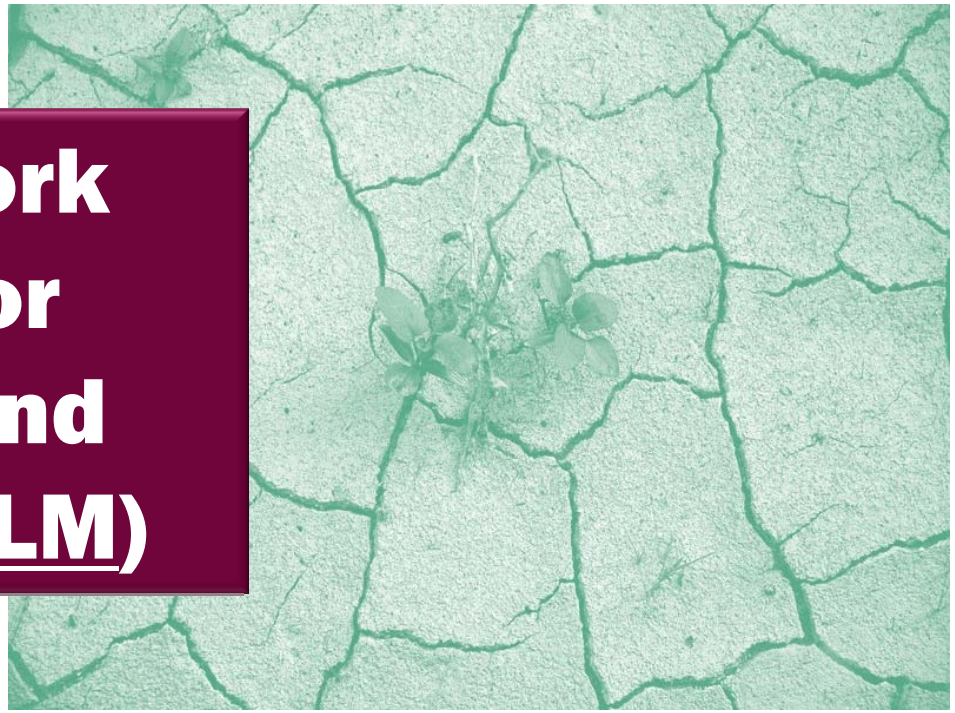
Policy framework and options for Sustainable Land Management (SLM)

