

The Problems (1)

- Land degradation, low agricultural productivity and poverty are major problems in sub-Saharan Africa (SSA):
 - Serious degradation judged to affect 1/5th of agricultural land in SSA between 1945 and 1990
 - Soil erosion and fertility depletion are major problems
 - Estimated annual productivity losses: <1% to 9%
 - NPV of current and future losses typically 2-3% of agricultural GDP, but much higher in some countries
 - Soil fertility mining provides as much as one-third of farm income

Based on trends in declining biomass (NDVI), excluding areas where rainfall trends explain it, about 10% of the area of SSA – mostly uncultivated land – degraded between 1982 and 2003.

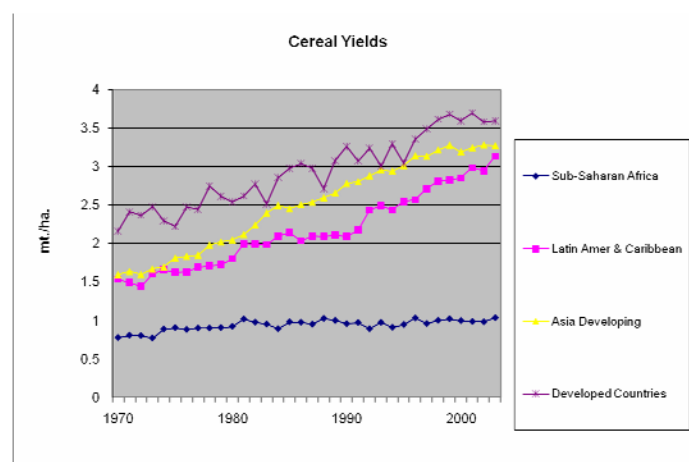
Biomass decline vs. terrain/soil constraint and agriculture

- Decrease - Suitable terrain/soil - Non-cultivated
- Decrease - Suitable terrain/soil - Cultivated
- Decrease - Unsuitable terrain/soil - Non-cultivated
- Decrease - Unsuitable terrain/soil - Cultivated
- No Data

Source: Vlek, et al. (2008)

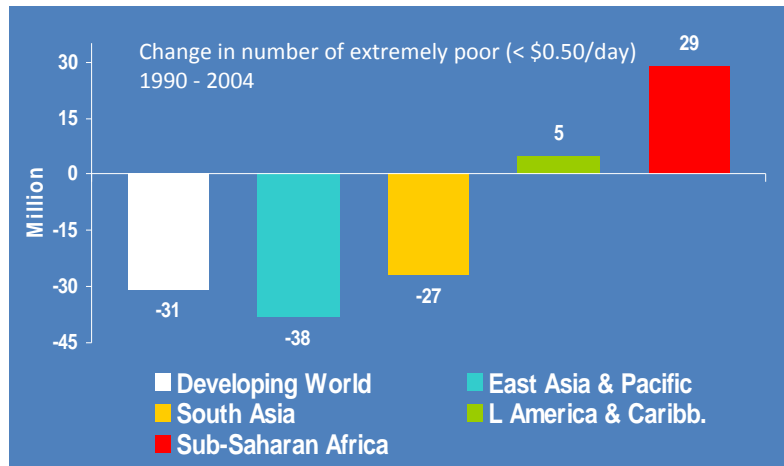
The Problems (2)

– Agricultural productivity is stagnant in most of SSA, which is falling farther behind other regions:

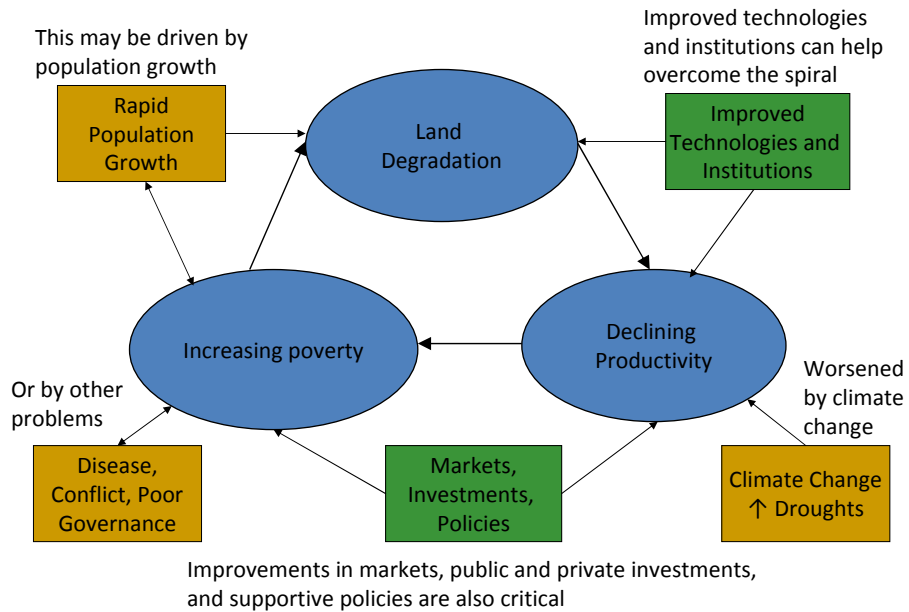


The Problems (3)

– Poverty is increasing in SSA while falling in most other developing countries:

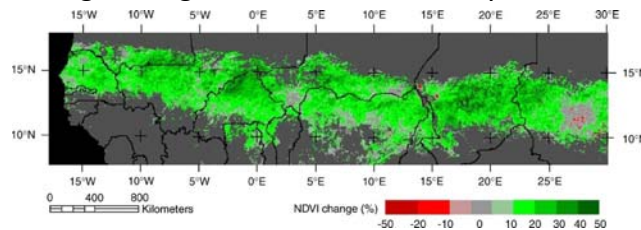


These problems fuel concerns about a downward spiral:



Overcoming the Poverty – Degradation Spiral (1)

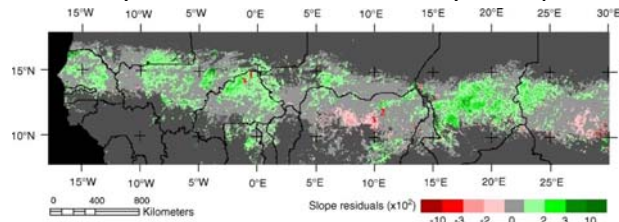
- There are many examples of success in SSA:
 - Re-greening of the Sahel since early 1980s



Trends in NDVI,
1982-2003

Source:
Herrmann, et al.
(2005)

- In many areas this is due not only to improved rainfall



Trends in
residual NDVI
(not explained by
rainfall trends) ,
1982-2003

Herrmann, et al.
(2005)

Overcoming the Poverty – Degradation Spiral (2)

- Reasons for re-greening in Sahel (hypotheses)
 - Response by communities/households to famines
 - Depleted livestock herds → recovery of vegetation
 - Improved land and tree tenure security
 - Development programs and policies

Overcoming the Poverty – Degradation Spiral (3)

- Other success stories in SSA:
 - “More people – less erosion” in Machakos, Kenya
 - Soil and water conservation in drylands of West Africa and Ethiopia
 - Agro-forestry in eastern and southern Africa
 - High value crops, dairy and improved land management in Central Kenya
 - Conservation agriculture in Zambia
 - Fertilizer micro-dosing in western and southern Africa
 - Targeted input subsidies in Malawi
 - Farmer-led agricultural advisory services in Uganda

Overcoming the Poverty – Degradation Spiral (4)

- Elements of success:
 - Farmers’ motivation to improve their livelihoods
 - Secure (not necessarily private or titled) resource tenure
 - Access to markets, infrastructure, and services
 - Appropriate research and technical assistance
 - Profitability of technologies in near term

Challenges and Opportunities for the Future

- Major trends affecting outlook in SSA:
 - Rising food prices → need for & higher returns to increased investment in agriculture
 - Climate change → need and opportunities for adaptation and mitigation strategies
 - Economic growth and urbanization in SSA → opportunities for higher value agriculture, but also threats (esp. in peri-urban areas)
 - Market liberalization → increased opportunities and need for private sector development, farmer organizations
 - Decentralization → potential to increase effectiveness of governance & better serve the poor, but favorable outcomes not assured
- **The bottom line:** There are many pathways out of the downward spiral, but achieving these requires effective policies and investment strategies, facilitating local initiative

Trends in Relative “Greenness” (NDVI), 1982-2003

