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For a full copy of the book visit:  
[www.bioversityinternational.org/mainstreaming-agrobiodiversity/](http://www.bioversityinternational.org/mainstreaming-agrobiodiversity/)

## MEDIA SUMMARY

### Mainstreaming Agrobiodiversity in Sustainable Food Systems

*A scientific guide to the central role agrobiodiversity can play in future-proofing our food supply.*



In a brand-new guide, leading research centre [Bioversity International](http://www.bioversityinternational.org) reviews and analyses decades of research on the critical yet underappreciated role that agrobiodiversity can play in creating a more sustainable food system. The research provides the scientific basis for developing an “**Agrobiodiversity Index**”, a tool to help countries and agribusinesses identify the most impactful agrobiodiversity interventions and investments, that will help them contribute to reaching sustainable development and environmental targets.

“A well-researched book that illustrates the important, but undervalued, role of biodiversity in the world’s food systems. With a host of case studies, facts and figures about this growing area of research, this is a must-read for anyone interested in how we can use all our biodiversity resources for more nutritious food while reducing damage to the planet.”

H.E. Prof. Ameenah Gurib-Fakim, President of Mauritius

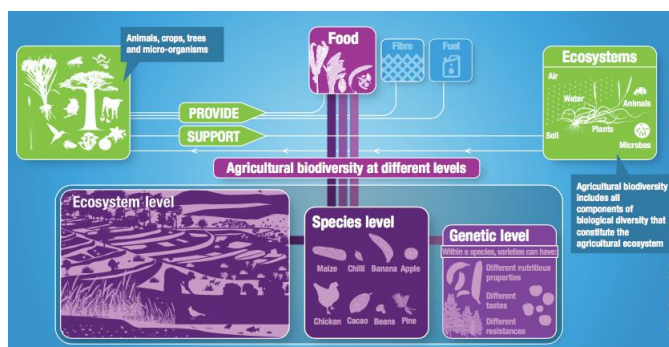
#### What is agricultural biodiversity?

Agricultural biodiversity (agrobiodiversity) includes the variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture. This includes crops, animals and trees. It can be explored on three levels: ecosystem, species and genetic.

#### How can agrobiodiversity make food systems more sustainable?

Our current food system is unhealthy and unsustainable, leaving millions undernourished or obese, degrading our environment and raising global temperatures. These very outcomes make it harder for our planet to feed an ever-growing population. By transforming the food system, we can tackle these issues at source. The guide provides the evidence that this transformation can be achieved through interventions in agrobiodiversity.

Agrobiodiversity is a **source of nutritious foods**. Using it also **promotes sustainability in food systems**, contributing for example to better soil quality, natural pest control and nutrient recycling. Furthermore, breeders and producers need to have this vast variety of agrobiodiversity available to them, in order to select and use the characteristics that could be necessary to tackle today’s challenges – from **drought tolerance to higher vitamin content and disease resistance**. However, our modern food system is increasingly relying on fewer and fewer crops - **only 12 crops and five animal species provide 75% of the world’s food**, and an **estimated 940 species of cultivated plants are at risk of disappearing**. Agrobiodiversity is being overlooked as a sustainable development solution.



“Biodiversity in food and agriculture is not only the foundation of a sustainable food system, it is at the very core of our health and livelihoods. This publication reminds us of the underutilized potential in our diets—of the thousands of food species that never make it to our plates—and the ways in which

tapping into this diversity not only builds a more resilient, sustainable food system but a more robust, thriving global community.”

*Simran Sethi, author of Bread, Wine, Chocolate: The Slow Loss of Foods We Love*

### **What does “mainstreaming agrobiodiversity” mean?**

This book showcases the untapped potential that agrobiodiversity has to address global challenges, from improving health to combatting climate change, through its ability to help us build better food systems. For the first time, it brings together decades of research that can help governments, funders and businesses integrate agrobiodiversity into plans and policies that seek to tackle these challenges and drive greater impact from these investments. It demonstrates that agrobiodiversity can be a more “mainstream” approach to sustainability issues.

### **How is agrobiodiversity currently being used to make food systems sustainable?**

The book outlines the scientific evidence for the impact agrobiodiversity can have on two key issues: **healthy diets** and **sustainable farming systems**. It also compiles evidence on how **diverse seed systems** and **agrobiodiversity conservation** support those sustainable food systems.