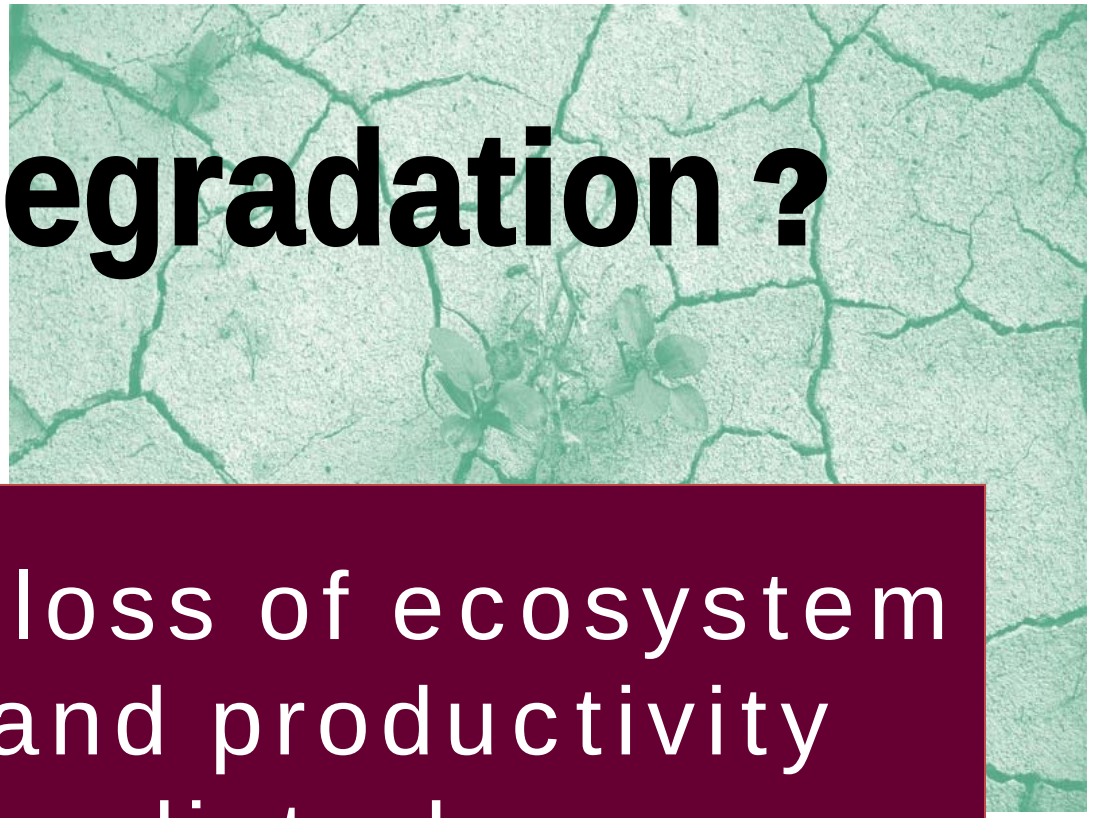


IPM-CSD17 – 23 Feb. 09 - NY

Overview

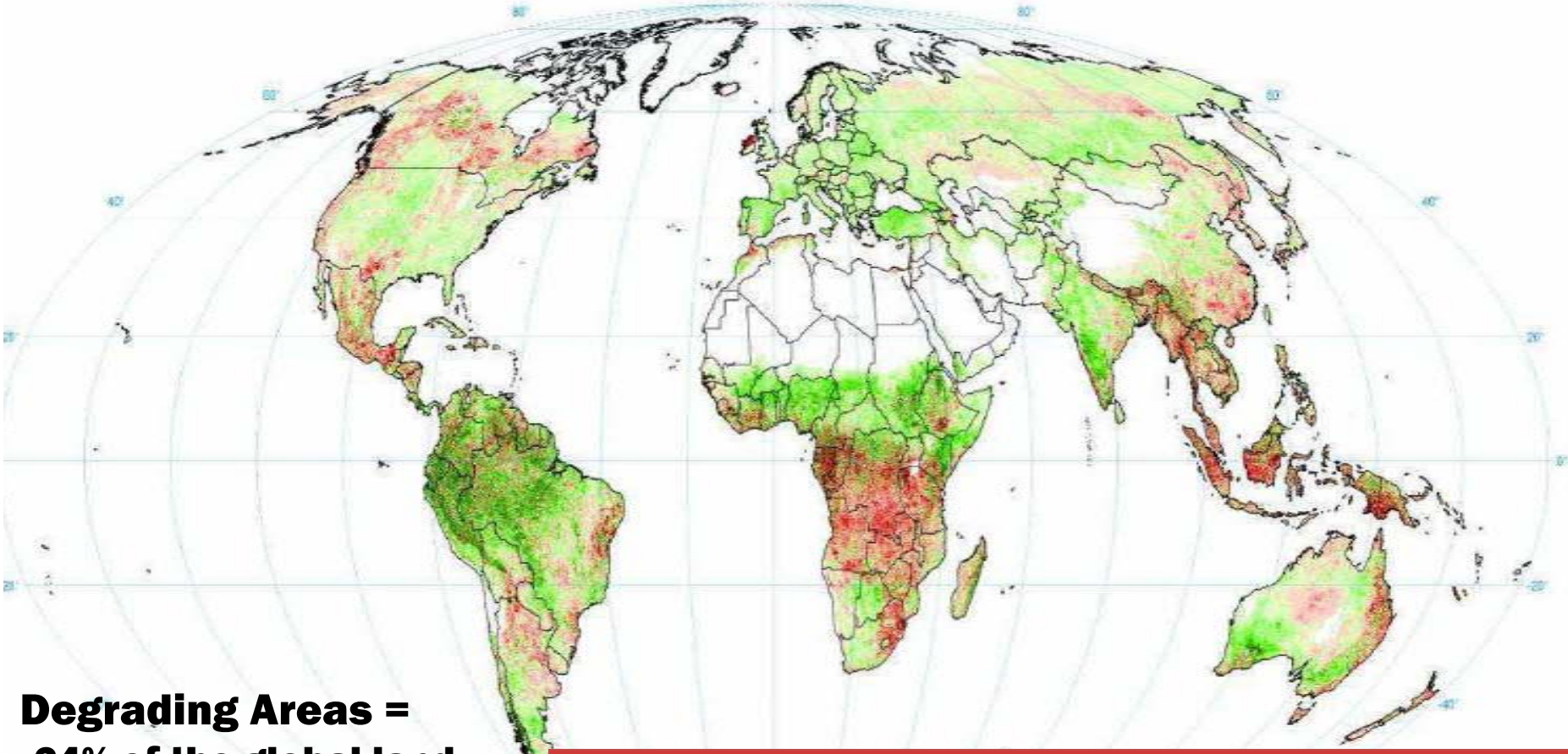
- **The scope of Land degradation (LD)**
- **The major failures in tackling LD**
- **The role of land improvement in coping with some today's global challenges**
- **A policy framework**
- **A durable option for SOC sequestration**

