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## FOOD SECURITY AND CONSERVATION IN AFRICA: ADDRESSING HUNGER AND FARMING ISSUES TO CONSERVE WILDLIFE

The Africa Biodiversity Collaborative Group (ABCG) and the Bushmeat Crisis Task Force (BCTF) held a 29 October 2004 meeting to: 1) discuss the linkages between food security and biodiversity conservation; 2) learn about successful efforts to prevent poaching by addressing the hunger situation and farming practices of local communities; and 3) identify areas for possible field level collaboration between the conservation community, agricultural and food security sectors and other stakeholders in Africa.

Presenters highlighted the emerging role of [ecoagriculture](#), innovative efforts by the [Wildlife Conservation Society \(WCS\)](#) in Zambia to link rural markets, food security, and natural resources management, linkages between food security and the [bushmeat crisis](#), and efforts by the [Food and Agriculture Organization](#) of the United Nations on agricultural extension. See: [www.abcg.org](http://www.abcg.org); [www.frameweb.org/ev.php?ID=10397\\_201&ID2=DO\\_TOPIC](http://www.frameweb.org/ev.php?ID=10397_201&ID2=DO_TOPIC)

### KEY ISSUE

Until basic needs, such as food security, are met sustainably, the conservation of biodiversity in Africa will be a constant struggle. Poor subsistence farmers unable to grow enough food can not contribute to wildlife conservation until they are able to meet the food security needs of their families. Farmers need alternatives such as ecoagriculture, extension, improved agricultural production, and access to markets. Current levels of bushmeat consumption are not sustainable; bushmeat will not be a significant source of nutritional support to a large proportion of the next generation, except in the most remote rural areas. Many Africans already face food shortages and nutritional deficits, turning to bushmeat as a stop-gap measure. Protein alternatives must be developed and promoted now, before African wildlife has been totally depleted and its potential as an emergency food resource and sustainable economic alternative is gone.

### THE CHALLENGES

#### *Hunger/Food Security*

- 800 million people are undernourished in developing countries – 200 million or one-third of the population in Sub-Saharan Africa
- 2 billion people have micronutrient malnutrition
- 2/3 of the rural poor are in 'marginal' lands
- Agricultural productivity is low, frequently caused in part by policy, institutional and technological constraints
- High seasonal and year-to-year variability in food supplies, often the result of unreliable rainfall and insufficient water for crop and livestock production
- Lack of off-farm employment opportunities, contributing to low and uncertain incomes in urban and rural areas. The causes and consequences of food insecurity and poverty are inextricably linked
- Low productivity in degraded farmlands and cattle ranges, depleted forests and fisheries, fewer mammals in game reserves.

## **Human Population Growth**

- Human population has increased dramatically – 387% in Sub-Saharan Africa from 1950-1992
- Anticipated 50-60% increase in food demand in developing countries by 2030
- With rising populations to feed, food security is a major challenge to governments and civil society for the foreseeable future.

## **Unfair Prices at Agricultural Markets**

- Agricultural markets that promote unfair prices or crops potentially harmful to a region's natural resources contribute to land use practices that will degrade wildlife and watershed resources.
- Rural communities often lack the means or skills to negotiate trade practices more favorable to their own livelihood needs or the needs of their resources.

## **Bushmeat Crisis**

- Bushmeat is meat derived from wildlife. The bushmeat crisis refers to the illegal, commercial and/or unsustainable trade in wildlife meat.
- Traditionally, bushmeat – mainly terrestrial mammals - provided much of the food for people across Africa. In many areas, it still does today, but this is becoming increasingly untenable as human populations grow.
- Commercial hunting for bushmeat has become the most significant immediate threat to the future of wildlife in Africa; it has already resulted in widespread local extinctions in West Africa. The bushmeat trade is rapidly expanding to countries and species that were previously not at risk, largely due to an increase in commercial logging, with an infrastructure of roads and trucks that links forests and hunters to cities and consumers.

## **THE LINKAGES**

### ***Biodiversity and Food Security***

Biodiversity is important in food security for:

- Food, micronutrients, medicines
- Fuel, construction, raw materials
- Farming inputs (fodder, compost, fencing, stakes)
- Ecosystem services (soil, watershed services; pollinator, wildlife habitat)
- Asset convertible to other assets (savings, investments, barter, trade).

