Land degradation

- For thousands of years, people have modified, degraded and destroyed natural ecosystems.
- In 1950, some 115 million square kilometers of the Earth´s surface were undegraded, vegetated land.
- Just 40 years later, almost 9 million square kilometers – an area as large as China – were classified as „moderately degraded“ with greatly reduced agricultural productivity.
- A further 3 million square kilometers were „severly degraded“, having lost almost completely their original biotic functions.
- Almost 100 000 square kilometers are beyond restoration…

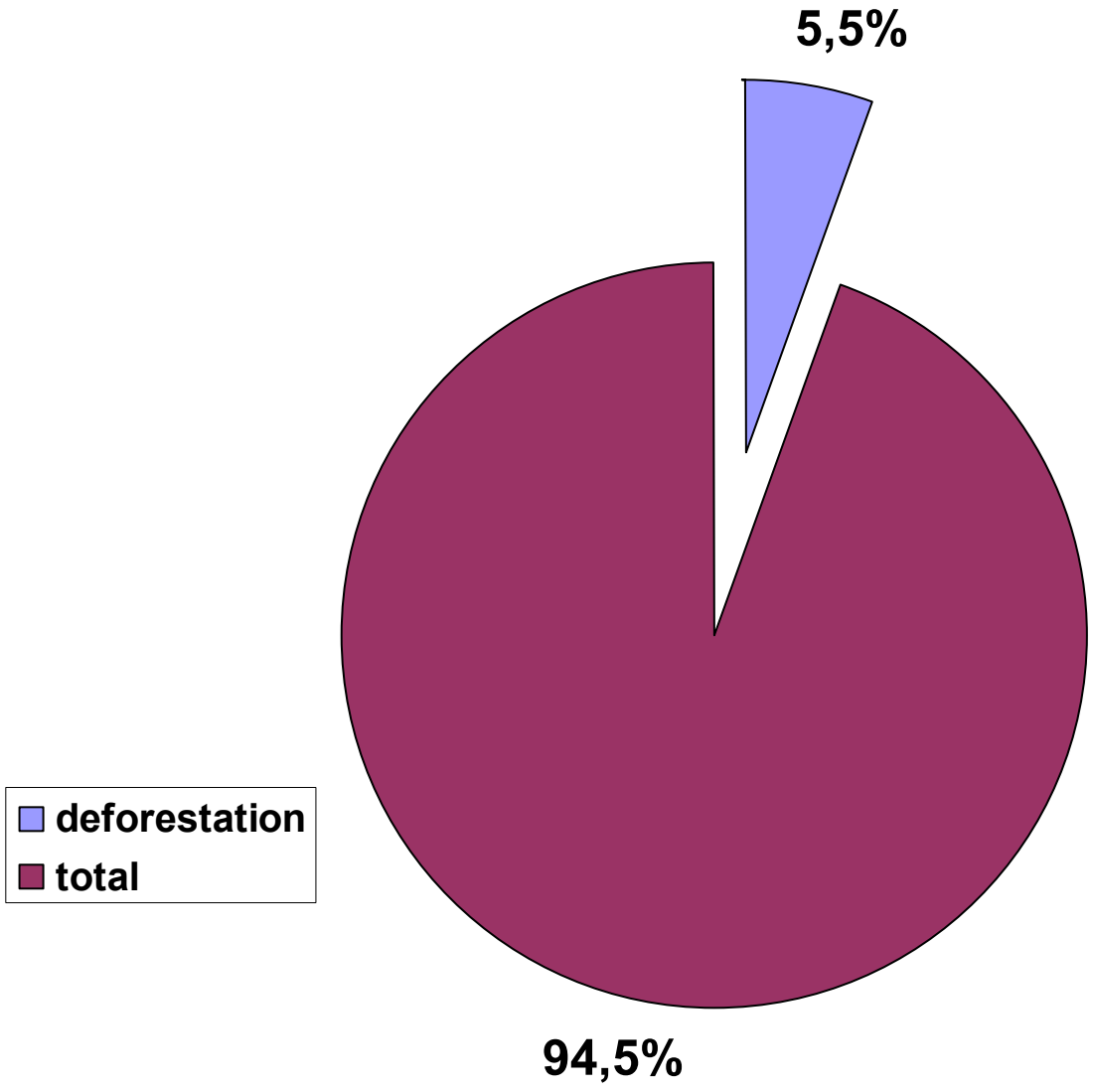
Quelle: FAO, 2001