Land degradation ?

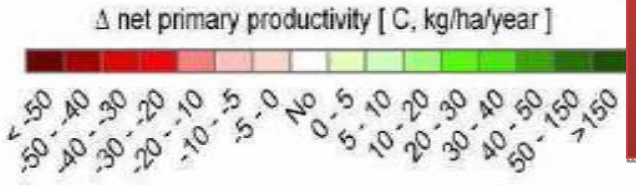


"Long-term loss of ecosystem function and productivity caused by disturbances from which the land cannot recover unaided"

The Scope of Land Degradation – Cf. GLADA Report, 2008



Degrading Areas =
- **24% of the global land**
- **1,5 billion People affected**



NPP: Declining trend in 24 % the global land area
- **78 % of degrading land is in humid regions**
- **8 % in the dry sub-humid,**
- **9 % in the semi-arid**
- **5 % in arid and hyper-arid regions**

The Failures in tackling LD

Land degradation is predictable and to some extend reversible

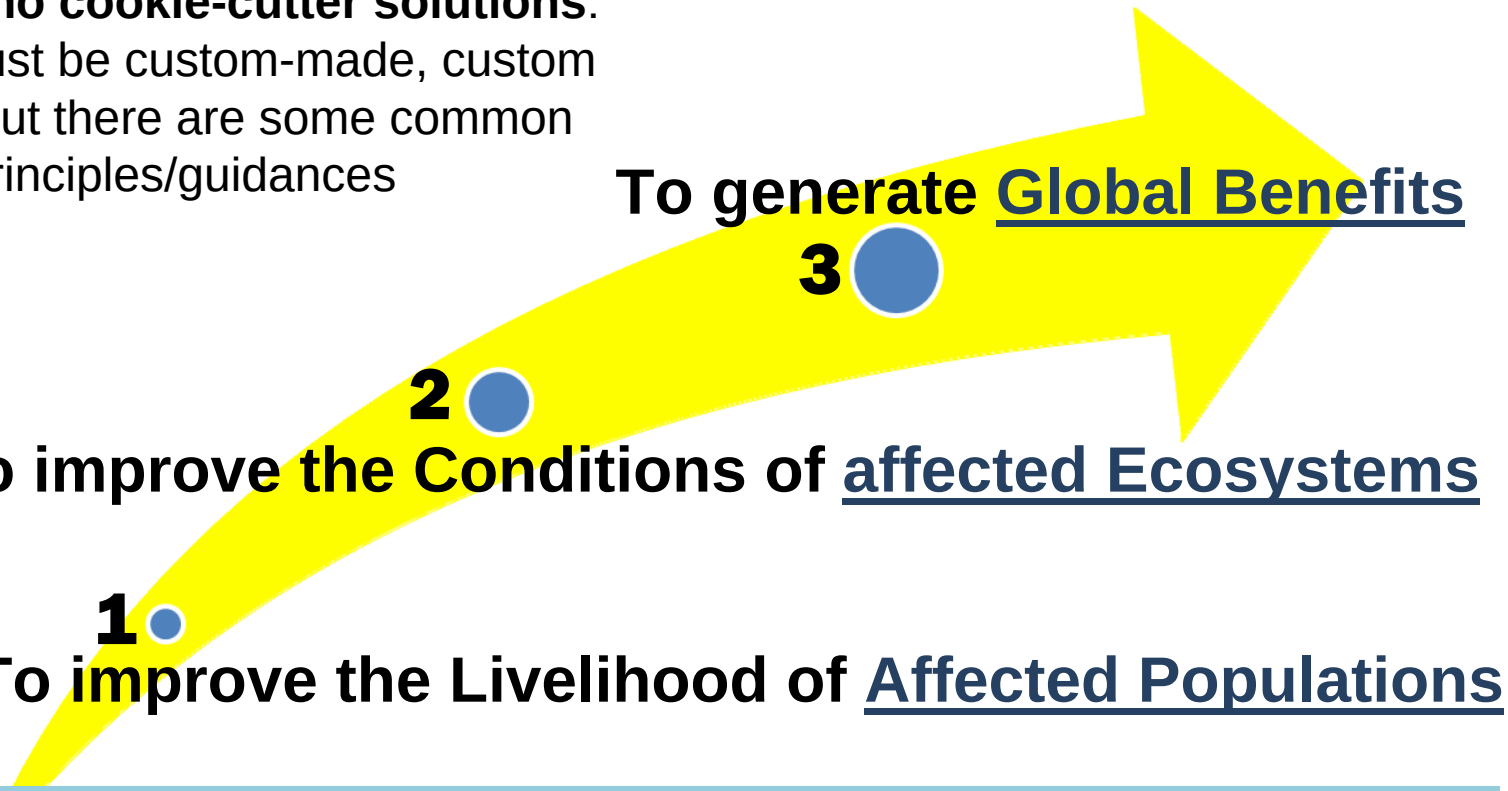
To a large extend, its severe socio-economic impacts on affected populations livelihood are the result of public and even global policy failures

