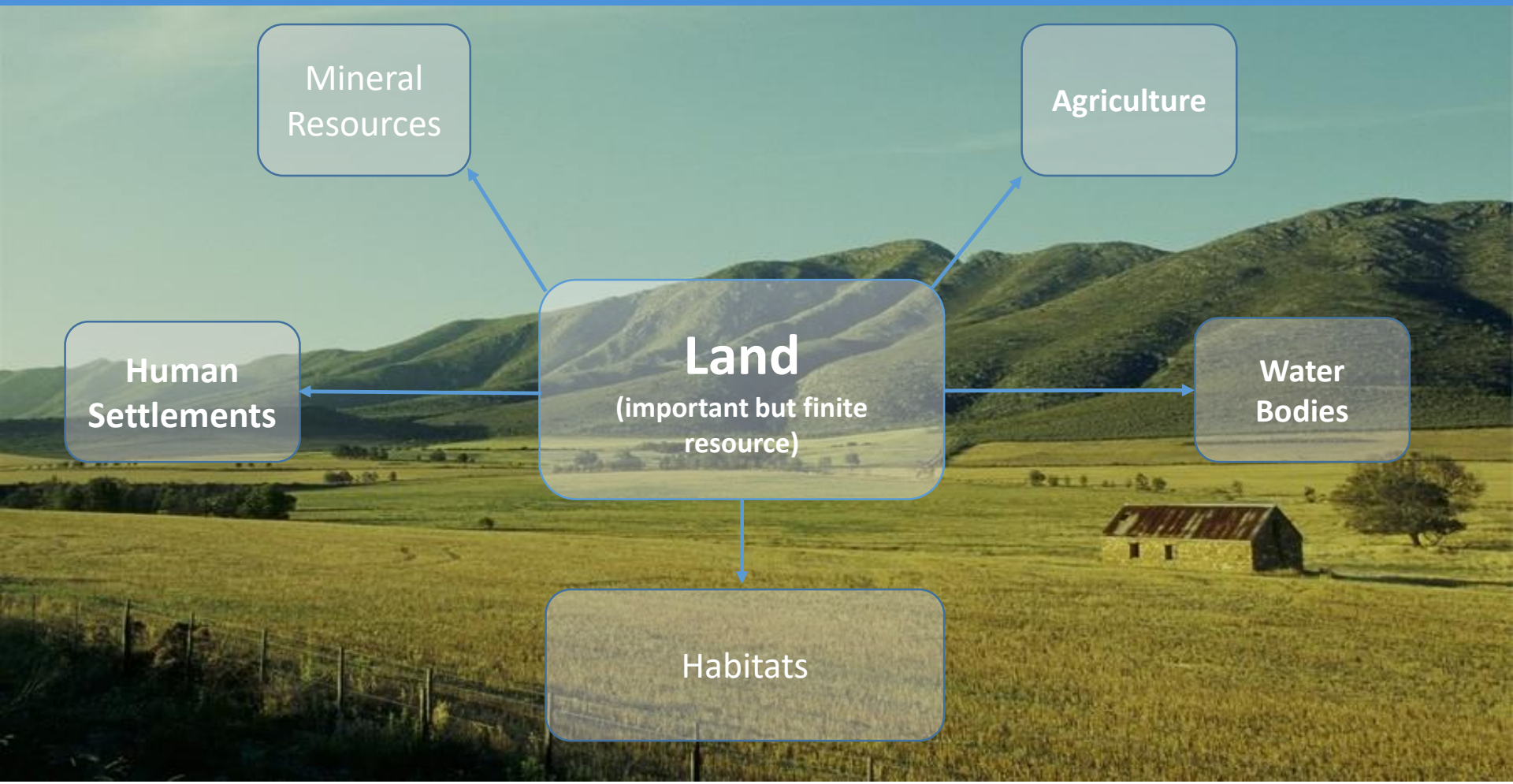
Introduction



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