

Agriculture and climate change

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You can't see vulnerability from space...

- * In Africa, 95% of all food consumed is grown on the continent
- * Variability in growing conditions results in widespread reduction in crop production
- * Vulnerability to food insecurity results from
 - * **Economic context** in which reductions in production occur
 - * **Livelihood strategy** and income level of farmers
 - * **Political and governmental effectiveness** in providing market and economic stability
- * Access to food is the primary cause of food security crises today, not food availability

Agriculture and Climate Change

- * Population expansion is likely to peak in 2050
- * 'Business as usual' CO₂ emissions is likely to result in a 4°degree+ warming
- * Global agriculture is likely to experience declining yields, even with technological advances
- * Warming will result in large local production declines in tropical African arid and semi-arid agricultural regions (1 of every 2 yrs harvest failure in Southern Africa (Thornton et al 2011))

Drought stress on rice paddy



Markets may not deliver...

- * Market solutions to redistribute excess food will not be reliable if yields decline globally – leading to greater access problems than exist today
- * Adaptive capacity of food systems in Africa is low –
 - * Food aid as a long term strategy is not effective
 - * Response of national governments to protect markets can backfire
 - * ‘Farmers will not grow crops or raise livestock that they do know, are not able to sell and are not used to eating’



Social Sources of Vulnerability

- * Transforming global food system to respond to increasing demand
- * Simultaneous climate change-reductions in yields and global population expansion
- * Increases in commodity prices reduces the ability of the world's poorest to access food from the global market
- * Local food production will remain central to food security in Africa for decades – thus the local government's ability to foster security, access to markets, and political effectiveness is critical