1. **Failure to scale up the good practices**
2. **Failure to diffuse the available information, knowledge & technologies**
3. **Failure to mainstream at the national/local levels**
4. **Failure to monitor LD & land improvement**
5. **Failure to mobilize the required resources**
6. **Failure to converge from the global to the local (all stakeholders in partnerships & synergies)**

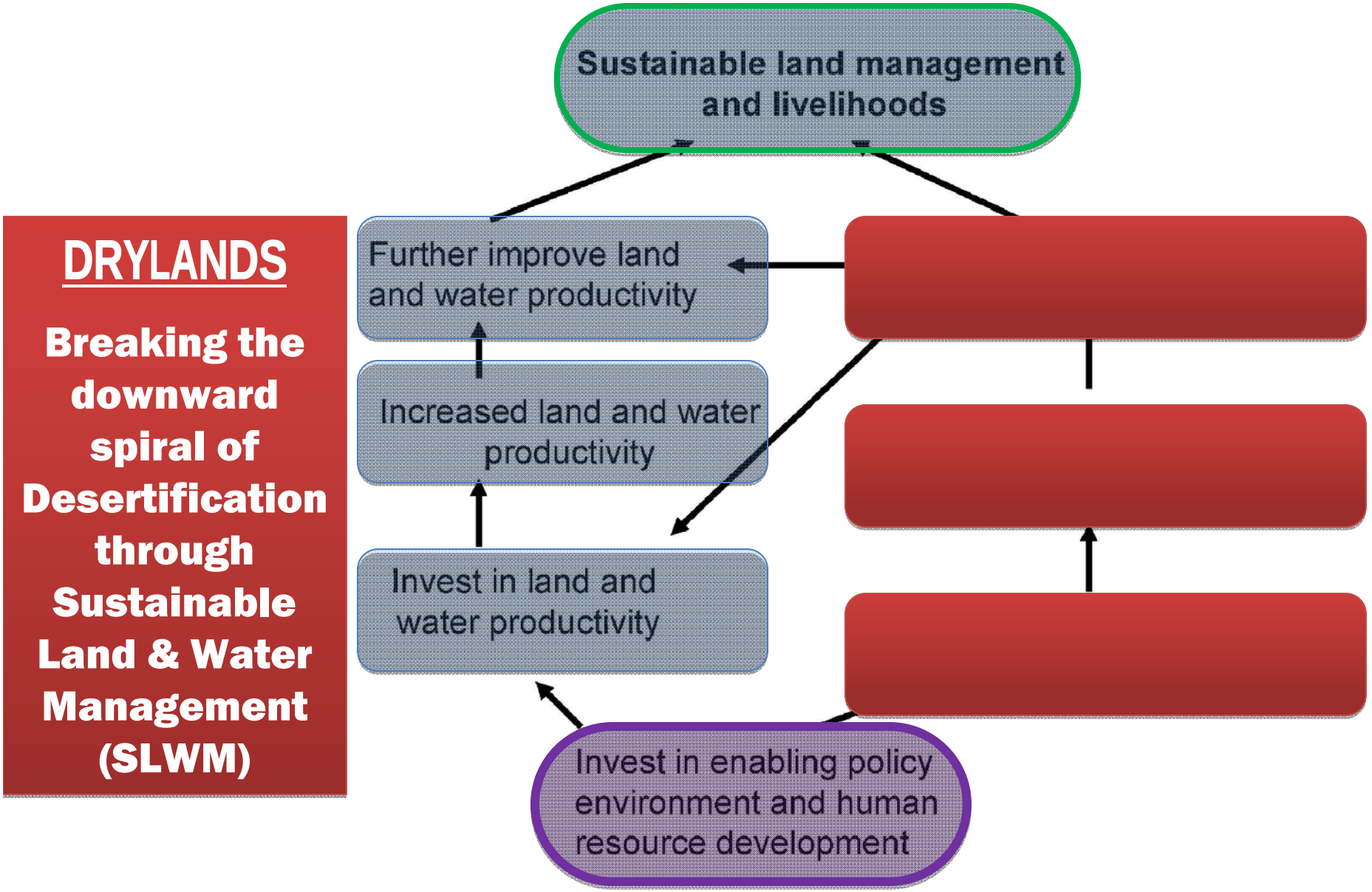
Policy framework to combat Land Degradation through SLWM