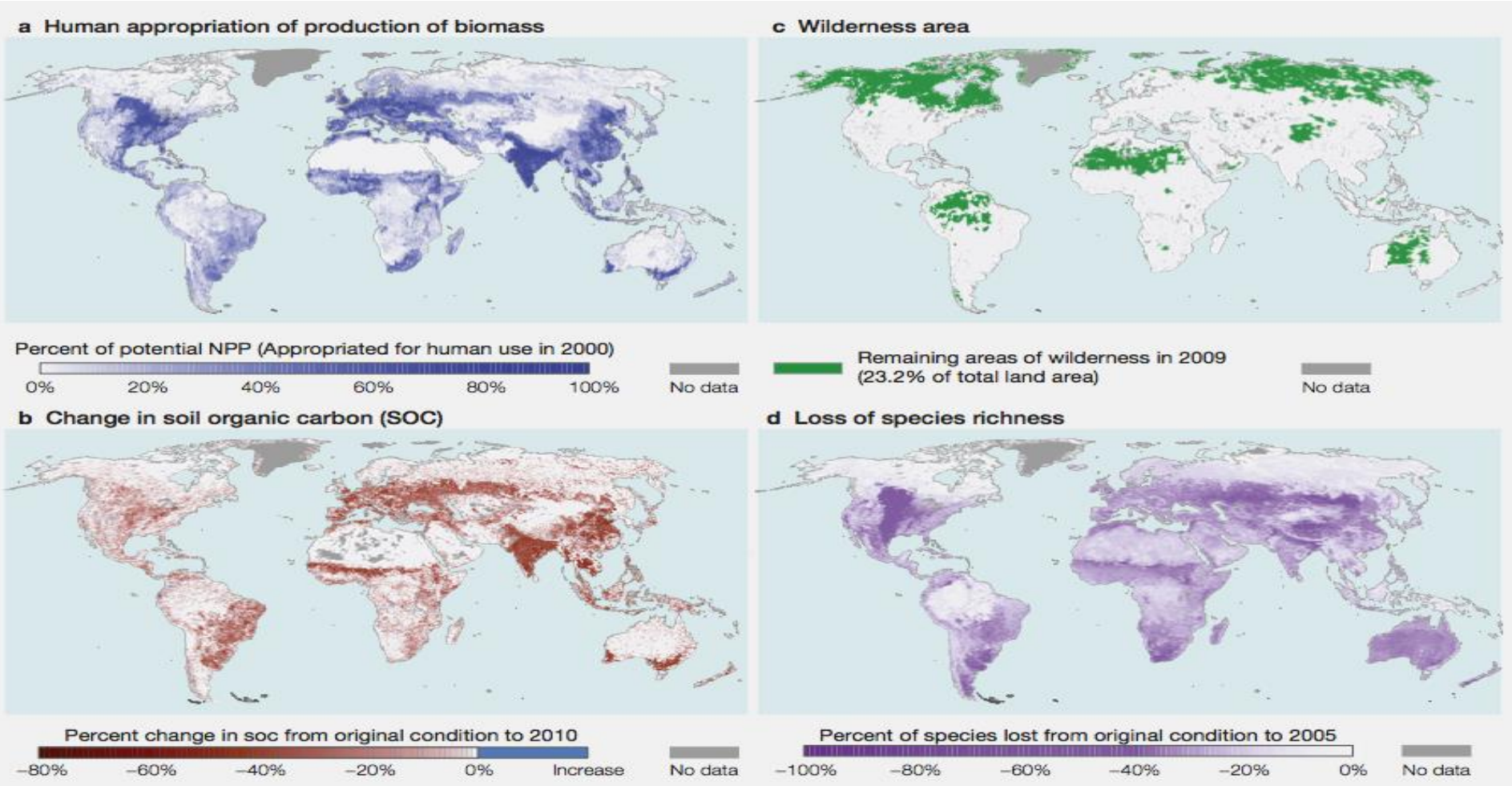
Land Degradation



