



Climate change impacts and adaptation: food security

Climate change will affect food security in southern Africa directly and indirectly. Current gains in food production look likely to reverse, adding to increasing reliance on food imports. People at risk are those who are already food-insecure.

What is food security?

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”
(World Food Summit, 1996)

Food security depends on a number of factors:

- agro-climatic conditions determining physical production or availability of food
- socioeconomic conditions (income and food prices), determining access to food for households and individuals
- food utilisation – how well the body can use nutrients available in food (how healthy a person is)
- food stability – the transitory nature of household food shortages (seasonal production cycles; political, economic or climatic crises).

Food security occurs at various scales, from individual and household level, to national, regional and global levels.

Food security in southern Africa

Variability of rainfall, droughts, floods and storms contribute to variability of crop yields and occasional crop failures. Other influencing factors include:

- outbreaks of diseases
- political instability
- population growth rates exceeding agricultural production growth rates
- deteriorating water quality
- degrading land resources
- lack of investment
- failure of liberal agricultural policies.

Nationally, the response to food deficits is importation. Southern Africa faces insufficient food production and heavier reliance on imports to feed a growing population. This was recently aggravated by the global economic crisis and the volatility of global food prices.

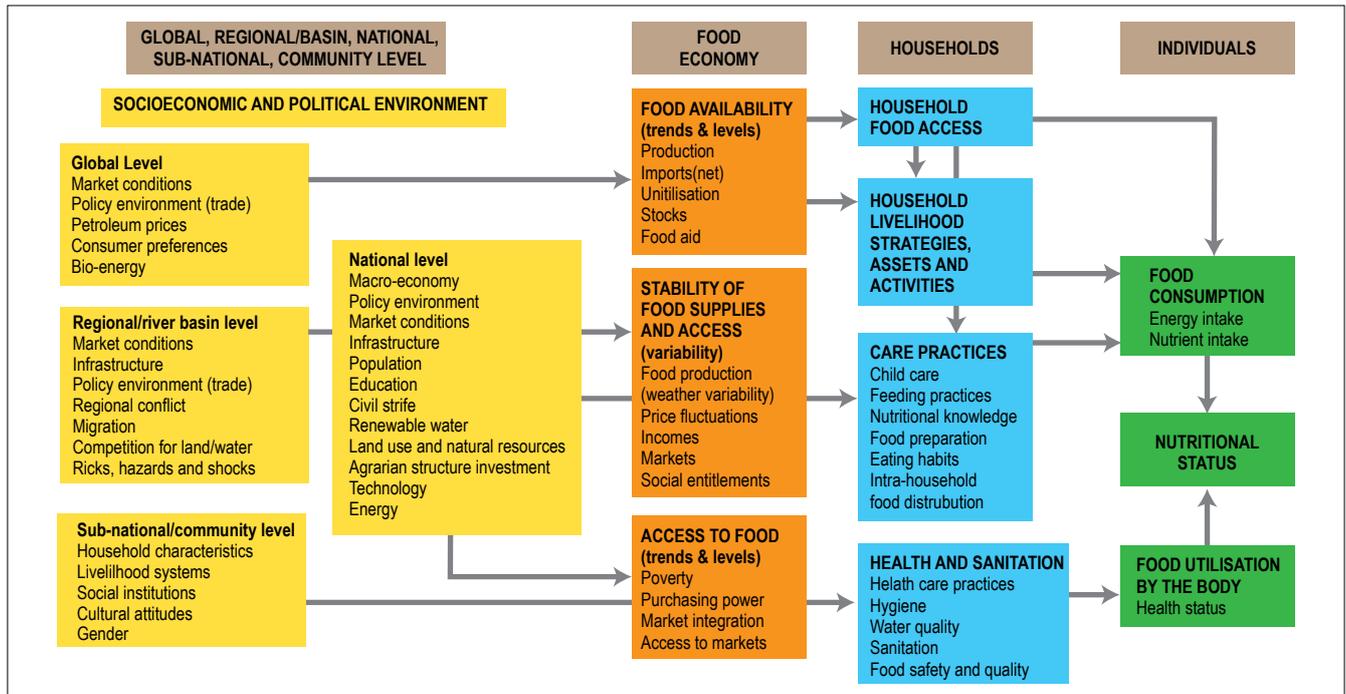


Climate change will have a direct impact on food security.

Household food access is determined by the ability of households to grow their own food, or buy food. Between 60% and 80% of households rely on subsistence farming, with limited sources of cash earnings, and cannot buy sufficient food when crops fail.

CASE STUDY: Hotspots

Climate disasters (droughts, floods and storms) occur frequently along the eastern seaboard of the subcontinent, and the whole region is prone to drought. The smaller, densely populated countries (Lesotho, Swaziland, Malawi, Zimbabwe) and Mozambique are already severely impacted by these events, and these patterns are likely to persist and intensify under climate change. Recent efforts by countries to strengthen agriculture and reduce food insecurity are at risk of not keeping up, and the smaller countries are at high risk of not coping with increasing climatic stress and/or shocks. The central region (Zambia, Zimbabwe) with its high reliance on maize and exposure to drought cycles (ENSO events), is also vulnerable.



Food security in southern Africa. [Adapted from FAO (2008).] Climate change will impact on food security primarily at the household level.

Climate change and food security

Climate change will affect food security directly through production shortfalls, and indirectly through damage to infrastructure, environment and the social fabric (Easterling *et al.*, 2007). It will impact mostly on people who are already food-insecure, who are subject to existing high levels of climate variability and stress, and who can't cope with or adapt to the added pressure. With increasing temperatures, soil moisture will decrease more rapidly after rains. Rainfall patterns will change, and droughts and floods will become more frequent.

| Regional food trends during past decade | | | |
|---|------------|---------|----------|
| Country | Production | Imports | Food Aid |
| Angola | ↑ | | |
| Namibia | ↑ | | |
| Malawi | ↑ | | |
| Mozambique | ↑ | ↑ | ↑ |
| Botswana | | | ↓ |
| Swaziland | | ↑ | ↑ |
| Lesotho | ↓ | ↑ | ↑ |
| Madagascar | ↓ | | |
| Zimbabwe | ↓ | | |

Relationship of decreasing food security to overcrowding of arable land and severe pressure on natural resources.

These will affect crop and livestock production. Yield variability for rainfed agriculture will increase further, particularly for crops such as maize, wheat and rice, which will become less suited to the evolving climatic conditions.

Climate change can impact on socioeconomic conditions, for example by reducing job opportunities in the agricultural sector, or through an increased burden of disease. This could impact negatively on food security by placing pressure on household budgets and reducing household ability to access food in other ways.

References

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FAO. 2008. *Climate change and food security: A framework document*. FAO Interdepartmental Working Group on Climate Change. FAO, Rome (available at <http://www.fao.org/docrep/010/k2595e/k2595e00.htm>).

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