Ecosystem Services in the Drylands
The essential capital for the poorest

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Outline

1. Desertification?
2. How Desertification is related to ecosystem services & human well-being
3. Overview of the dependence of the poor on ecosystem services
4. Trends in ecosystem services
5. Management strategies & capacities gaps
"Desertification means land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors" (Cf. the UNCCD)

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

Sustainable land management addresses the changes in land cover and land use that are needed to maintain and enhance ecosystems functions and services
Causes Desertification

![Graph showing causes of desertification by continent.]

*Cause de la désertification par continent*

*Source: CSFD, dossier 1*
The best potential for production improvement is in the drylands.
Desertification & Ecosystem Services

- “Desertification is potentially the most threatening ecosystem change impacting livelihoods of the poor.
- Persistent reduction of ecosystem services as a result of desertification links land degradation to loss of human well-being” (MA)
Key Drylands Ecosystem Services

Cultural Services

Nonmaterial benefits obtained from ecosystems
- recreation and tourism
- cultural identity and diversity
- cultural landscapes and heritage values
- indigenous knowledge systems
- spiritual, aesthetic, and inspirational services

Supporting Services

Services that maintain the conditions for life on Earth
- soil development (conservation, formation)
- primary production
- nutrient cycling
**Provisioning Services**

*Goods produced or provided by ecosystems*

- provisions derived from biological productivity: food, fiber, forage, fuelwood, and biochemicals
- fresh water

**Regulating Services**

*Benefits obtained from regulation of ecosystem processes*

- water purification and regulation
- pollination and seed dispersal
- climate regulation (local through vegetation cover and global through carbon sequestration)
The virtuous circle of SLWM
(Sustainable Land & Water Management)

The Virtuous Circle for improvement starts with the improvement in land conditions.

- Better Land condition leads to:
  - Improved rain infiltration
  - Increased water storage in soils
  - More water available

These improvements result in:
- More biomass
- More food
- Decreased flooding & erosion

This virtuous cycle continues to improve land conditions.
1. All of humankind is dependent on ecosystem services, but the poor are disproportionately so.

2. Moreover, direct dependence on services from ecosystems is highest amongst people living in arid and semi-arid lands where alternative livelihood options are often limited and environments are particularly fragile and risky.

3. They rely on ecosystem services for subsistence needs, food security, as inputs into a wide range of livelihood activities and for cash income.
Changes in agricultural productivity by 2080 due to Climate change

- Source “Environmental Food Crisis” UNEP – 2009

Adaptation to climate change is crucial especially in the Drylands

- high dependence on scarce natural resources (land, water and biomass),
- high exposure to droughts and floods that are forecast to increase with climate change, the vulnerability of Drylands is likely to deepen, and agricultural productivity is forecasted to shrink by up to 50% by 2080.
Poverty eradication
Improving livelihood through pro-poor policies on Sustainable Land & Water Management

Food Security
Land availability & soil fertility improvement at the core of all long term strategies

Drought & Water stress
Improving water availability & quality through sustainable land water management

Climate change
Land is a win-win context for adaptation, mitigation & resilience building

Biodiversity
Biodiversity conservation through improvement of land ecosystems’ conditions

Avoided Deforestation
SLM & Land rehabilitation / reclamation as an alternative to deforestation

Bio Energies
Opportunities to invest in/for the people living in the degraded lands & Provide alternative to Biomass

Avoiding Forced Migrations
Through improving water availability and land productivity
Conclusions
Management strategies & capacities gaps

1. Benefits to the poor by supporting ecosystem services at all scales.
2. Ecosystem services are being significantly compromised on a wide scale.
3. Need to assess dryland ecosystems services from a drought risk reduction approach
4. Water is the key ecosystem service in arid and semi-arid areas.
5. Inverse relationship between human well-being and the dependence on ecosystem services – causing a downward spiral of increasing poverty and ecosystem degradation.
6. Policy interventions can serve to change the understanding, attitudes and values
7. Inadequate understanding and appreciation of ecosystem services is resulting in negative trade-offs.
8. Share of national budgets allocated to ecosystem management functions is small
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ENHANCES LIFE EVERYWHERE