from the UNCCD ten-year Strategy

There are no cookie-cutter solutions: Policies must be custom-made, custom tailored. But there are some common principles/guidances



4 To mobilize resources through building effective partnerships between all stakeholders



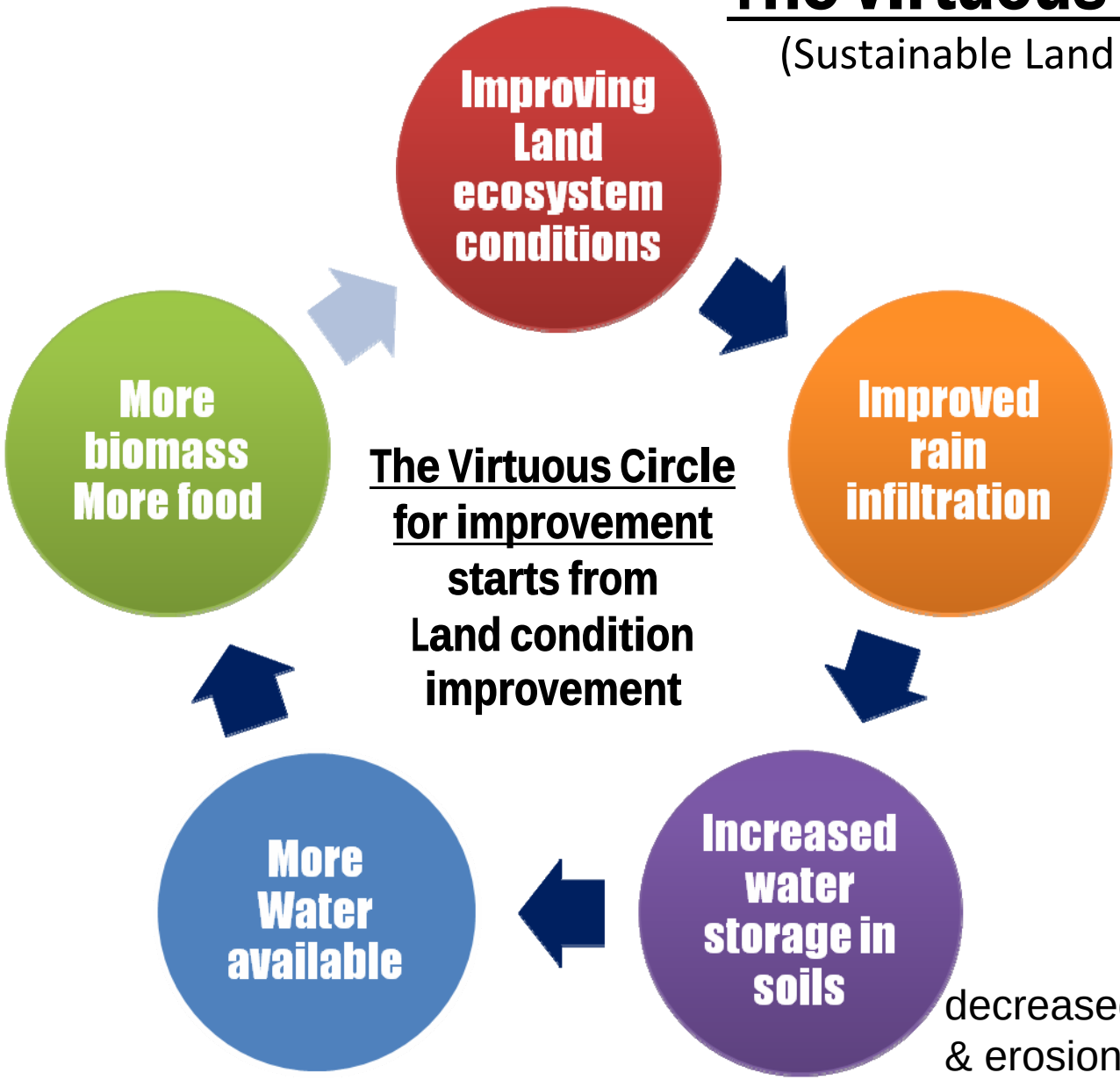
Pathways for attaining SLWM in drylands

through consideration of agricultural and alternative livelihoods

(adapted from Adeel and Safriel).

The virtuous circle of SLWM

(Sustainable Land & Water Management)



decreased flooding & erosion

Land, our untapped potential to substantially mitigate GHG

The land has an unparalleled capacity to hold carbon and to act as a sink for GHG

- **Carbon as plant organic matter is sequestered in soils (SOC)**
- **Increasing SOC enhances soil fertility, crop productivity, nutrient bioavailability, and soil water retention, among other benefits**
- **As most agricultural soils have lost 50 to 70% of their original SOC pool they represent :**
  - **a considerable carbon sink if efforts are made to restore SOC,**
  - **but also a huge source of GHG if soil management and deforestation rates are not changed**
- **Conventional means to increase soil carbon stocks depend on climate, soil type & site specific management**
- **The drawback of conventional carbon enrichment is that this carbon-sink option is of limited duration (50 to 100 years) and the new carbon level drops rapidly as soon as the careful management is no longer sustained.**

A durable option for SOC sequestration:

The BIOCHAR a simple & costless option for mitigation

Biocharcoal option is based on the discovery of ancient anthropogenic soils of the Amazon Basin called *Terra Preta de Indio.* Biochar is:

- **Charcoal-based soil amendment produced by pyrolysis (carbonisation or heating in the absence of oxygen) of waste biomass**
- **Carbon negative option. When added to soils, biochar creates a virtually permanent terrestrial carbon sink with a mean residence time of many centuries**
- **Confers long-term benefits (environmental & sustainable agronomic benefits)**
- **Offers an opportunity to combine renewable energy production, carbon sequestration & soil restoration**
- **Is scalable and applicable in both developing & developed country contexts**

A Biochar experiment

Producing sticks of charcoal to improve seedlings

Experiment's resources:
•a natural draft kitchen stove
•to boil up 2 liters of water with
•1 kg of Bambou's sticks

