THE ECONOMICS OF
LAND DEGRADATION

The Value of Land

Quick guide to the report

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The Value of Land

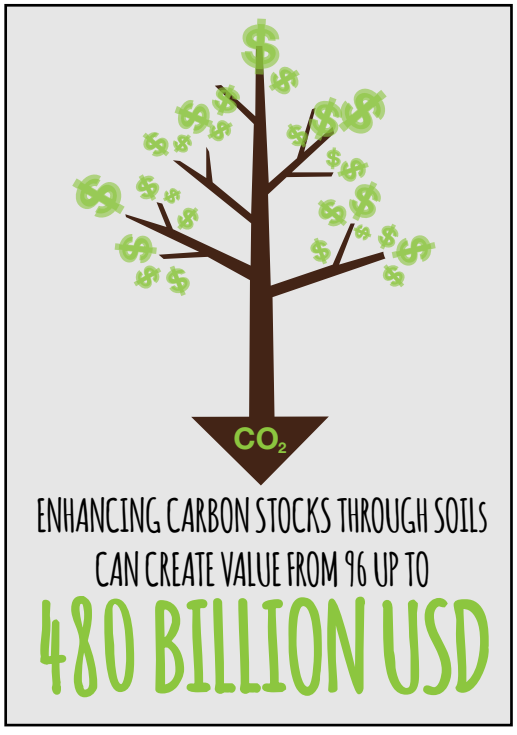
Prosperous lands and positive rewards through sustainable land management

What is the situation?

- 10–20% of the Earth's drylands are degraded. Estimated economic loss = USD 6.3–10.6 trillion/yr.
- 52% of land used for agriculture worldwide is moderately or severely affected by soil degradation.
- The percentage of the Earth's land stricken by serious drought doubled from the 1970s to the early 2000s.
- More than one third of the land in Africa is under threat of desertification as well as one third of the population.
- 24% from GHG emissions are from agriculture, forestry and other land use.
- Changes to land cover in the past twenty years have reduced the value of the annual flow of ecosystem services by USD 4–20 trillion/yr.
- This estimate of the global value of the world's ecosystem services has been estimated to amount to USD 145 trillion/yr.
- Changes in land cover that have occurred in the last 15 years have resulted in a reduced estimate of the total value of the world's ecosystem services to USD 125 trillion/yr. This represents a loss of roughly USD 20 trillion annually due to land cover change alone.
- The global cost of lost ecosystem service values estimated to be USD 6.3–10.6 trillion/yr.
- The lower estimate of lost Ecosystem Service Values of USD 6.3 trillion/yr is more than five times larger than the entire value of agriculture in the market economy. The ecological economics of land degradation thus indicates that the economics of land degradation is about a lot more than agriculture.

What is at stake?

- Loss of ecosystem services through land degradation costs USD 43,400–72,000 per square km globally, every year.
- Ecosystem service loss from land degradation costs USD 870–1,450 per person/yr – accumulated this exceeds the GDP of 15 countries.
- Taking action even in just preventing top soil loss to increase crop productivity can have benefits of nearly a trillion USD over the next 15 years in Africa alone. Similarly, the cost of inaction on this issue will be almost two trillion USD over the same period.
- Agriculture only captures a small percentage of global GDP, but lost ecosystem service values are between 10–17% (USD 63 trillion). Agricultural lands provide a significant output of ecosystem services not accounted for if only dollar values of agricultural products are included (roughly USD 1.7 trillion/yr, or 2.8% of the global annual GDP).
- 50 million people will face displacement in the next decade as a result of desertification and land degradation. That many migrants assembled would constitute the world's 28th largest country by population.
- Land issues have played a major role in 27 major conflicts in Africa since 1990.
- A 40% drop of productivity was caused in Burkina Faso following concerns regarding land disputes.
- To provide an idea of the scale of impact, more than half of the land base in many regions (sub-Saharan Africa, southern America, Southeast Asia, northern Europe, etc.) is constrained by poor soil quality, and 12 million additional hectares of land are degraded annually, where 20 million tons of grain could have grown instead.



What will happen?