Land degradation

- „the temporary or permanent decline in the productive capacity of the land“ (UN/FAO)
- „the aggregate diminution of the productive potential of the land, including ist major uses (rain-fed, arable, irrigated etc.), ist farming systems (e.g. smallholder subsistence) and ist value as an economic resource (also FAO)

Quelle: FAO, 2001

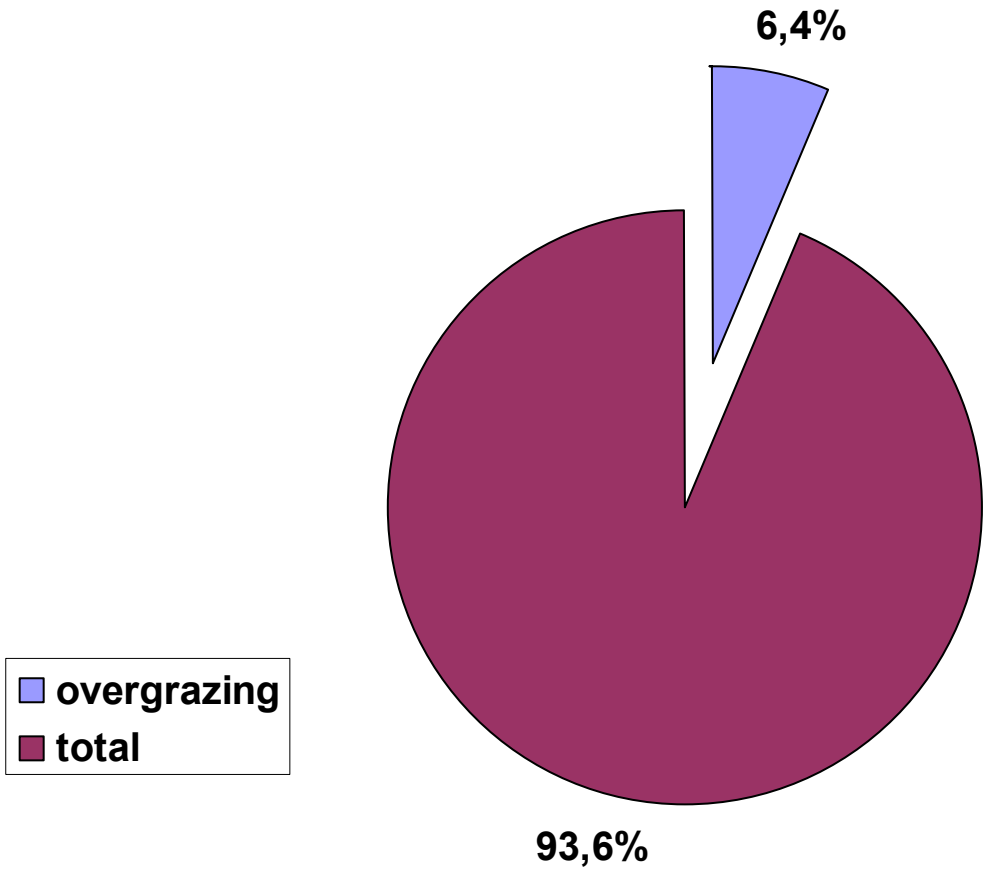
Land degradation by deforestation



- between 1975 and 1990, more than 2.2 million square kilometers were destroyed, mainly to provide land for food production.
- worldwide, tropical forests are being cleared at a rate of about 1 % each year.