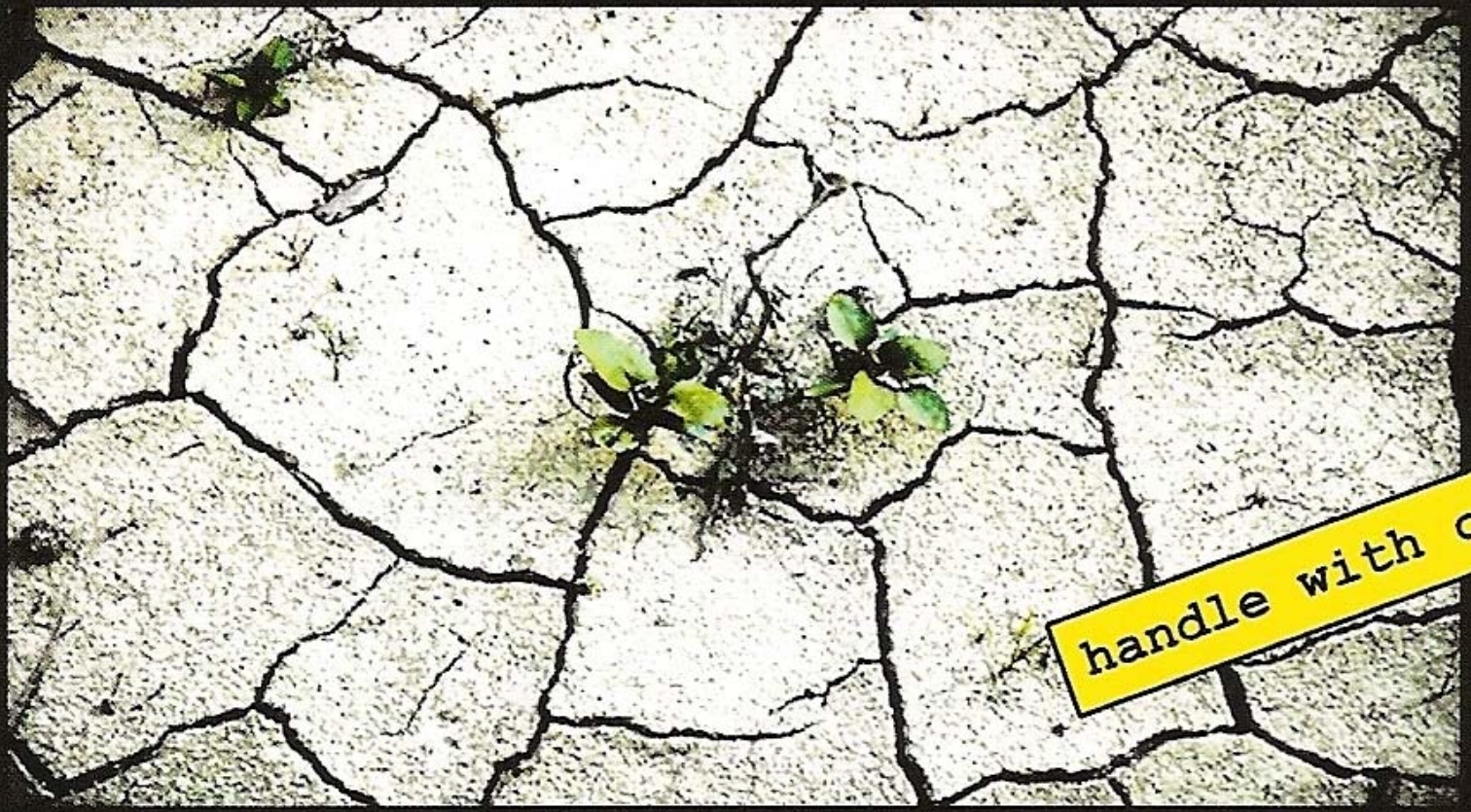
Advantages of Biochar Carbon Sequestration

1. Biochar transforms the carbon from the active (crop residus or trees) to the inactive carbon pool
2. No competition between SOC restoration, bio-fuels and food production
3. Generation of carbon-negative energy from cooking (kitchen stoves) to decentralized small scale projects
4. Fast SOC buildup beyond the maximum sequestration capacity
5. Reduced deforestation because reforestation and recuperation of degraded land will gain magnitude
6. Easy accountability: the Biochar carbon sink is easily quantifiable

Policy actions to promote Biochar

1. Raising awareness on the role of the land on mitigation and adaptation to climate change and in particular the importance of Biochar in enhancing the sequestration of carbon in the soils
2. Inclusion of biochar in the CDM along with currently already included afforestation and reforestation
3. Revision of the additionality rules in order to take into account the fact that biochar is a permanent means of carbon capture that has more value than the potentially reversible "A/R"
4. Increase the level of CERs (Certified Emission Reduction) that an annex I Party can use towards meeting the Kyoto Protocol targets from the current 1% to a higher percentage. This would result in large financial flows for both mitigation and adaptation to developing countries where use of this technique would result in the highest returns, due to the high losses of SOC

