



Helping People and
The Planet Thrive



Increasing Food Security in a World of Climate Change

Policy Brief - Food Security

We face a world with almost 1 billion chronically hungry people,¹ the majority of whom are women and their families whose livelihoods depend on healthy ecosystems. **Food insecure people are already vulnerable to the impacts and pressures of fluctuating food and fuel prices, population growth and environmental degradation. Climate change is an additional threat and generates a profound impact on global hunger.**

Food and Nutrition Security in the Context of Climate Change

The majority of food insecure people live in rural areas. Their hunger and poverty are intrinsically linked. Agriculture and healthy ecosystems are fundamental to the livelihoods of most; a full half of hungry people are smallholder farmers. Yet, they do not produce adequate food, and their incomes are too low to buy enough for their families.²

FOOD SECURITY MEANS HAVING A RELIABLE SOURCE OF FOOD AND SUFFICIENT RESOURCES TO PURCHASE IT. A FAMILY IS CONSIDERED FOOD SECURE WHEN ITS MEMBERS DO NOT LIVE IN HUNGER OR FEAR OF STARVATION.³

Assuming that current trends in population growth and the distribution of wealth continue, 10-20 percent more people may be at risk of hunger by 2050 because of climate change. Of these, 65 percent are expected to live in Africa.⁴ Climate change will alter water availability, affect the spread of pests and diseases, shift crop distribution and is projected to negatively impact specific crop yields in developing countries, including rice, maize, and wheat. This could leave 25 million additional children undernourished by 2050.⁵

Decreases in crop production can also lower incomes for smallholder farmers and/or lead to higher prices, making it harder for poor families to afford food. When food and resources are scarce, women are often the last to eat in a family.



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Lack of food also forces families to over-exploit natural systems, further harming their ability to access future food supplies. The possibility of climate-change induced disruptions (e.g. drought, flooding) of food supply chains will also undermine the stability of food systems.

Currently 2.6 billion people in developing countries rely on fish as a substantial source of protein. Changes in sea level, salinity, currents and ocean acidification impact marine food chains and habitats, increasing stress when 80 percent of the world's primary fish stocks are already near or over-exploited.⁶ These negative impacts, coupled with changes in pest and disease patterns that affect human and livestock health, will make it harder for poor people to obtain adequate nutritious food.

CARE and WWF believe that an appropriate food security approach should:

Be comprehensive

Achieving food security for all requires measures to help people avoid hunger, such as insurance systems and crop diversification; interventions that reduce vulnerability to hunger by enhancing incomes, including access to credit; and relevant, timely, and predictable relief or social protection measures, such as food or vouchers. In addressing nutrition, food security strategies must also look beyond calorie count and consider diversity of diet, including fisheries and other food sources in addition to crops.

¹FAO. 95 Million in Chronic Hunger Worldwide. September 2010. <http://www.fao.org/news/story/en/item/45210/icode/>

²The Millennium Project, 'Halving Hunger: It can be done', Summary version of the Report of the Task Force on Hunger (New York: The Earth Institute at Columbia University, 2005), cited in Report of the Special Rapporteur on the Right to Food, 25 June 2008.

³Global Hunger and Food Security Consultation Document, 2009. <http://www.state.gov/documents/organization/130164.pdf>

⁴Parry, M., Evans, A., Rosegrant, M.W., & Wheeler, T. (2009). Climate Change and Hunger: Responding to the Challenge. World Food Programme (WFP), Rome, Italy.

⁵Nelson, Gerald C., et al. Climate Change: Impacts on Agriculture and Costs of Adaptation. International Food Policy Research Institute. 2009.

⁶Nellemann, C., Hain, S., and Alder, J. (Eds). In Dead Water – Merging of climate change with pollution, over-harvest, and infestations in the world's fishing grounds. United Nations Environment Programme. February 2008.

WOMEN POSSESS A WEALTH OF KNOWLEDGE ABOUT LOW-RISK FARMING, SUSTAINABLE WATER MANAGEMENT AND FAMILY HEALTH AND NUTRITION. THEY PRODUCE OVER HALF THE WORLD'S FOOD YET OWN LESS THAN TEN PERCENT OF THE LAND.⁹

Be environmentally sustainable

Food production depends on a range of ecosystem services and processes like pollination, pest control, crop genetic diversity, and the cycling of soil and water. Wild food sources that poor people often depend on in difficult times are dependent on biodiversity. To protect the sustainability of these natural processes and biodiversity, food security, climate change, rural development and natural resource management strategies should be mutually reinforcing.

Be gender-sensitive and empower women

Food security strategies should assess power and resource imbalances and place women at the center of solutions. According to the UN Food and Agriculture Organization, 100-150 million fewer people would go hungry if women had equal access to resources, including technology, financial services, education, and land.⁸

Promote good governance and rights

Populations most affected by food insecurity often grapple with inequitable policies, power relationships and cultural norms that, in turn, shape their vulnerability to climate change and hunger. National strategies should include governance-related interventions, (e.g. improved land and resource access and rights, integrated land-use and natural resource management planning and national/local level capacity building) and engage local communities in all stages of interventions to better ensure equitable food security.

Integrate climate change

Vulnerability assessments, climate modeling projections and other tools can help identify particularly vulnerable populations and crops. These tools enable programs to better identify suitable crops and future crop locations and reduce vulnerabilities of agricultural producers and rural communities, while ensuring climate-smart investments. Integrating or “mainstreaming” climate change risks, impacts, and vulnerability into food security strategies increases the sustainability of food security activities.



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Explore new approaches

Opportunities may emerge to support food security programs for smallholder farmers, as the agriculture sector is increasingly considered a means of reducing emissions. Agricultural systems that produce food, store carbon, increase resilience to climate change and diversify rural livelihoods should be explored while ensuring that livelihoods, rights and interests of smallholder farmers are protected and promoted.

Annan and Babayagidea and their children live in northern Ghana and make their living farming. Their village of Yaroyiri, like many in the region and other parts of Africa, is prone to severe weather, including drought and flooding. Both extremes decrease crop yields and are exacerbated by climate change. As a result, even though they work hard to cultivate their land and support their family, Annan and Babayagidea do not always grow enough to feed their children.

While climate change threatens their food security, Annan and Babayagidea are improving their farming techniques to mitigate against the risks that climate variability poses. Through membership in their community's Climate Adaptation Committee, they are learning conservation agriculture practices that protect their crops from extreme weather and increase yields. Members are building embankments and using plants as buffers to water flow, helping to manage large amounts of rain and avoid soil erosion. All these practices lead to higher crop yields and lower labor requirements. Now, during the “hungry season” they have food to eat.

⁸Food and Agriculture Organization of the United Nations. State of Food and Agriculture Report. <http://www.fao.org/publications/sofa/en/>

⁹United Nations Development Programme. 2009. Resource Guide on Gender and Climate Change.