By comparing the economic costs of action and the benefits of action, impacts on human well-being and the long term effects of decisions, one is equipped to choose sustainable land management solutions. In all ELD studies to date, the benefits of taking action have proven to be more rewarding economically than the costs of inaction.

- Adopting sustainable land management could deliver up to USD 1.4 trillion in increased crop production.
- The returns on investment from ecosystem restoration are high – 50% for tropical forests, 20% for other forests, 42% for shrublands, and 79% for grasslands over a 40 year time period.
- The adoption of sustainable agroforestry measures in Mali is estimated to create a USD 13 benefit for every dollar invested.
- Taking action against nutrient loss caused by soil erosion over 105 million hectares would save up to USD 62.4 billion in net present value over the next 15 years. The estimate is based on an ELD study conducted across 42 countries in Africa.
- Enhancing Carbon stocks through soils can create value up to USD 480 billion.
- In Jordan, the benefits of adopting sustainable land management techniques in a ~380.000 ha basin would amount to USD 203.1–461.2 million.
- Economic rates of return from 12% to over 40% have been found for a number of projects including soil and water conservation (Niger), farmer-managed irrigation (Mali), forest management (Tanzania), farmer-to-farmer extension (Ethiopia) and valley-bottom irrigation (northern Nigeria and Niger). Economic returns of over 40% are on record for small-scale, valley bottom irrigation. An applied integrated sustainable land use and reforestation scenario developed by IUCN for Sudan shows potential for an additional 10 tons of below and above ground CO_2 equivalent sequestration per hectare per year. Their analysis suggests the avoided damage cost to the global society is in the order of USD 867 per hectare.

Soil counts – preserve it!

What are necessary preconditions?

- With a 70–100% increase of food production needed by 2050 in order to meet global demands of increasing populations and declining crop productions, sustainable land management must become a primary focus of investments, to the order of USD 30 billion annually.
- Policies that fail to take a holistic approach to valuing ecosystem services can result in unforeseen social & economic costs.
- In China, the probability of investments increased by 76% with land registration, while Nicaragua experienced over 50% of productivity increases after land titling
- Sustainable land management can be facilitated through a range of instruments, from state land ownership and regulatory mechanisms to more incentive-based approaches, including financial instruments (e.g., subsidy reform, or tax breaks) and the development and enhancement of new markets for different ecosystem services.
- A holistic approach to valuing ecosystem services must be adopted for policy making.
- Land degradation issues need to be mainstreamed into intersectoral development frameworks, and strategies need to take into account cultural implications that impact livelihoods.
- Communications must be tailored to meet different stakeholders' needs, involve two-way dialogues at national and local levels, and be made available, accessible, and visible to all in a timely way.
- Partnerships should be fostered between government, civil society, private sector, international, and regional actors, in order to build multi-stakeholder teams that allow resource, learning, governance and knowledge gaps to be addressed, enabling SLM. This can be facilitated within the ELD Initiative.
- National ELD-champions in ecosystem service valuations and accounting should be built.
- Investments by the private sector in sustainable land management are not only critical to the future health of the planet, but are also economically rewarding across all sectors. For instance, using already-degraded lands in Indonesia for sustainable palm oil development instead of clearing rainforests can see internal rate of returns increased to 16%, with an added bonus of doubling palm oil production.

THE ECONOMICS OF LAND DEGRADATION

ELD Initiative Mission Statement

Through an open inter-disciplinary partnership:

- We develop a holistic framework for the consideration of the economic values of land in political decision-making processes;
- We build a compelling economics case for economic benefits derived from sustainable land management from the local to the global level;
- We estimate the economic benefits derived from adopting sustainable land management practices and compare them to the costs of these practices;
- We sharpen awareness of the socio-economic value of land and related ecosystem services;
- We will propose effective solutions, policies, and activities to reduce land degradation, mitigate climate change, and deliver food, energy, and water security worldwide.

More information at:
www.eld-initiative.org

For further information and feedback please contact:
ELD Secretariat
Mark Schauer
c/o Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
Friedrich-Ebert-Allee 36
53113 Bonn (Germany)

T + 49 228 4460 3740
E eld@giz.de

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