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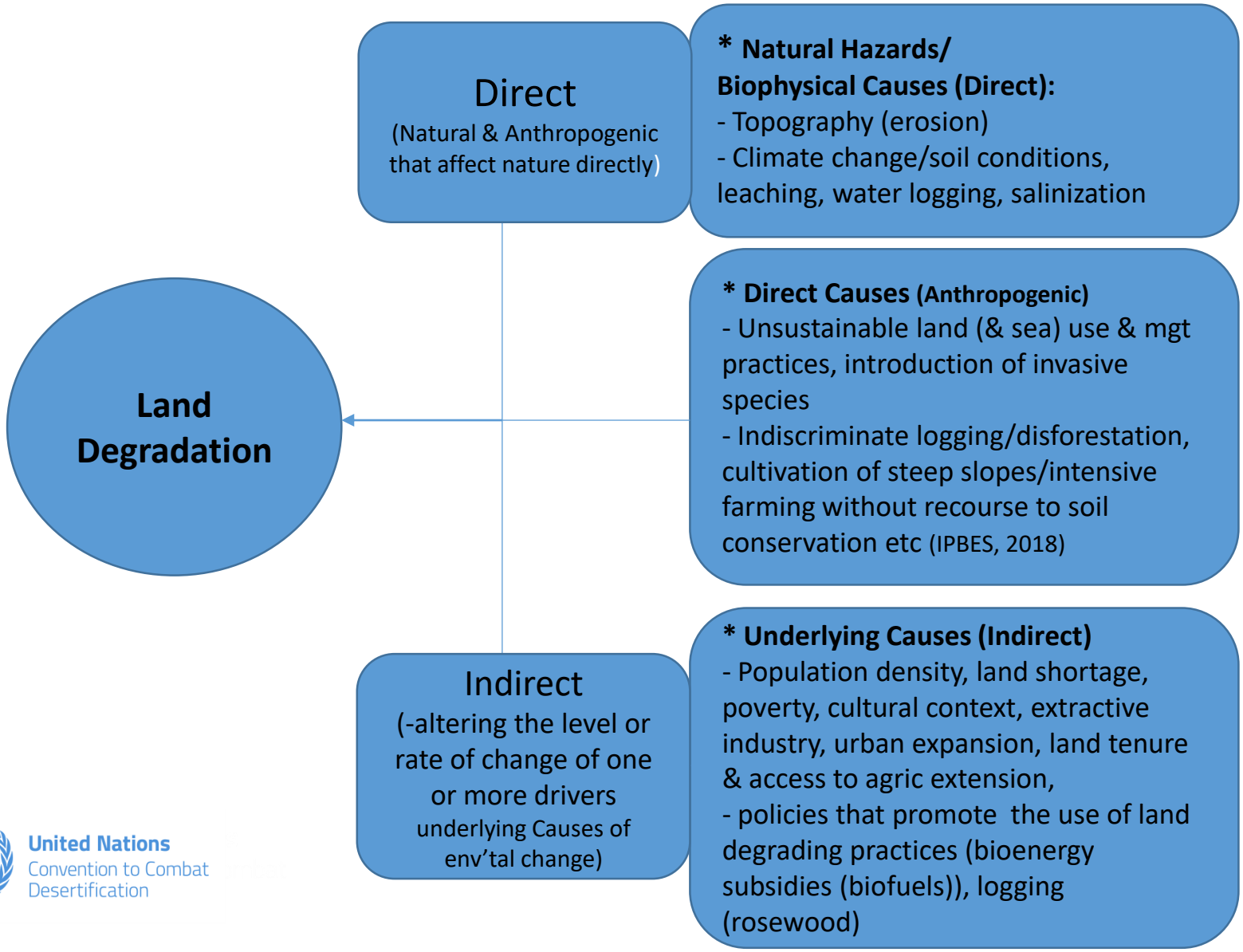
Drivers of Land Degradation



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Implications

* Global Impact: 3.2 billion people
* 10% of annual global gross product in loss of biodiversity & ecosystem services

* Impact on biodiversity & disruption of ecosystem services (climate change)

* Loss of fresh water resources, contamination of of food chains, soil erosion (GEF, 2006)

