

## Issues related to agriculture

**Impacts,  
adaptation options,  
concerns, challenges, barriers,  
actions being taken,  
questions for discussion**

## Overview of impacts

- In mid latitude crop productivity
  - increase for 1-3° C temperature increase
  - Decrease >3 1-3° C temperature increase
- Tropics/subtropics/seasonally dry
  - Decrease with any increase in temperature, given increased frequency and intensity of droughts

**In many places combined effect of increased temperature, reduced soil moisture, water stress, land degradation/salinisation, increased pest and disease outbreaks, fires**

## Impacts at regional level

- Severe adverse impacts in many parts of Africa
  - especially in marginal lands, rainfed areas on food production and livelihood
- Decreased fish production from inland and coastal systems
- Changes in seasonal flows (snow/glacier melt) affecting hydrology and food production in some regions
- Decline in many drier parts or where crops are near their temperature limit
- Initial increase in some wetter and temperate parts

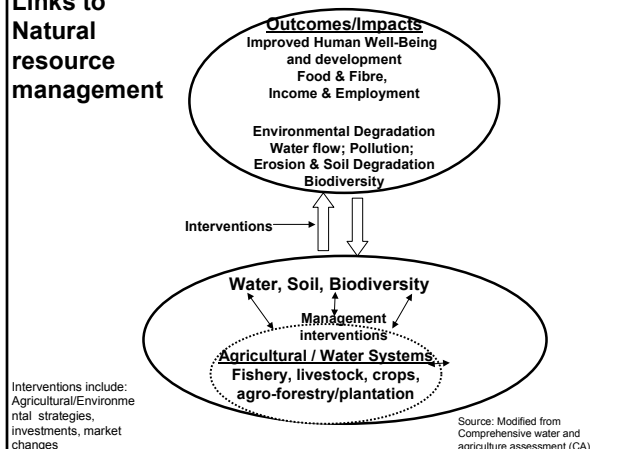
## Adaptation options and some actions taken

- Altered cultivars, e.g. drought and pest resistance
- Changes in planting times and cropping patterns
- Changes in crops planted
- Changes in farming systems (e.g. combined crop/livestock/agroforestry)
- Move to develop small dams or expand irrigation
- Provision of information systems and changes in institutional arrangements,
  - e.g. drought watch, drought relief and stewardship schemes,
  - food distribution systems,
  - crop insurance or index-based weather risk insurance
  - integrated land-water management (landscape management),
  - development of a national agriculture climate change strategy and action plan

## Some concerns

- Lack of information on impacts and adaptation at appropriate scale
- Capacity to disseminate and use existing knowledge
  - Farmer to farmer training
  - South-south and north-south exchange
  - Research and practitioner exchange
- Engagement of relevant stakeholders (national to local)
- Cross sectoral approach
  - Challenge of developing a functional and coordinated cross-sectoral institution
  - Challenges of developing strategies (long term planning)
  - Access to credit including microcredit

## Links to Natural resource management



## Some Concluding comments/questions

- Agriculture – closely linked to development,
- Yes, further research and information needed
- We have the knowledge of what is needed in the short and long-term term, but seem to not act on it – why?
 

For example:

  - Accept need for diversification – for both practices and income (short-long)
  - Accept links between natural resource management, water availability/access and development and better management of natural resources,

## Some Concluding comments/questions

- Accept
    - Need for cross-sectoral approach at national level (policy development) and action at sub-national level
      - Need to overcome institutional barriers (structural, managerial, informational, financial)
    - Engagement of multiple and relevant stakeholders
  - Caution about introducing maladaptation
    - e.g. building small dams without considering the aggregate effects downstream and for rural and urban populations
  - Need to deal with present (and the adaptation deficit) and have better development outcomes
- How do we scale up current “successes”?