



Healthy diets from sustainable food systems

A Bioversity International Initiative

The challenge

How can we ensure that 9 billion people will have access to a nutritious and healthy diet that is produced in a sustainable manner by 2050? This is the global challenge ahead of us.

Population growth and increasing urbanization are coinciding with an increase of health problems related to poor nutrition around the world. An estimated 795 million people suffer from insecure food supplies, while 2.1 billion people are obese or overweight. At the same time, 2 billion people lack essential vitamins and minerals critical for growth and development, such as vitamin A, iron and zinc. It is important to note that often these forms of malnutrition co-exist.

Diversifying diets that include high quality, safe and nutritious foods can reduce micronutrient deficiencies by providing a rich source of nutrients all year round. Yet national food systems are supplying less diverse food. This is reflected in diets that are monotonous and based on a few staple crops, especially in low-income countries where access to nutrient-rich sources of food, such as animal source foods, fruits and vegetables is a challenge.

Agricultural and tree biodiversity also contributes to healthy ecosystems and services that are vital for producing food. Pollinators, for example, are estimated to be responsible for up to 40% of the world's supply of nutrients.

Our research solutions

This Bioversity International Initiative studies how agricultural and tree biodiversity can be better used within food production systems through:

Rural to urban agri-food value chains

We investigate how agri-food value chains serve as a vehicle to connect producers who are often in rural areas, with consumers in peri-urban and urban areas. Nutrition-sensitive value chains that provide a diverse supply of foods can reach low-income consumers if the food is affordable and culturally acceptable, and can also improve rural livelihoods. This requires effective rural-urban linkages, an enabling environment of public and private policies and institutions, and increased efficiencies to ensure that producer prices provide sufficient incentive for quality and sustainable production.

Local agri-food systems

We analyze how a whole-diet approach can contribute to improved nutrition and health among low-income urban and rural consumers. We study the diversity of all local food sources for vulnerable populations, including 'forgotten' traditional foods, wild foods and foods available at the local market. We examine how these foods could be better used to fill nutrient gaps throughout the year.

We also investigate how food production systems can be enhanced through the increased use of biodiversity, for example, using crops and wild foods with the potential to adapt well to local conditions and contribute to nutrition and livelihoods.

Millets in India

Nutritious millets were once a strong part of traditional diets in Southern India before agricultural subsidies shifted attention to rice, wheat and maize and they became a ‘forgotten food’.

Bioversity International has been working for almost 15 years with partners in India, such as the M.S. Swaminathan Foundation and the Indian Council of Agricultural Research to promote the conservation and use of millets.

Results

India’s National Food Security Act incorporated millets into the public distribution system in 2013, meaning these nutritious grains are now available to more than 800 million people at a subsidized rate.

Improved market links for small-scale producers have seen restaurants adding millet-based dishes to their menus, and new income opportunities for women producing millet-based snacks.

In 12 districts in Central and South India, switching from white rice to minor millets in school lunches resulted in increased haemoglobin levels in children – up to 37% higher than the control group – within 3 months.



Biodiversity for Food and Nutrition in Brazil, Kenya, Sri Lanka and Turkey

The Global Environment Facility (GEF) ‘Mainstreaming Biodiversity Conservation and Sustainable Use for Improved Nutrition and Well-Being’ is led by Brazil, Kenya, Sri Lanka & Turkey:

- providing evidence on the nutritional value of agricultural biodiversity and its role in promoting healthy diets and strengthening livelihoods
- influencing policies to support the conservation and sustainable use of agricultural biodiversity for nutrition and well-being
- raising awareness through tools, knowledge and best practices for scaling up the use of biodiversity for food and nutrition in development programmes, value chains and local community initiatives.

Results

Even though the initiative only started in 2012, results are emerging. For example, Brazil is implementing a school-feeding programme to promote healthy eating habits in schools, which ensures 30% of procurement is from local family farmers. Sri Lanka is promoting nutritious traditional species through food outlets and food fairs.

Human and environmental health – a ‘win-win’ in Western Zambia

The Barotse floodplain in Western Zambia is one of Africa’s largest wetlands, rich in biodiversity but high in poverty. Rapid agricultural intensification focused on maize and rice is placing this diversity under pressure. In addition, local diets are heavily reliant on staple foods with little dietary diversification of nutrient rich food groups such as eggs, dairy, fruits and pulses.

Bioversity International and partners are exploring how biodiversity in the landscape can be better used to improve diets, incomes and ecosystem services. Activities include research in development with local communities to understand drivers of dietary patterns and food availability throughout the year, how the surrounding landscape is used and which ecosystem services it provides.

Results

A diversity of crops and wild foods with potential to adapt well to local conditions and to contribute to diets and livelihoods have been identified and are being tested in community learning plots. Local knowledge is being strengthened about healthy and sustainable diets.



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