*Impact on agriculture (12% of Africa's Agric GDP (productivity) (Hummel et al., 2012; UNCCD, 2013b)

* Food insecurity/malnutrition/diseases (Ezeaku & Davidson, 2008; UNCCD, 2013a)

* Climate change mitigation; Increase frequency & intensity of disasters

* Population displacement/migration (livelihood insecurity) (Liehr et al., 2016; Hummel, 2016)

* Conflicts (80% of armed conflicts) (stability, human security) (UNCCD, 2015)

* Human Health (pathogens---Wildlife reservoir)

- Vulnerability/Poverty (income inequality) (Land Degradation)

Source: IPBES (2018)

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Land Critical to Achieving Many International Targets and SDGs…

….but some SDGs compete for same land resources

Land Critical to Achieving Many International Targets and SDGs…

- **UNFCCC text begins**: …Acknowledging that change in the **Earth's** climate…"
  …Aware of the role and importance in terrestrial and marine ecosystems of sinks and reservoirs of greenhouse gases."

- **CBD Aichi Targets (2011-2020):** Strategic Goal A: address underlying causes of biodiversity loss; B: reduce direct pressure on biodiversity; C. Improve biodiversity status of biodiversity by safeguarding ecosystems; D. & E.—all relate to land

- **The REDD + process** (reducing emissions from **deforestation and forest degradation**) including the Warsaw Framework (COP 19 made 7 decision)

- **Paris Agreement,** Article 5: 2. Parties are encouraged to take action to implement and support, ……positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks

What is needed?

A balanced approach

- One that **anticipates new degradation** even as we plan to reverse past degradation
- One that **considers tradeoffs** among competing interests across the landscape
- One that considers aims at bio-diversity conservation that enhances pollination as crucial to food security

LDN provides the framework for this

"……..Unless urgent and concerted action is taken, land degradation will continue to accelerate in the face of continued population growth, unprecedented consumption, an increasingly globalized economy and climate change."
(IPBES, 2018, p.XXXVII)

- Cost of of inaction 3 times higher than cot of action

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Land Degradation Neutrality (LDN)

But what is LDN?

Land Degradation Neutrality:
"a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems" *UNCCD COP12 October 2015*

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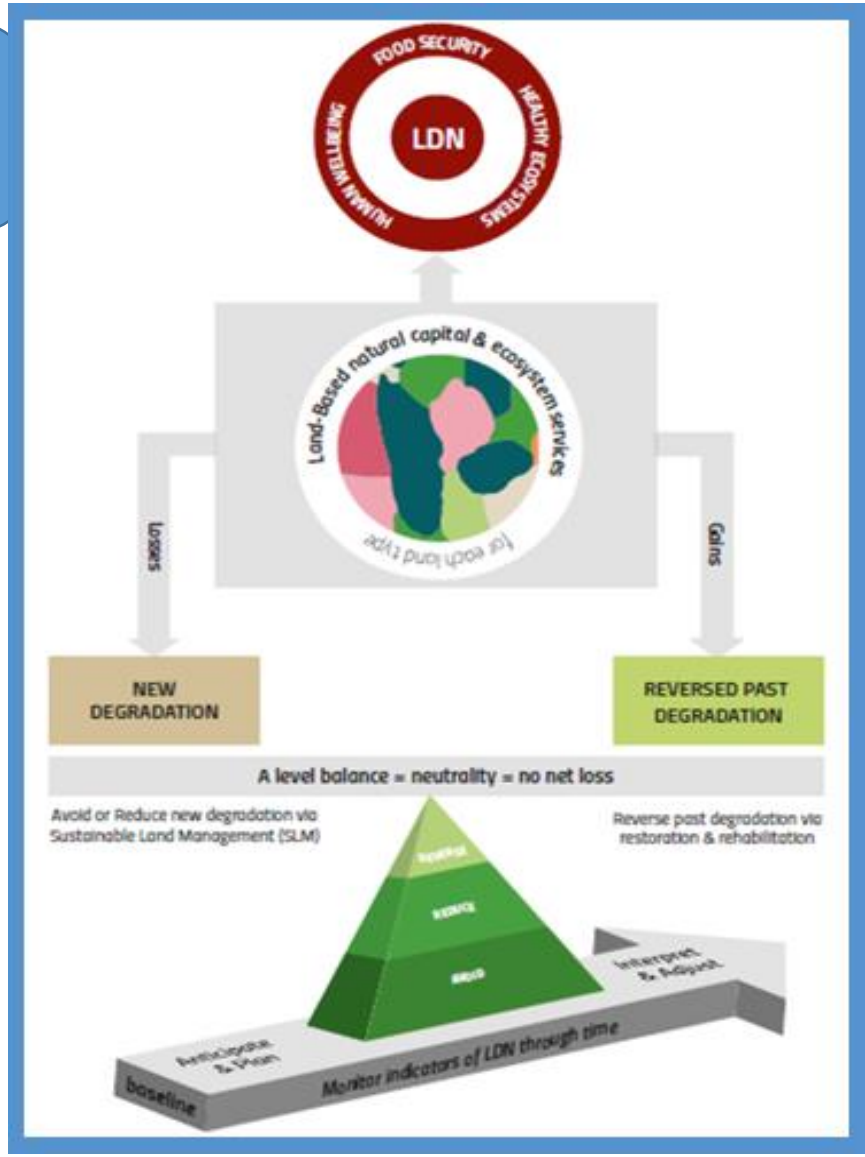

