



Agricultural Biodiversity and Nutrition

More than 900,000,000 people are hungry every day. One in three people suffers from illnesses related to malnutrition and lack of essential nutrients, with the majority being women and children. While vitamin A and zinc deficiency together contribute to more than 500,000 child mortalities each year, at the same time diseases previously associated with affluence, such as obesity, type 2 diabetes and heart disease, are growing most rapidly in low- and middle-income countries.

The reasons for malnutrition are complex, but a prime culprit is the simplification of diets. In the fast-growing cities of developing countries, people obtain most of their energy from refined carbohydrates (mainly wheat, rice and sugar), and processed oils and fats, all of which are now cheaper than they have ever been. Local and traditional foods are often more nutritious as part of a diverse diet but have been neglected and forgotten. There is a growing recognition that protein and calories are not enough, and that sufficient micronutrients are essential components of food security and an adequate diet.

A complex problem

For several reasons one of the most difficult aspects of promoting the nutritional benefits of a diversified diet is how to quantify the exact contributions of individual elements to the diet. Nutrition composition tables, for example, are a primary source of infor-

mation but tend to disregard the differences among varieties of a particular food. They often also ignore locally important foods and ingredients such as seasonings and spices. Gaps in nutrition composition tables reflect larger gaps in agriculture and nutrition science, which have tended not to consider the role of traditional local plants and animals in the diets of rural populations. While these data are not especially important to farmers and most nutritionists, they are a significant factor in policy decisions about the role of dietary diversity. Such decisions can help to address the more immediate problems, such as loss of agricultural biodiversity and lack of access to more nutritious foods as part of diverse diets.

Cultural issues are another obstacle to the widespread adoption of a more diverse diet that can make full use of local and traditional foods. Precisely because these foods are traditional, they are often



perceived as “backward” and stigmatized by association with poverty. Well-orchestrated campaigns may be needed to change how people view specific foods, and demand for these foods is an essential element in conserving agricultural biodiversity. So too is an efficient market chain that unites farmers with consumers. And good evidence of the links between agricultural biodiversity and nutrition and health is also vital.

Bioversity International and health and nutrition

While the causes and determinants of undernutrition are better understood today, the design and testing of multi-sector packages that combine interventions on nutrition and disease control with food-system and livelihood-based approaches have been under-researched and under-developed.

As a result, approaches that use food systems to enhance food availability and diet quality through local production and local purchase as well as agricultural biodiversity are rare.

Bioversity’s research agenda is being expanded to develop strong methodological and empirical evidence on how biodiversity contributes to dietary diversity and nutrition, using a systems approach that considers multiple factors. We hope that the information generated will go a long way towards reasserting the primacy of food-systems approaches, including biofortification where appropriate, and will help policy-makers to understand that there are additional ways to tackle malnutrition, and that they often have multiple benefits beyond improving nutrition and health.

A Cross-Cutting Initiative

In 2004, a resolution of the seventh meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD) called for a global cross-cutting initiative on biodiversity and nutrition, to be developed through an international collaborative process involving Bioversity International, the Food and Agriculture Organization of the United Nations (FAO), and other partners. The cross-cutting initiative identified the contribution of agricultural biodiversity as a priority for improving the nutrition and health of the rural and urban poor. While many interventions, including supplementation, fortification and biofortification address these challenges, this initiative focuses on promoting traditional foods as a readily accessible, locally empowering, and sustainable source of quality nutrition through dietary diversity.