Quelle: FAO, 2001

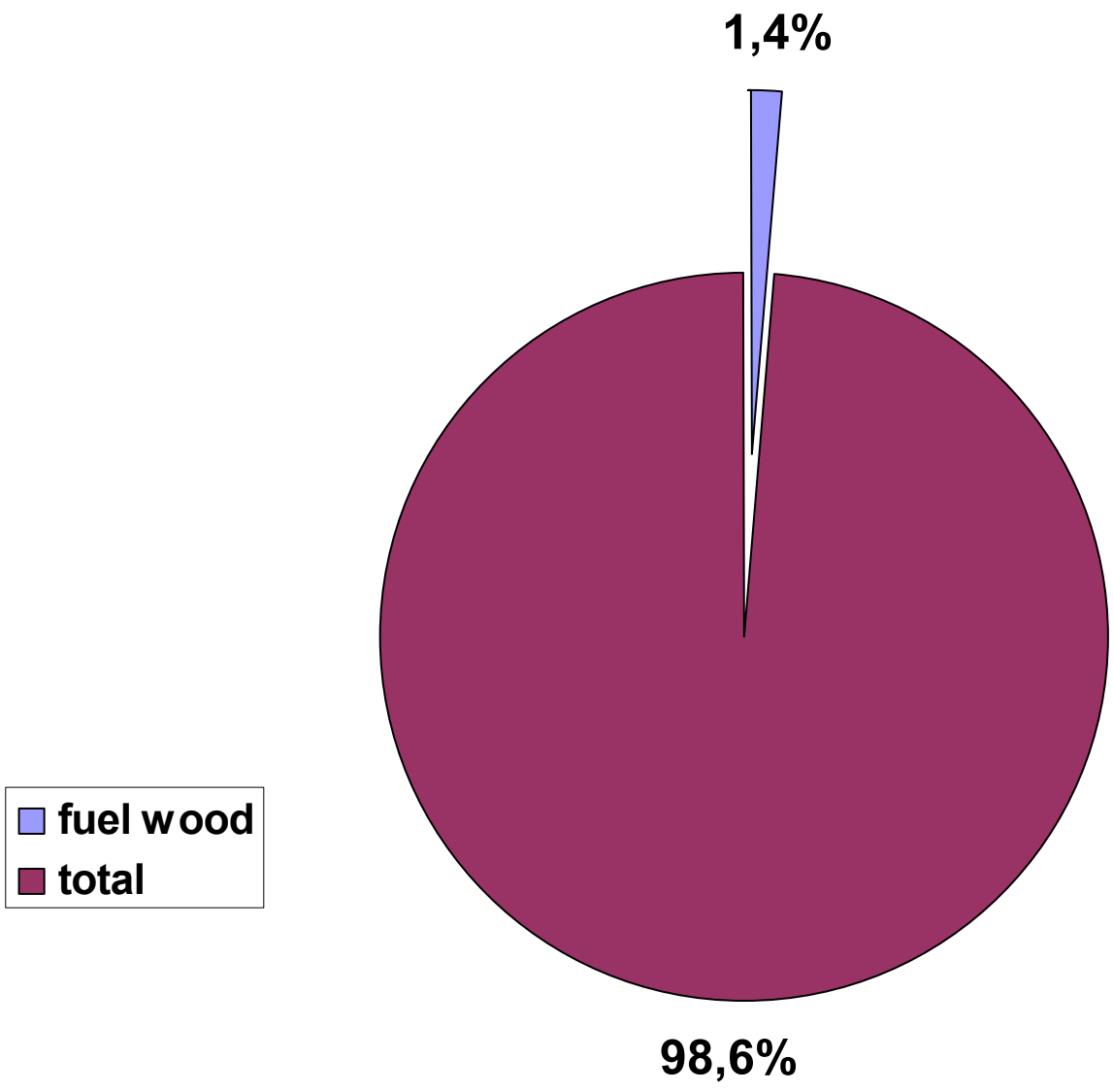
Land degradation by overgrazing



- overgrazing has damaged 20 % of the world´s pasture and range lands.
- As rangeland productivity declines in developing countries, more forests and farm land are being converted to grazing.