The Objectives of LDN

- Maintain or improve the **sustainable delivery of ecosystem services**
- Maintain or improve **productivity**, in order to enhance **food security**
- Increase **resilience** of the land & populations dependent on the land
- Seek **synergies** with other social, economic and environmental objectives
- Reinforce **responsible** & inclusive **governance** of land.

LDN seeks to maintain natural capital & the ecosystem services that flow from it.

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The Vision of LDN

- **Healthy ecosystems** (=biodiversity conservation critical pollinators & pollination)
- **Human wellbeing**
- **Food security**

The goal of LDN is maintaining or enhancing the land resource base – i.e., the stocks of natural capital associated with land resources & the ecosystem services that flow from them

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UNCCD Support to Countries

- **Drought Initiative:** helps in developing national drought plans (Ethiopia, Ghana, Nigeria, Malawi, Zambia, (Kenya?) - Submitted)
- **LDN Target Setting Programme (LDN-TSP) targets** 122 countries have committed to set LDN targets, 51 African countries (Ethiopia, Ghana, Kenya, Nigeria, Malawi, Zambia)
- **Global Support Programme (GSP)** supports Country Parties by building their capacities for UNCCD reporting
- **Develop LDN transformative programmes and projects to achieve LDN targets** on request form Parties

4 Building Blocks of LDN

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LDN, Biodiversity Conservation and Pollinators

Biodiversity: supports ecosystem functioning including provision of food & formation of habitats

- ✓ Measures the variety of organisms present in different ecosystems; including genetic variation, ecosystem variation, and species variation on the planet

- Biodiversity is an essential component of nature and include all species of plants & all species of animals **(including Pollinators)**
  - ✓ It provides a whole lot of services: from food to medicine; literally helping to maintain all life

- **Pollination:** occurs when animals (pollinators) move viable pollen grains from anthers (the male part of a flower) to receptive & compatible stigmas (the female part of a flower) of flowering plants &, when followed by fertilization, usually results in fruit and seed production (IPBES, 2016, p.15)

- **Pollinators:** Bees, Birds, Bats, Butterflies, Moths, Insects, Beetles, Wasps & other Small Mammals (Pollinator Partnership, 2019)
  - ✓ These visit flowers to drink nectar or feed on pollen & as such transport pollen grains as they move from spot to spot

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Pollinators, Pollination and Food Security

(IPBES Assessment, 2016)

