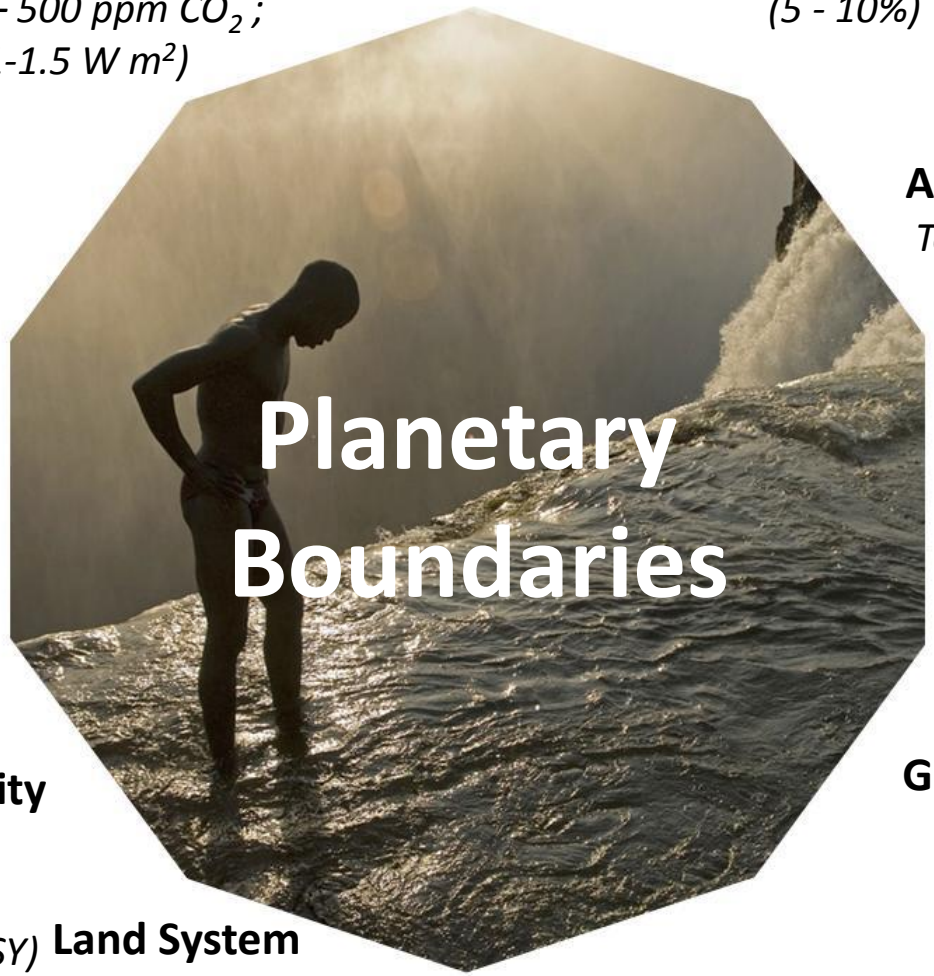

Forests cover about 4 billion hectares,
31 percent of the earth's land surface

Forests are being lost at an alarming rate

- Forest loss: 2000 to 2010: 130 million hectares of forest
- 13 million hectares per year



Climate Change
< 350 ppm CO_2 < 1W m^2
(350 – 500 ppm CO_2 ; 1-1.5 W m^2)

Ozone depletion
< 5 % of Pre-Industrial 290 DU
(5 - 10%)

Biogeochemical loading: Global N & P Cycles
Limit industrial fixation of N_2 to 35 Tg N yr^{-1}(25 % of natural fixation)
(25%-35%)
P < 10× natural weathering inflow to Oceans
(10× – 100×)

Atmospheric Aerosol Loading
To be determined

Ocean acidification
Aragonite saturation ratio
> 80 % above pre-industrial levels
(> 80% - > 70 %)

Rate of Biodiversity Loss
< 10 E/MSY
(< 10 - < 1000 E/MSY)

Global Freshwater Use
<4000 km^3/yr
(4000 – 6000 km^3/yr)

Land System Change
≤15 % of land under crops
(15-20%)

Chemical Pollution
Plastics, Endocrine Desruptors, Nuclear Waste Emitted globally
To be determined

Ecosystem-based resilience to climate change:

- Forests x concrete solutionss
- Forest restoration

<u>+ 1 billion people</u> depend directly on forests, **+ 350 M <u>of the world's poorest</u>, 60 million indigenous people**


People do not deforest because they are stupid or ignorant; there is an economic logic that drives deforestation