Quelle: FAO, 2001

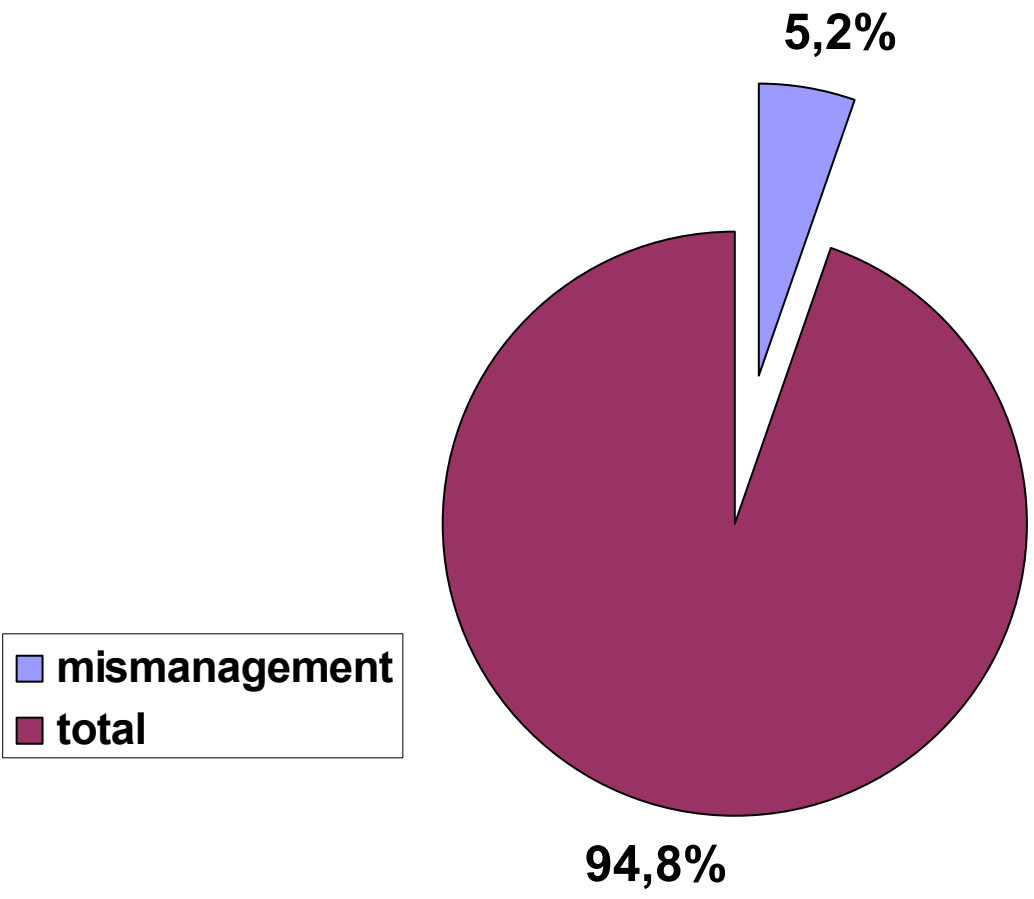
Land degradation for fuel wood



- each year an estimated 1730 million cubic meters of fuel wood are taken from forests and plantations.
- as population pressure mounts, rural people are removing vegetation from higher and steeper areas, exposing more and more land to erosion.

Quelle: FAO, 2001

Land degradation by agricultural mismanagement



• **wind erosion** degrades land left bare of vegetation. It affects 35 % of land in the Near East and almost 25 % of Africa north of the equator.

