



*A communal grazing area (common property resource) in highland Ethiopia.*

## Beyond the Farm: A New Look at Livelihood Constraints in the Highlands of Eastern Africa

**T**hroughout the highlands of eastern Africa, farming communities face critical challenges in providing for an ever-growing population while maintaining the productivity of basic resources (water, food, fuel, fodder). Most research and extension programs have approached this problem by focusing on the alleviation of farm-level productivity constraints,

largely through technological solutions. There is a strong push within national and international arenas to move toward broader units of analysis and intervention, with the aim of enhancing the sustainability of rural livelihoods as well as environmental services emanating from highland areas. Yet little treatment has been given to the issue of farmer motivations for thinking and acting beyond the farm level. Outcomes of a participatory assessment of landscape-level problems of concern to highland farmers of Ethiopia, Kenya and Tanzania shed light on this question, and point to contributions that can be made from research and development to address identified challenges.

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### Identification of Issues Demanding a Landscape Approach

To clearly identify landscape-level issues, two “indicators” were considered: 1) that greater benefits must accrue from collective than from independent action, and 2) that solutions must require an integrated ap-

proach to bridge disciplines and landscape components (trees, water, cropland and others). Five sets of issues emerged from this inquiry:

#### 1. Common Property Resource Management

Common property in the highlands of eastern Africa is generally limited to water



*Figure 1. Cow dung deposited during communal grazing periods in Ginchi, Ethiopia, is treated as an open access resource (despite individual ownership of land) and used as fuel. Open access to dung hinders the ability of individual landowners to make technological innovations aimed at restoring the fertility of outfields, demonstrating the need for collective action in negotiating solutions.*

resources (springs, rivers, wells), grazing land, forest resources, village roads and paths, and in some cases, livestock. Multiple problems were mentioned with regard to common property, including encroachment on different common property resources (CPR), deforestation and the loss of indigenous tree species, declining supplies of irrigation and drinking water, water contamination, and destruction of CPR from fire and water-demanding trees (namely Eucalyptus). A final problem, blockage of paths between neighboring farms and

**Farm-level problem identification and solutions are insufficient for addressing many livelihood constraints facing farmers in the highlands of eastern Africa.**

villages, is in large part an outcome of other problems as farmers and villages take actions to limit access to declining resources (drinking water) and to limit crop damage caused by stray animals and theft. Solutions to CPR-related problems clearly require collective action (Fig. 1).

### 2. Resource Access and Distribution

The second category refers to resources that are in short supply in absolute or relative terms. Communities are facing absolute shortages of water (for household consumption, livestock and irrigation), grazing and crop land, and forest resources (fuel wood, biodiversity). Other issues involve the inequitable distribution of existing resources by gender, age or landscape position, including individual ownership and control of watering points, land fragmentation, and property rights (unequal inheritance of land and livestock, insecure property rights for women).

### 3. Trans-Boundary Effects

The third set of issues involves declines in agricultural productivity stemming from failure of neighboring farmers to cooperate. They involve damage caused by drainage of water from fields; pests, disease, weeds, and rodents; and trans-boundary impacts stemming from the cultivation of certain species near farm boundaries (competition for nutrients, sunlight and water, and allelo-



Figure 2. Dense settlements with eucalyptus on farm boundaries competing for crop nutrients, sunlight and water.

pathic effects) (Fig. 2). Other trans-boundary effects include the destruction of crops from failure to control stray animals and fire.

### 4. Linkages between Productivity and Collective Action

The fourth set of issues includes areas in which collective action could significantly enhance farm productivity. They include the management of communal livestock (exotic breeds, oxen); cooperation in labor-intensive activities (land preparation, farmyard manure application, terrace construction); the maintenance of biodiversity (food crops, forages, trees); and control of crop and livestock pathogens. One farmer also stressed the need to reconcile traditional and modern beliefs on the

appropriate management of natural resources, given the increase in crop pests following abandonment of a traditional pest control practice (*hande*) in the East Usambara Mountains of Tanzania.

### 5. Linkages between Livelihood and Collective Action

The final category includes areas in which collective action is currently needed to enhance income or livelihood more broadly. They include organizational strategies aimed at improving access to inputs (quality seed and fertilizer) and markets; optimizing the management of existing resources (conflict resolution, corrective action to counter theft, upkeep of water supply infrastructure); and pooling of resources to establish joint enterprises, purchase labor-saving items (oxen, mills) or avoid sale of produce at sub-optimal prices. The latter can be achieved through cooperation in post-harvest storage infrastructure (to extend the shelf life of produce) and rotational credit functions—particularly in areas subject to food shortage where predatory buyers lend money to farmers in exchange for low farmyard prices.

## Conclusion

The host of issues emerging from a systematic, multi-country look into barriers to livelihood and agricultural productivity

beyond the farm level clearly illustrates the need to move beyond conventional areas of agricultural research and extension. In addition to looking at integration at broader spatial scales to understand the interactions between farm-level management practices and livelihood more broadly (human health, water supplies), it will be critical to consider solutions lying outside the sphere of technology. Social strategies to enhance farmer cooperation, minimize conflict and make better use of existing resources are sorely needed, as are user-friendly tools for analyzing trade-offs between system components and users themselves (farmers, villages)—for whom differential benefits accrue from alternative land use scenarios.

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