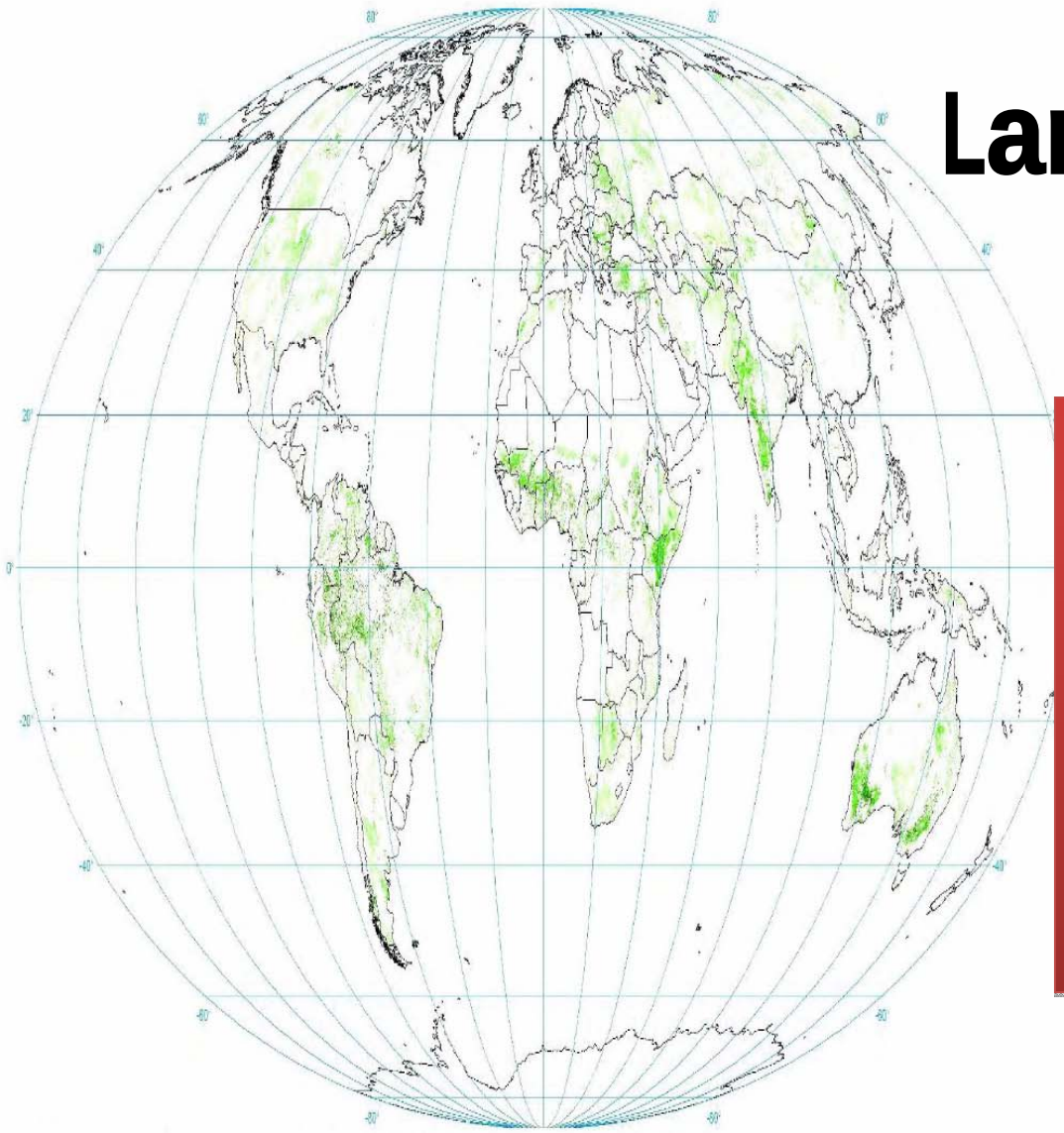
Feed Me to Feed You



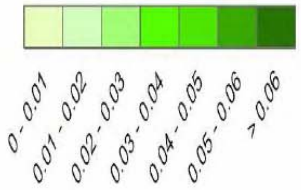
World Day to Combat Desertification
17 June

Land improvement

Cf. GLADA



Improvement: positive trend in climate-adjusted sum NDVI



NDVI = normalized difference vegetation index

Mollweide Projection
Central Meridian: 0.00

Land improvement has been identified in <u>15.7 %</u> of the global land area.

The role of the Land in coping with today's Global Challenges and Crisis

1. **Poverty eradication**
   - Improving livelihood through pro-poor policies on Sustainable Land & Water Management (SLWM)
2. **Food crisis & Hunger**
   - Land improvement at the core of all long term strategies
3. **Water scarcity**
   - Sustainable water management through SLM = SLWM
4. **Climate change**
   - UNCCD as a framework for adaptation, mitigation & resilience
5. **Biodiversity**
   - Biodiversity conservation through improvement of land ecosystems' conditions
6. **Avoided Deforestation**
   - SLM as an alternative to deforestation
7. **Renewable Energies**
   - Opportunities to invest in/for the people living in the degraded lands
8. **Forced migrations**
   - Avoiding forced migrations through improving land productivity