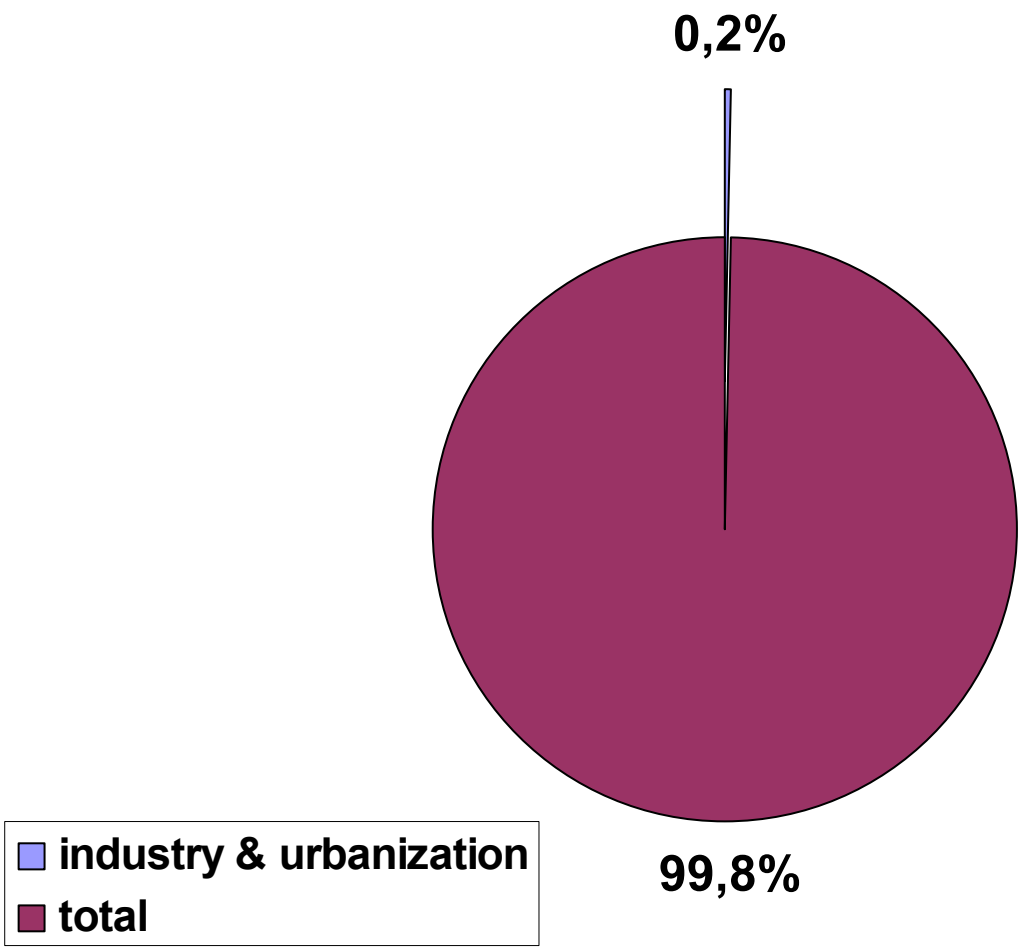
• **water erosion** affects mainly steep land or unprotected sloping areas. It causes soil losses estimated at 25000 million tons every year.

• **soil salinization and waterlogging** are caused by poor drainage of irrigated land. Globally, about 400000 square kilometers of land are affected

Soil nutrient loss occurs when land is farmed beyond ist capacity. This is increasingly the case in areas of shifting cultivation, where population pressure has reduced fallow periods drastically.

