

GUEST Editorial

Environment and Food Security in sub-Saharan Africa

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The existence of key linkages between food security and environment is widely accepted even though the nature of this relationship is much contested. There are two opposing factions: those who see food security and environment as being essentially complementary and those who regard them as being in conflict [6]. The former stresses the interdependence between food security and a healthy natural resource base that promotes reinforcing practices. The latter stresses that the pursuit of food security entails inevitable costs to the environment. For example, the cost of using resources comes in the form of resource shortages, environmental deterioration and change. The reason many households in sub-Saharan Africa are food insecure is rooted in the ways entire livelihood systems have changed and adapted, or failed to adapt to challenges from the ecological and economic environment, including shocks such as drought and floods, and above all, climate change [7]. If food security is to be achieved in Africa, there is need at policy level to pay attention to these conflicts and complementarities.

The stark reality is that several African countries are currently facing food shortages. Per capita food production in sub-Saharan Africa has declined by 25 per cent over the last three decades [6]. Poverty and hunger are getting worse. Data from the World Development Report 2000-1 show that nearly half the population of sub-Saharan Africa is living below the international poverty line of US \$1 per day [3]. This proportion has failed to fall over time, and is higher than for any other region [3]. Child malnutrition has also increased, both in numbers and in proportionate terms. Data from the UN show that the proportion of underweight children in sub-Saharan Africa has increased from 26 percent in 1980 to 28.5 percent in 2000 [1, 3].

The arid and semi-arid areas of Africa are the naturally most food deficit and food insecure environments. In these areas, the key environmental factors contributing to food insecurity include drought, climate change, floods, diseases, desertification, deforestation, soil erosion and loss of genetic diversity of flora and fauna. Recurrent droughts and climate change are the most important of these environmental factors. In these arid and semi-arid environments, uncertainty is the key constraint which farmers and herders must contend with. Production of both crops and livestock depends largely on how the farmer or herder can be flexible or adapt to drought and climate change or spread risks [6]. Successful households in these dynamic

environments, are those who are able to diversify their economic activities, use different ecological niches (such as different micro-habitats), and access new sets of markets, social networks and political jurisdictions, such as moving across international frontiers [6].

Arid and semi-arid lands of Africa are driven by episodic events and trends and climatic uncertainty is the norm [4, 6, 7, 8]. Environmental risk is the most common trigger for episodes of acute household food insecurity [7]. Drought and climate change are the most common forms of environmental risk in most areas. Drought acts as a shock which affects both food security and environment. Climate change and variability occur due to natural and anthropogenic processes that change atmospheric conditions. These changes bring significant changes in rainfall and temperature patterns, which are manifest through drought, dry spells and floods.

In addition to challenges posed by the above factors, the population of the continent keeps growing, affecting both food security and environment at local, national and regional levels. The amount of farmland per person is decreasing rapidly as population growth places more pressure on a limited landscape [4]. Agricultural progress is not keeping pace with population growth. Therefore, the resources that already have been strained are strained further to accommodate the new growth. The increase puts pressure on natural resources, particularly land and forests, resulting in increasing land degradation, low agricultural productivity, rural-urban migration and accelerated food insecurity.

Ecological uncertainty and rapid population growth are not the only sources of risk in these environments. Conflict has also become a critical influence on food security and is now widespread not only in the arid and semi-arid areas but also in the humid areas of sub-Saharan Africa. Whatever the nature or cause, conflicts have drastic consequences for food security as conflicts drive away people from their agricultural lands, breaks up lifestyles and disrupt marketing and distribution systems. The long term effect of this disruption is that people have little confidence in the future and are, therefore, reluctant to invest in agricultural improvements. Conflicts can also be seen as a cause of unpredictable risk, analogous to risk of drought, floods and other environmental risks [5].

Other factors in the unfolding food insecurity drama include poverty, landlessness, insufficient attention to the needs of women who are the backbone of African food production, inadequate attention paid to research and technology in food production compared to cash crops for export, weak economies that are burdened by mounting debts, market risks, poor transportation infrastructure and distributional systems, social and political systems which lead to unequal access to resources, inadequate financial arrangements and terms of trade which force some countries in these areas to overexploit their limited resources for survival, and developmental conflict between export-based cash crops and foreign exchange needs on the one side and basic food security for the masses of the population on the other. These socio-economic factors can reinforce the environmental ones and increase vulnerability to shocks, and magnify or intensify food insecurity in several areas in these arid and semi-arid areas.