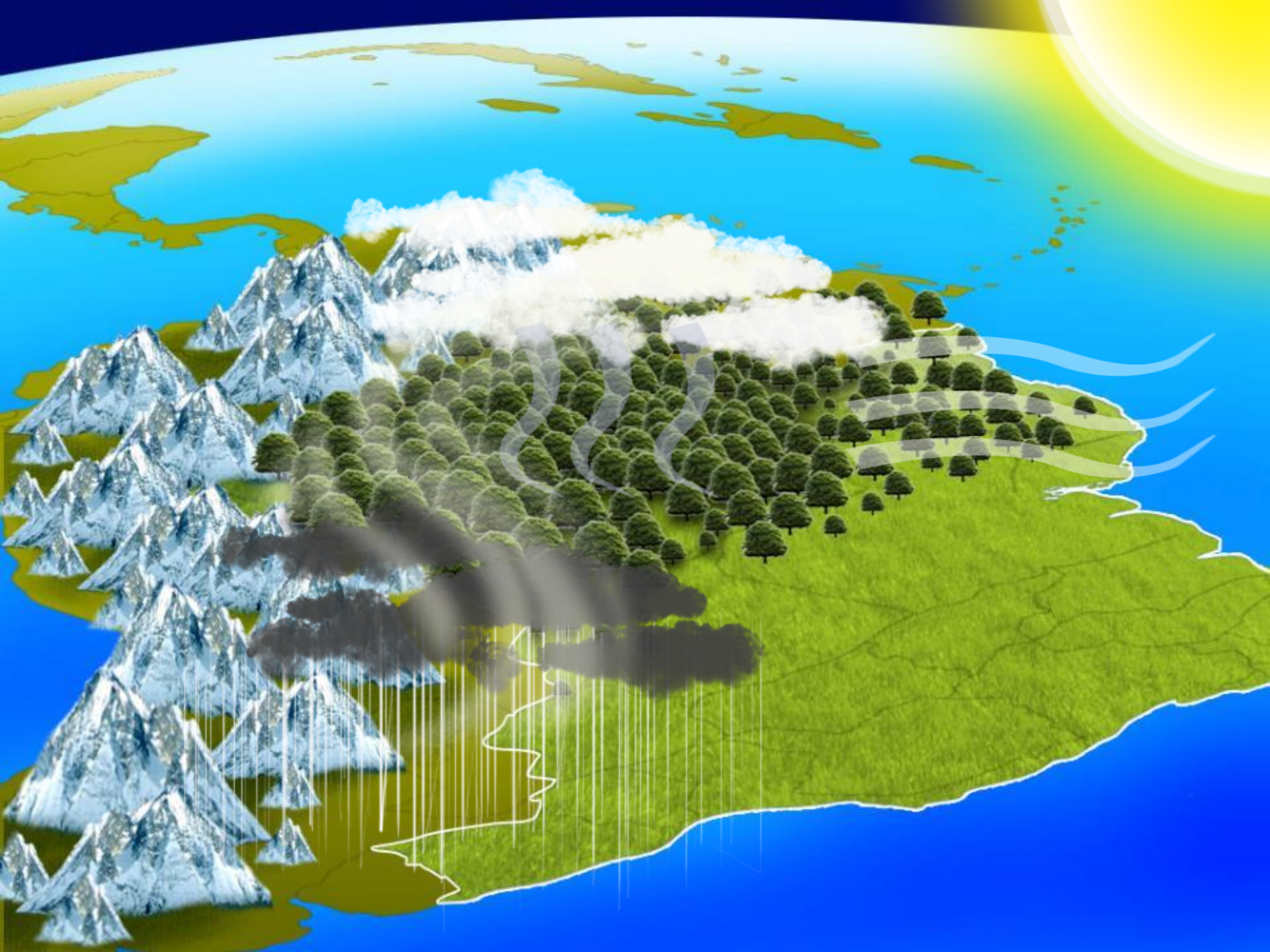
- **<u>80% of global deforestation</u>**: driven by expansion of agricultural frontiers
  - food demand increase by 2050: 70%

An essential goal (Viana 2003):

- making forests worth more standing than cut

TEEB principles (Sukhdev 2012):
recognize the value + demonstrate the value +
capture the value of these ecosystems in economic terms

changes in water cycle and precipitation, losses of biodiversity, soil erosion; in addition to negative social and cultural impacts on local populations



Energy production

Food production

Water supply to cities

10 suggested SDGs

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

1. End extreme poverty including hunger
2. Achieve Development within Planetary Boundaries
3. Ensure Effective Learning for All Children and Youth for Life and Livelihood
4. Achieve Gender Equality, Social Inclusion, and Human Rights for All
5. Achieve Health and Wellbeing at all Ages
6. Improve Agriculture Systems and Rise Rural Prosperity
7. Empower inclusive, Productive and Resilient Cities
8. Curb Human-induced Climate Change and Ensure Sustainable Energy
9. **Secure Ecosystem Services and Biodiversity, and Ensure Good Management of Water and other Natural Resources**
10. Transform Governance for Sustainable Development

Targets

(1) Reduce deforestation and degradation of forests

- absolute deforestation and degradation area (hectare per year) – zero by 2030
- % deforestation and degradation relative to total forest area (per biome)
- CO2 emissions from deforestation and degradation (tons)
- CO2 uptake from managed forests (tons)
- absolute area of natual forests restored

Targets

(2) Increase the value of sustainably managed forest products and environmental services

- % increase in value of forest products relative to agricultural products
- % increase in value of payments made for envivornmental services
- Investment in forest management technology development and transfer ($)
- Incentives to enterprises that incorporate co-benefits of forests (e.g. tax reductions - $)

Targets

(3) Eliminate extreme poverty in forest dependent communities

- % change in social indicators of human development
- % reduction of inequalities between forest x urban populations
- % reduction of gender inequalities in forest populations

Targets

(4) Improve governance of forests

- % of forest area with clear and secure land ownership
- % of indigenous people with secure land rights
- % change in conflicts over forest use
- % reduction of ilegal production of forest products and ilegal deforestation

Making forests worth more standing than cut

Fundação Amazonas Sustentável

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