Quelle: FAO, 2001

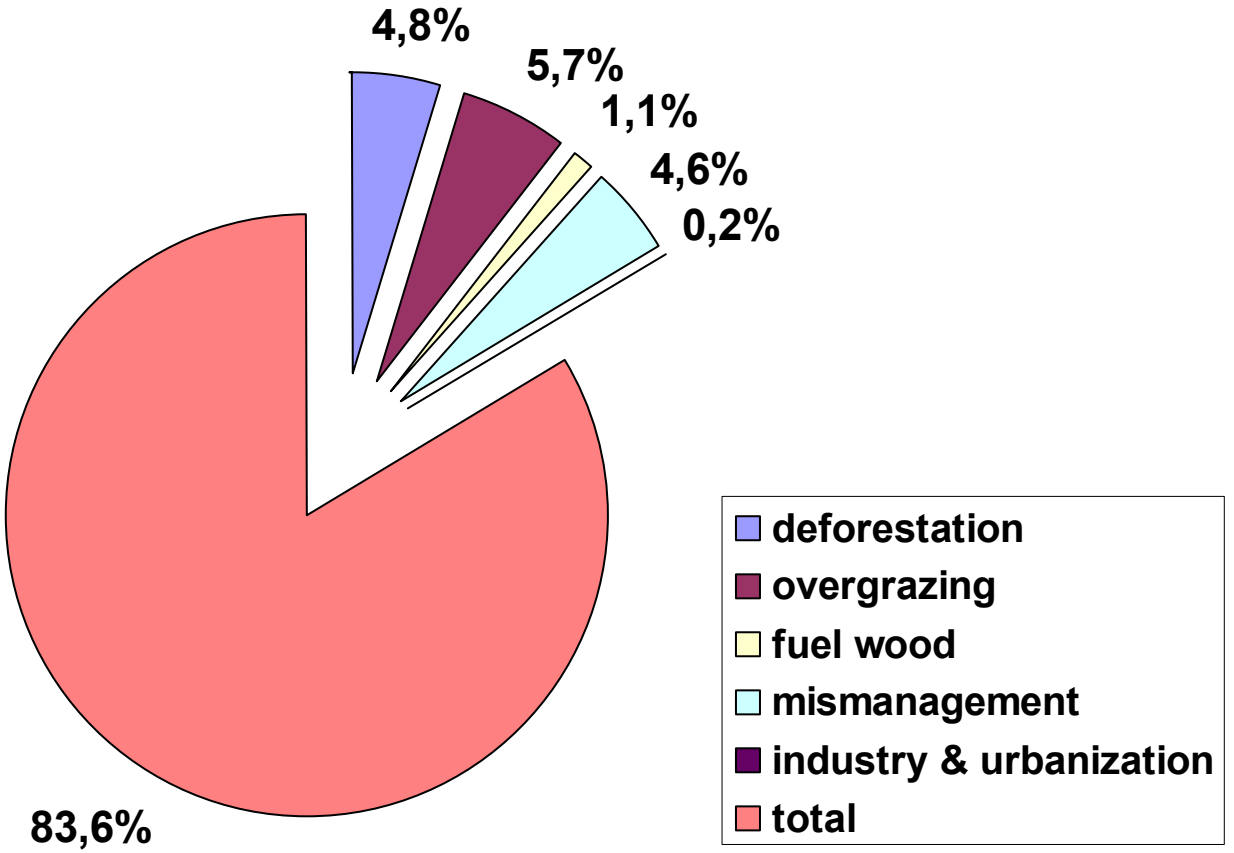
Land degradation by industry & urbanization



- **Urban growth, road building, mining & industry** are degrading land worldwide.
- Associated problems include pollution of soil by industrial and urban wastes, acid rain, overuse of inputs in feedlot, and oil and chemical spills.

Quelle: FAO, 2001

Land degradation



Quelle: FAO, 2001

Fragestellungen für den Ressourcenschutz

- welche Prozesse führen zur „Degradierung“
- wie kann die „Degradierung“ gemessen werden
- wie sind die Wirkungsmechanismen (komplex, linear)
- wie kann die Ressourcennutzung „nachhaltig“ gestaltet werden
- wie können Nutzungskonflikte erfasst und bewertet werden
- was sind die „Kosten“ der Degradation
- welche Landnutzungssysteme sind wo „nachhaltig“

Themenbereiche

- Beschränkung auf die Ressourcen Wasser & Boden
- Weltwasserressourcen
- tropische Böden
- Bewässerung / Versalzung
- traditionelle Methoden (water harvesting)
- Standortklassifizierung
- Fallbeispiel Tanzania
- Agroforstwirtschaft
- Selbsthilfeprojekte
- Wüstenbildung