- **Pollinators** play a vital role as a **regulating eco-system service** in nature (90% of flowering plant species depend on transfer of pollen by animals) (IPBES,2016)
- **¾ of global food crops** rely on pollination for yield/quality, contributing **35% of global crop Production**
- Pollinators critical to food production, human nutrition & health, medicines, biofuels, fibers etc **(Food Security & socio-economic wellbeing of societies)** **(Pollinator Partnership, 2019)**
- Majority of pollinator species are wild (Bees widely managed---but still high seasonal loss of colonies)

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Pollinators, Pollination and Food Security

(IPBES Assessment, 2016)

But the **Provisioning, Regulatory, Supporting & Cultural benefits** of ecosystem services **threatened by Land Degradation** (**destruction, fragmentation & degradation of pollinator habitats**)

How does pollination relate to the LDN?

= Reinforces efforts, objectives & vision of LDN (SDG 15.3)

Major threats to Pollinators: Land degradation, land use change, land management intensity, pesticide use & climate change

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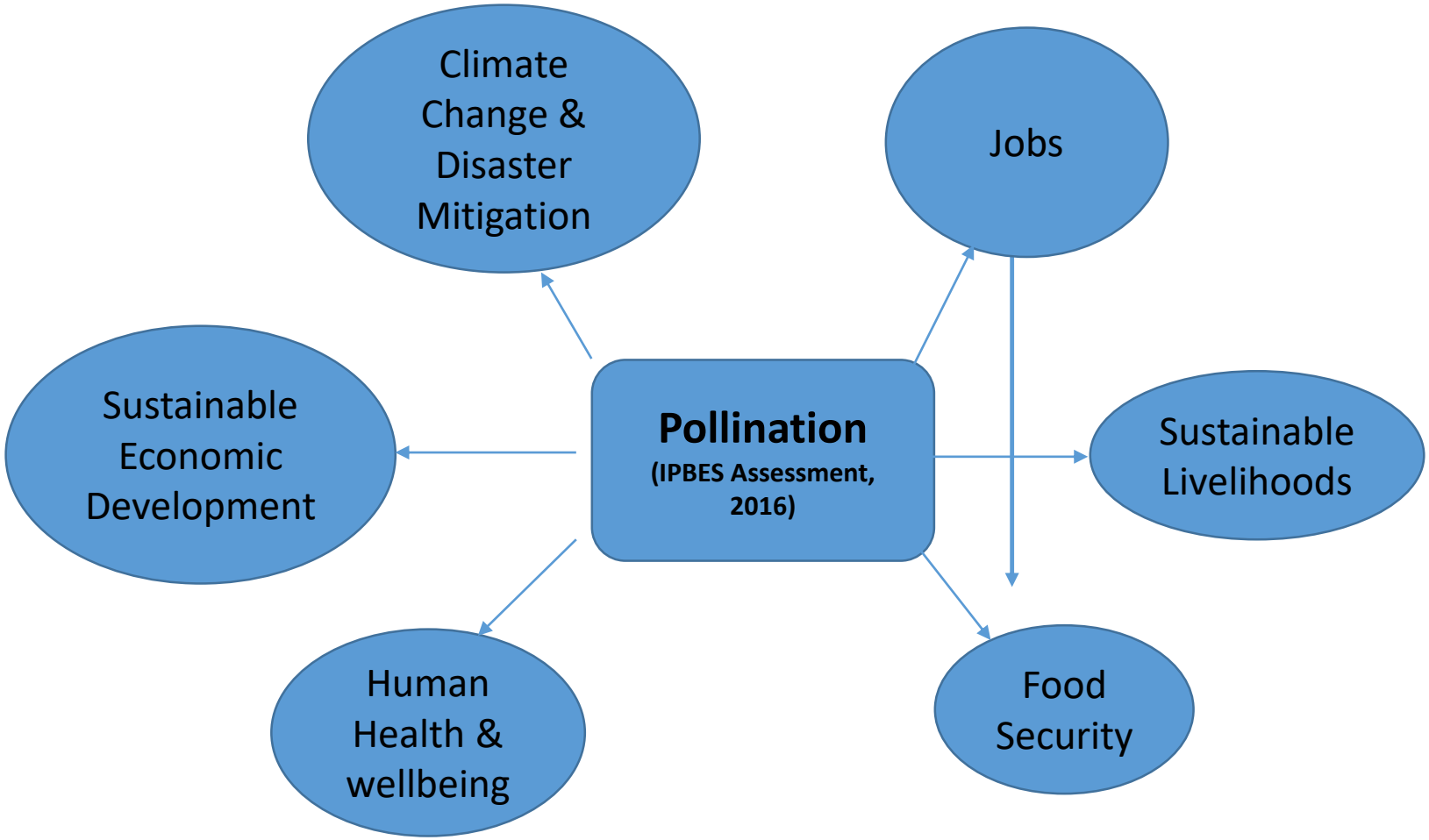
Pollination Business: What does this all mean?