### ***Food Security and the Bushmeat Crisis***

- The bushmeat crisis is a human tragedy as the loss of wildlife threatens the livelihoods and food security of traditional subsistence populations (largely outside of cash economies) that most depend on wildlife as a staple or supplement to their diet.
- People in cultural transition may rely on bushmeat as a buffer to see them through times of hardship (e.g., unemployment, illness, crop failure, warfare), or to gain additional income for special needs (e.g., school fees, festivals, funerals). This buffer goes if wildlife goes, emphasizing the immediate need for economic and protein alternatives.
- People living in urban areas purchase bushmeat out of preference, not need; in cities, protein alternatives are available and frequently cheaper than bushmeat. This demand is unsustainable. The result of urban demand is a loss of the wildlife resource to the rural people who need it most.
- To determine how much we can continue to rely on bushmeat as a food source, we must examine: 1) the potential sustainable supply of bushmeat; and 2) how many people that it can support.
- Some ecosystems are more productive for terrestrial vertebrates than are others. Three factors determine how productive any ecosystem is for bushmeat: 1) number of breeding animals/unit area; 2) how big they are (amount of meat/animal); and 3) how many offspring each has/unit time.
- Bushmeat will not be able to supply human protein needs for the majority of the next generation ---theoretical calculations from Central Africa predict that, at current harvest rates, bushmeat supplies will decline by 81% over the next 50 years.

## ***Bushmeat is an Insecure Food Source***

- Bushmeat is not going to be a significant source of nutritional support to a large proportion of the next generation in Africa, except in the most remote rural areas.
- We can either find alternatives now, before the wildlife has been totally depleted, or we shall be forced to do so in the future.
- By then, much of Africa's magnificent wildlife will have gone, and many of its people might be facing malnutrition.

## **POTENTIAL SOLUTIONS**

### ***Solutions Must Acknowledge that:***

- There are biological limits to the amount of bushmeat which natural systems can supply sustainably. This is especially extreme in tropical forest systems.
- Human livelihoods are most effectively sustained in highly modified ecosystems, where humans have intensified agriculture and grazing systems.
- We need to plan at a landscape scale, for sustainable landscapes. These must contain areas dedicated to production of food to meet human needs, and areas dedicated to conserving wildlife. We need multi-disciplinary expertise in landscape planning and implementation.
- We need to be innovative when we think about food security and wildlife conservation linkages, and think more outside the box.

### ***Conduct Research on "Wildlife Friendly" Ways to Develop Agricultural Production and Access to Markets***

#### ***Case Study: The Community Markets for Conservation and Rural Livelihoods (COMACO)***

*The Community Markets for Conservation and Rural Livelihoods (COMACO) is a pilot program in the Luangwa Valley of Zambia that helps households living around protected wildlife and forest areas achieve increased food security and increased household income by offering access to higher-paying markets if they adopt better farming practices and prescribe to improved land use practices that promote reduced conflicts with wildlife, watersheds and other natural resources.*

*COMACO interventions target households who could not grow enough food and often resorted to wildlife snaring to use bushmeat as barter for food from more successful farmers. Interventions by WCS organized these households into producer groups and linked them to a community-owned but professionally managed trading center to provide them improved markets for cash crops (e.g. rice, honey). Results include improved producer prices for a range of commodities and producer groups comply with community land use plans and have voluntarily surrendered snares and firearms used to illegally kill wildlife.*

*Data collected from the COMACO on farmers' food security, prices of commodities, recovery of snares and firearms, wildlife populations, and complaints by safari tourists about snares suggest that this approach provides a cost-effective basis for improving land use practices outside of protected wildlife areas by offering better paying farm-based markets, as well as food assistance, improved crop production skills to farmers who support natural resource conservation.*



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### **Link Food Security, Rural Markets and Conservation**

- Food secure, farm-based communities with alternative sources of income to illegal use of wildlife can contribute positively to wildlife production.
- There is a need to increase food security for local farmers and link it to trade benefits in order to improve land use (that includes wildlife conservation areas).
- Local farmers need fair, legal trade opportunities for agricultural products and access to markets.
- Agricultural interventions that community stakeholders can pilot and lead themselves as practical, low-cost solutions are needed.

### **Improve Agricultural Extension**

- New agricultural extension strategies will play a key role in achieving African food security but cannot work alone.
- A “twin-track” approach is needed to: 1) improve the livelihoods of poor people – agricultural productivity and rural infrastructure are key; and 2) provide safety nets for the most vulnerable.
- Nonformal rural education on agriculture extension should be promoted: transferring practical information and innovation and opening opportunities.
- A multidisciplinary participatory approach to extension is needed – combining educational methodologies, communication, and group techniques with a strong emphasis on meeting people’s needs directly by raising farmer’s net income, generating rural employment, increasing social equity, and promoting gender sensitivity.
- Efforts should be made to work with governments and private industries on food supply options to rural areas in order to address food security.

