

## Food Security Is Ultimately Defined At The Household Level



**DR. DARYLL E. RAY**  
Agricultural Economist  
University of Tennessee

**O**ur last two columns have taken a look at the role of agricultural policy in increasing food security and thus reducing the number of people who experience chronic hunger in developing countries. In our survey we have identified policies that have had the effect of reducing the level of food security for many consumers and small-

scale agriculturalists and pastoralists in developing countries.

At the same time we have identified policies and practices that have the likelihood of increasing food security for the residents of those countries. In our experience, the best advice in the world will be ignored if those giving the advice are insensitive to the personal and cultural preferences of the people they are intending to help.

Food security will be enhanced if agricultural development specialists take local preferences as their starting point. Before they can do much, development specialists need to understand how, why, and what local farmers produce. Crop varieties and food preferences often vary from community to community, even within a small area.

Basic development policies fall into two general categories. In the first category the goal is to reduce the cost, increase the availability, or improve the quality of inputs used by agriculture. The way in which this is achieved is dependent upon the local situation. In the US much of this work was achieved through significant public investment in education, agricultural research stations, an extension service that transferred the fruits of education and research to farmers and farm families, and a network of low-cost agricultural credit institutions.

For a contemporary example of how developing policies can make a difference, consider what has happened recently in the Southern African country of Malawi. After the government began distributing corn seed and fertilizer to smallholder farmers at highly subsidized prices three or so years ago, Malawi's grain production tripled (<http://www.ipsnews.net/africa/nota.asp?id-news=43815>).

Malawi went from being food-aid dependent to an exporter of grain to neighboring Zimbabwe in a matter of a year or two. To achieve that success, the Malawian government had to risk donor support from international organizations such as the World Bank and International Monetary Fund, which opposed the policy.

The second category of policies involves ensuring dependable prices for the production of small-scale agriculturalists and pastoralists. This can be done in a number of ways but could involve returning to policies in developing countries that include single-desk marketing boards and the protection of local agricultural prices through the use of import tariffs. In the long-run, stable prices are as important to farmers as they are to urban consumers.

So far our discussion involves macro-level policies. This week we want to look at policies that involve increasing food security at the household and village level. The greater the degree of food security achieved at the household and village level, the fewer the food aid needs that have to be responded to at the national and international levels.

As outside experts, and there are always outside experts be they sponsored by governments, corporations or non-profit groups, prepare to work in a given community, they need to take local crops and practices as their starting point. While they may be experts in the production of corn (maize), cotton, and soybeans, they may be unfamiliar with local crops and the rationale behind local crop production and rotation practices.

Ethiopia's situation is a compelling example of the importance of considering local production practices and cultural food preferences when working with developing countries.

In the Oromo highlands of Ethiopia, farmers grow a crop that the Oromo call tafi (Eragrostis tef (Zucc.) Trotter). Ethiopia is the only country in the world where tafi is a staple crop, so it

would be easier for a visiting aid worker to focus on the local production of corn with which they are more familiar. In doing so, the aid worker would ignore a local crop that is easier to store than corn, is more drought resistant than corn, and provides a better balance of essential amino acids than all of the internationally-traded cereal crops in the world.

When combined with chick peas (garbanzos), tafi provides all of the essential amino acids necessary for protein production in the body. In addition, tafi straw is a nutritious feed source for the cattle that are used for plowing the land.

Often farmers maintain several varieties of tafi that grow well in their area. If the monsoon rains come early, they can plant a long-season variety to increase the chances of a high yield. When monsoon rains come at the normal time a medium-season crop can be planted. A short-season variety of tafi can be planted when monsoon rains come late. Tafi is considered a rescue crop that can be planted under restricted rainfall conditions that would doom crops like corn. In some areas tafi is grown in a rotation following chick peas planted late in the previous growing season so that the leguminous nitrogen is preserved for the tafi crop, increasing its yield.

While the current national yield of tafi is low (1 tn/ha or 15-20 bu/ac), research has identified varieties with the potential to increase yields to 6 tonnes per hectare (approximately 90-100 bu/ac). A serious publicly funded research program could result in the improvement of locally important varieties that could then increase the yields of farmers and the diets of both farmers and their neighbors.

In southern parts of Ethiopia, farmers grow a plant called enset (*E. ventricosum*) or false banana. The plant is grown for its root rather than its fruit and according to the United Nations Food and Agricultural Organization has provided "more foodstuffs per unit area than most cereals. It is estimated that 40 to 60 plants occupying 250-375 sq. meters [less than a tenth of an acre] can provide enough food for a family of 5 to 6 people." Enset can be intercropped with grain and tree crops.

They takes four or five years to mature so enset plants are started in a rotation over that period of time, ensuring a stable supply of food. Enset, when properly prepared, can be stored in the ground and remains stable for a long-period of time, helping moderate the effects of rainfall variation.

In our view, food security can be enhanced by working with farmers to stabilize and improve the production of crops that they are familiar with and that meet the cultural dietary preferences of the people involved.

Those of us of a certain age and older remember looking into the food pantries of our parents and grandparents and seeing shelf upon shelf of canned fruits and vegetables (and even meats). A careful examination of the jars indicated that some of them had been canned two or three years earlier. Having lived through the depression, our parents and grandparents wanted to make sure that they did not run the risk of facing hunger. With a well provisioned pantry, they knew that they would be able to feed their family even if the crops failed the next year. Thus food preservation was a risk mitigation strategy for farm families.

While some had been canning for many years, publicly – funded Extension homemaker workers and Extension pamphlets taught many the finer points of canning so that farm and city families could avoid the risk of food-borne illnesses caused by improper canning techniques.

Just as in the US, the storage of locally produced crops, combined with Extension research and education, can improve the food security of local households and villages. While much of the public discussion of food security at the global level has revolved around internationally traded crops, food security at the local level, beyond getting through short-term emergencies, can involve a wider range of crops. In Ethiopia it can involve both tafi and enset. In the US, in the past, it involved crops ranging from corn and green beans in some areas to collard greens and smoked hams in other areas. The important factor is not the crop, but that it can be grown locally and meets local cuisine requirements. △

*DR. DARYLL E. RAY: Agricultural Economist, University of Tennessee*