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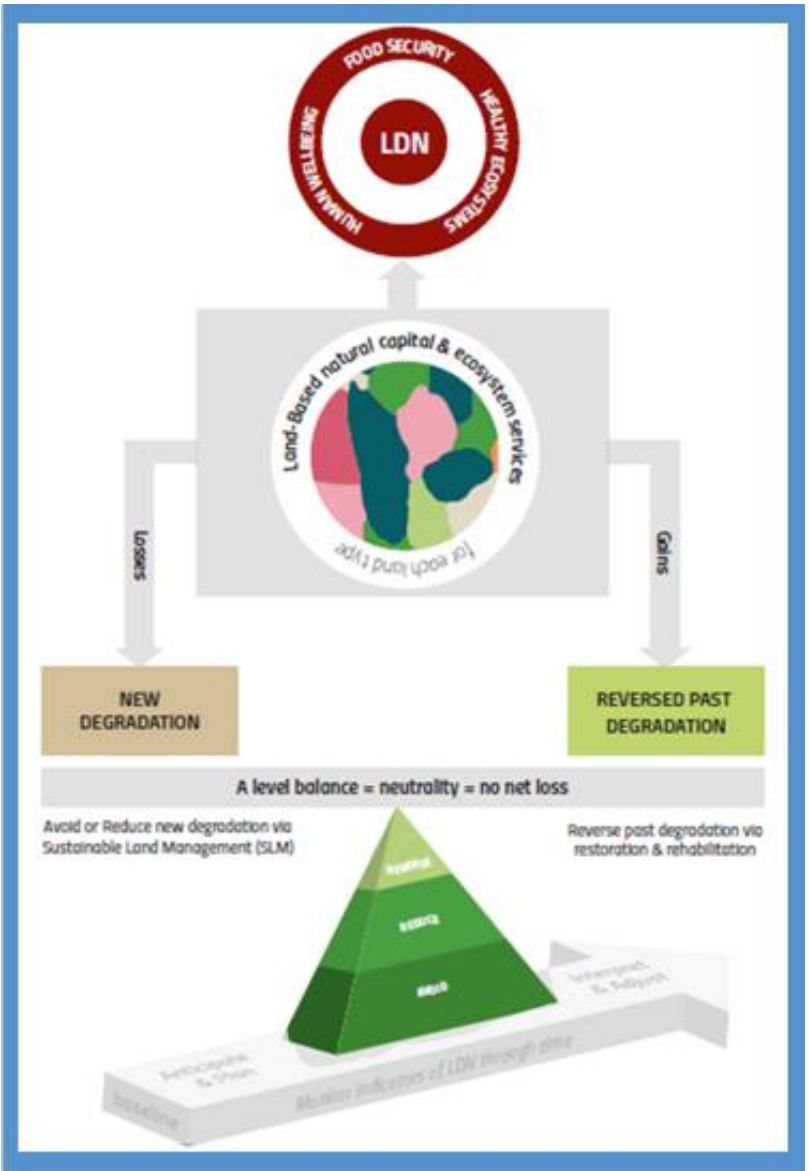
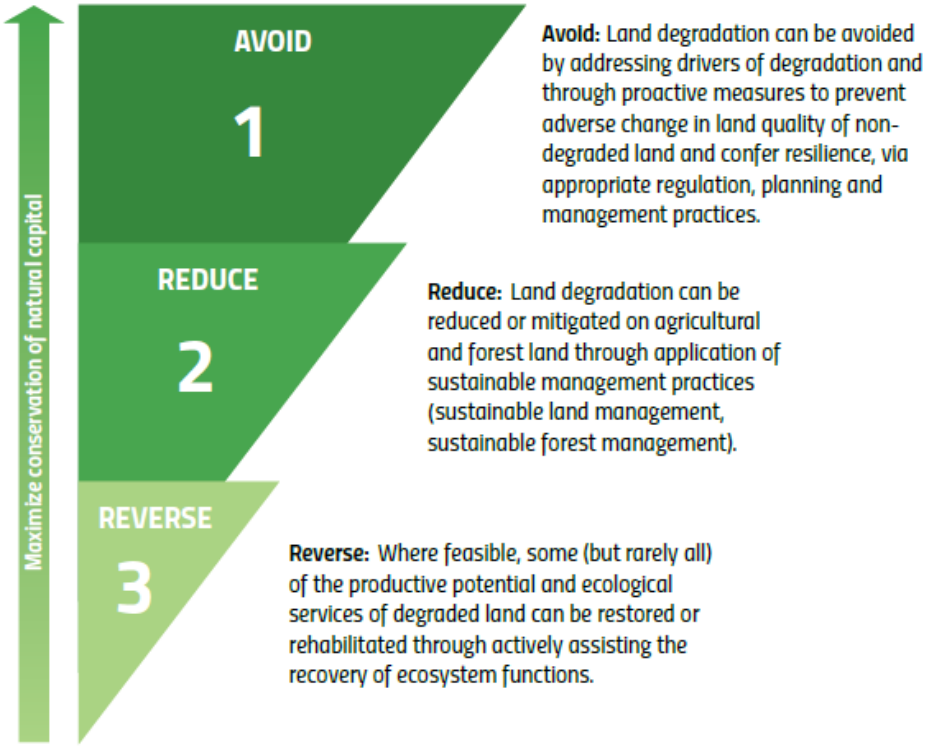
How does this inform LDN Implementation