### **Promote Ecoagriculture**

- Ecoagriculture is a new land-use approach that integrates farm and forest production with the provision of ecosystem functions at a landscape scale.
- Farmers, conservationists, researchers, leaders in rural development, entrepreneurs and policymakers all around the world have begun to develop and promote ecoagriculture. But larger-scale development and adoption of ecoagriculture is urgent and essential to address hunger, poverty and conservation, and to sustain ecosystems while retaining strong rural economies in industrialized countries.
- Ecoagriculture’s priorities include protected areas and their landscape matrix, agricultural regions with high-value biodiversity and ecosystem services, and regions where ecosystem degradation threatens livelihoods and productivity.
- Ecoagriculture’s strategies include expanding natural areas, establishing reserves that benefit farmers, creating habitat networks, raising farm productivity, managing wild species, enhancing ecosystem value of lands under production, reducing agricultural pollution, modifying management of soil, water and natural vegetation, mixing species to mimic the structure and function of natural ecosystems, and diversifying household incomes.

### **Understand Limits of Sustainable Use of Wildlife**

- If our goal is wildlife conservation, hunting can be regarded as sustainable only if: 1) hunted populations do not show a consistent decline in numbers over time; 2) hunted populations are not reduced to levels where they are vulnerable to extinction; and 3) hunted populations are not reduced to levels where they cease to be a significant resource to human users.
- Wildlife farming is not usually a good option as: 1) hunting wild species is always cheaper and easier than rearing wild species, so people will continue to hunt if they want to eat those animals until there are almost no wild ones left; very few wild species are biologically and economically suitable for farming; 2) obtaining founder stock often depletes wildlife populations; 3) wildlife farms are often a front for a wild trade, making enforcement of anti-poaching laws difficult; 4) other problems include genetic contamination, introduction of alien invasive species, and spread of disease into wild populations from farms.
- In savannahs, game ranching can be more successful than in tropical forests, although economically it is sometimes doubtful.
- Domestic species have been bred for millennia to be extremely cost-efficient at converting feed into meat.

## SUGGESTIONS FOR NEXT STEPS

1. Recognize the linkages between food security and conservation and challenge organizations to address these in their conservation, development and relief programs
2. Educate donors on the need to provide long-term funding for programs addressing complex multi-sectoral food security and conservation linkages
3. Encourage more partnerships at the field level between the conservation and food security sector
4. Demonstrate the cause and effect relationships among conservation investments and food security dividends (and vice versa) using case studies and quantitative results
5. Work with local people from the beginning to the end in addressing and demonstrating linkages
6. Use an integrated approach, even though it is acknowledged that this is expensive; show synergies
7. Support innovative programs, encourage creative solutions within existing programs
8. Share both the positive and negative results of experimental efforts, across disciplines and to key decision makers. Identify which components should be improved or discarded, and which programs can be models for additional efforts and national or regional policy.

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Sara Scherr, Ecoagriculture Partners/ Forest Trends, [www.ecoagriculturepartners.org](http://www.ecoagriculturepartners.org)  
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Lynn Foden, African Wildlife Foundation, [www.awf.org](http://www.awf.org)

### Meeting Organizers:

The **Africa Biodiversity Collaborative Group (ABCG)** comprises U.S.-based international conservation non-governmental organizations with field-based activities in Africa. ABCG organizations include: African Wildlife Foundation, Conservation International, IUCN-The World Conservation Union, Wildlife Conservation Society, World Resources Institute, and World Wildlife Fund. ABCG explores emerging conservation issues, shares lessons learned, and seeks opportunities for collaboration. Recent issues explored by ABCG include: The Linkages between HIV/AIDS and Natural Resource Management; Health Matters: The Importance of the Interface between Wildlife, Domestic Animal and Human Health for Conservation Success in Africa; Human Migration and Conservation: Issues and Interventions; Compensation for Land Lost for Protected Areas, etc. ABCG has been funded by The John D. and Catherine T. MacArthur Foundation, The Critical Ecosystem Partnership Fund, and the U.S. Agency for International Development. See: [www.abcg.org](http://www.abcg.org). Contact: [nancy.gelman@wwfus.org](mailto:nancy.gelman@wwfus.org)

The **Bushmeat Crisis Task Force (BCTF)** is a consortium of conservation organizations and scientists dedicated to the conservation of wildlife populations threatened by commercial hunting of wildlife for sale as meat. The BCTF operates under the direction of an elected Steering Committee and is funded by Supporting and Contributing Members. BCTF's primary goals are to: a) work with the general members of the BCTF to focus attention on the bushmeat crisis in Africa; b) establish an information database and mechanisms for information sharing regarding the bushmeat issue; c) facilitate engagement of African partners and stakeholders in addressing the bushmeat issue; and d) promote collaborative decision-making, fund-raising and actions among the members and associates of the BCTF. See: [www.bushmeat.org](http://www.bushmeat.org)