In general, in the countries experiencing drought or famine in Africa, rarely do middle class and wealthy people go hungry. Food is usually available to those with money [2]. It is the poor - and usually those in rural as well as urban areas - who go hungry; indeed, even in normal times they often exist on the margins of national economies [2]. Artificially low food prices are maintained in many African nations. Major African cities double in size every ten years and governments attempt to keep food prices low to avoid civil disturbances and political unrest. Controlled low prices paid to farmers, combined with incentives to produce export crops, do not encourage food production, especially when farmers do not benefit from similar controls on prices of seed, fertilizer, tools, machinery, fuels or their own needed consumer items. Neither the production nor the pricing of food are given adequate attention because of economic and political priorities divorced from actual food needs. The inadequate returns to rural food producers provide them with few incentives to invest their resources in food production for the domestic market [2].

Proposals on what can be done about food insecurity abound. These proposals are in the form of research recommendations, plans of actions and technical solutions. The question that arises is: what has been done with the available knowledge and proposals that have been put forth? This question points to the need to examine the translation of the knowledge, action plans and promises for a sustainable food security solution at both local and national levels in Africa. Despite high-sounding proposals and recommendations, not much has been realized with regard to food security in the sub-continent.

To correct the ingrained problems of food insecurity, a new approach to development, one that is based on self-reliance and policies that sustain and expand the environmental resource base, is needed. To achieve this requires simultaneously changes or reforms in structures and attitudes and the way things are done at two levels: (i) at the internal level, and (ii) on the external plane.

At the internal level, a new domestic order is urgently required to overcome the dependency-syndrome and the over-dependence on single staple crops (as is the case in most countries in Southern and Eastern Africa); to ensure famine preparedness and improved capacity to respond to environmental and human hazards; establish a balance between food and cash crop production; improve food production, marketing, storage and distribution, so as to secure access to food by individuals and households; and establish more effective and efficient safety nets. There is need for people to manage exploitation of natural resources and engage in sustainable agricultural or pastoral practices in ways that will ensure adequate food as well as secure the future availability of the natural resource base. Local sustainable environmental and natural resource management are essential in order to reduce vulnerability, whether caused by drought, climate change or by environmental degradation. Participatory approaches need to be fostered, focusing on the inclusion of women, poor farmers and workers in agricultural development decision making and in socio-economic opportunities. Attention needs to be paid to the impact of new technologies and their environmental sustainability; with emphasis on promoting and developing sustainable agricultural

technologies. There is need to strengthen national capacities for long-term climate modeling and regular short-term weather forecasting in order to provide farmers with the information they need. It is important to ensure that initiatives to address food security are integrated into national and local agendas and programmes to address climate change and sustainable livelihoods. As prime movers in food production, women are crucial and their participation should be made central to any efforts to address food security and climate change. Governments should strengthen linkages between institutional mechanisms for more effective coordination of climate change adaptation, food security and disaster risk reduction programmes.

Sub-Saharan African countries also need to ensure an enabling political, social and economic environment, which promotes the best conditions for the eradication of poverty and promotion of durable peace, based on full and equal participation of women and men, which is conducive to achieving sustainable food security for all. Finally, food insecurity in rural and urban areas of sub-Saharan Africa cannot be properly understood or effectively addressed if HIV/AIDS is not factored into the decision making and action equation.

At the external level, food security, within a sustainable development framework, requires collective action to resolve the debt problems, strengthen international financial stability, redirect resources away from wasteful armaments and generally, establish conditions for more equitable terms of trade. Strong international support will be necessary through a more favourable trading environment, debt relief and greater and better focused aid flows.

In conclusion, the existing knowledge and socio-political structures need to move to workable solutions in order to avoid a repeat of persistent famines and food shortages as were recently witnessed in East Africa and have been witnessed before in other parts of the African region. Politicians, policy makers, academics, communities and development partners need to move to viable and sustainable solutions, drawing on existing knowledge and practices on environment and food security, and even seek ways to exercise power and leverage in order to transcend the paradigm that has resulted in the present food insecurity situation in Africa. Although the existence of key linkages between food security and the environment is now widely accepted, policy makers and implementers in Africa have failed to harness the synergy between the two. Consequently, both the environmental action plans and food policies that were drawn by many countries since the 1980s have achieved little tangible outcomes. Also, Africa has become accustomed to responding to natural and man-made disasters such as droughts, floods and famines that periodically threaten food security but fail to anticipate and adequately prepare to effectively combat them. In other words, food security or even the environment is managed in ways that are reactive and not proactive. Problem solving in food security tends to be based on short-term expediencies, in the knowledge that future refinement will be necessary. The nature of most food security and environmental problems requires research and careful consideration of a wide number of options before a possible solution can be reached. The bottom line is that policy makers must understand the ways in which people interact with their environment before designing policies that can successfully

address both sets of needs. Finally, it is high time African countries confronted the realities of planning for their own future [2]. Past lessons have shown that many of Africa's existing constraints can be removed only by Africans themselves and through hard work and collective self-reliance. There is plenty to learn and even to borrow from the experience of others, but all the same, Africa should design strategies to solve African problems.

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