Response Hierarchy

Prevention is better than cure



Avoid: Land degradation can be avoided by addressing drivers of degradation and through proactive measures to prevent adverse change in land quality of non-degraded land and confer resilience, via appropriate regulation, planning and management practices.

Reduce: Land degradation can be reduced or mitigated on agricultural and forest land through application of sustainable management practices (sustainable land management, sustainable forest management).

Reverse: Where feasible, some (but rarely all) of the productive potential and ecological services of degraded land can be restored or rehabilitated through actively assisting the recovery of ecosystem functions.

How does this inform LDN Implementation

- **Emphasis on Integrated Land Use Planning**: LDN planning (target setting)
  - ✓ Anticipating where degradation is likely for optimal mix of interventions across the landscape to achieve LDN
  - ✓ This will facilitate biodiversity conservation & by extension improve habitats, pollinators, pollination (ecosystem services)----Food security & human wellbeing
  - ✓ Integrated approach that incorporates local institutions, local knowledge & promotes participation (Nkonya et al., 2011)

- **International/multilateral agreements:** provide the framework for action to avoid & reduce land degradation, & promote restoration
  - UNCCD; 2030 SDGs (SDG 15.3): LDN; CBD; UNFCCC; Ramsar Convention….. etc

- **Positive incentives & reward for SLM practices:** Land users must receive direct benefits from preventing or mitigating land degradation (IPBES, 2018).
  - ✓ Sustainable Agriculture: Ecological Intensification, Ecological Infrastructure, Strengthening existing farming systems.

- **Effective monitoring strategies, verification systems & baseline data socio-economic & biophysical variables**

- **Creating synergies in policy & efficient coordination across ministries, gov't agencies & regulatory bodies critical to addressing land degradation** (UNCCD, 2013a)

What is LDN in essence ?

Integrator and accelerator of SDGs

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Thanks for your Attention

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