#### ***Case study 1: Improving nutrition with local fish species in Bangladesh***

In Bangladesh, where more than 20 million people suffer from malnutrition, fish consumption in extremely poor households has increased 19% over the last 30 years. But the intake of key nutrients has decreased or stagnated due to the lack of diversity in fish consumed. Small local species of fish offer optimal nutrition, due to their content of both essential fatty acids and micronutrients such as calcium, iron, zinc, vitamin A and vitamin B12. Two unique products – a fish flour and fish chutney – have been developed by WorldFish to make use of these indigenous fish. This initiative is not only saving the species, but ensuring their nutritional quality is being passed to expectant mothers and young children, to reverse the trend for malnutrition and stunting on the continent. **For a one-year-old child, just three tablespoons of the fish powder contains half the RDA of zinc and 100% RDA of vitamin B12.**



#### ***Case Study 2 - Smart fodder in France nourishes soils and livestock***

Yezid Allaya, a farmer from Montferrier-sur-Lez, France has come up with his own novel method for naturally improving soil quality, limiting weeds and improving yield, all through use of agrobiodiversity on his farm. During the fallow months (November to April), he plants a mixture of clover, winter grasses and vetch (of the pea family). These species have a high cold tolerance, meaning they grow well throughout the winter. When planted in combination, they have many benefits. The vetch is a legume, which fixes nitrogen to the soil making it healthier. The grasses produce a large number of roots, which improve the soil's ability to retain water and nutrients. When planted in combination, these species offer total soil cover, reducing weed infestation. In addition, both plants can be fed to his poultry giving them yet another sustainable function. **This method allows him to maintain yields without additional chemical inputs, while enjoying a range of other benefits that add to the overall sustainability of his farm.**

#### ***Case study 3: Traditional seeds outperform commercial varieties despite Ethiopia's deadly drought***

Back-to-back droughts in Ethiopia have left an estimated 7.7 million people in need of food aid. To increase the resilience and food security of vulnerable small-scale farmers, Bioversity International has been scrutinising seeds – in particular durum wheat. This crop used to cover up to 60% of Ethiopia's wheat production areas, but its use has steadily been replaced by higher yielding, easily marketable bread wheat varieties.

However, bread wheat is more susceptible to stripe and stem rusts, which together with prolonged drought have driven down productivity and put farmers under high risk of crop failure. Is there a forgotten durum wheat variety that can offer hope? To answer this question, farmers and breeders involved in Bioversity International's “Seeds for Needs” project evaluated 400 varieties of durum



wheat for performance. Results showed that the varieties ranked in the top 20 by both parties were not available on the market, despite their potential for growth in food-insecure marginal areas. **Two varieties showed such outstanding results they have now been officially approved by the Ethiopian government for distribution.**



#### **Case study 4: Farmers contracted to conserve quinoa varieties rejected by global market**

Quinoa's popularity in the global market has led to farmers planting limited varieties, in order to conform to market standards for uniform characteristics. Only 15-20 of the thousands of varieties of quinoa that exist in Peru are found in national and export markets.

However, these varieties have characteristics important for nutrition and food security in the face of climate change and emerging pests and diseases. Bioversity International and partners have been developing a "Payments for agrobiodiversity conservation services" (PACS) approach, capable of incentivising farmers to conserve such threatened varieties that are of global importance. As a part of this initiative, Kai Pacha Foods is creating niche health foods that utilize these varieties, including quinoa milk. Kai Pacha is working with farmers that belong to the Huataquita and Maiku Marka co-operatives, guaranteeing them an income for planting the chullpi variety, which is highly nutritious, has a hard husk that stops pests destroying it, and has the ideal texture for making milk. **Conserving this variety will make the quinoa supply chain and smallholder farmers more resilient to shocks, offering a nutritious and hardy option when difficulty strikes.**

#### **What is the Agrobiodiversity Index?**

This book lays the foundation for an Agrobiodiversity Index. The Agrobiodiversity Index will help companies and countries to compare multiple strategies for investing in resilient and sustainable supply chains and product lines, through interventions in agrobiodiversity. It will guide them towards capital allocation decisions in agri-food supply chains that will reduce risk, capitalise on untapped opportunities and offer substantial return on investment. It will allow investors to screen for bonds and equities with higher index scores and allow bond issuers to credibly label agro-biodiversity themed green bonds.

Developing this science-based, fit-for-purpose risk-assessment tool will allow companies and financial institutions to shift global markets, while also incentivizing and benefiting from biodiversity in agricultural production.

#### **Who supports the Agrobiodiversity Index?**

A number of countries, such as Ethiopia, India and Peru, and leading agribusinesses have expressed interest in the development of an Agrobiodiversity Index, including Sainsbury's and Syngenta.

The world is changing. Global warming, extreme weather and volatile prices are making it harder for farmers and growers to produce the foods our customers love. Sainsbury's customers care about where the products they buy come from, and how they are grown, and they put their trust in us to do the right thing on their behalf. Which is why we are committed to working with our suppliers, farmers and growers in the UK and around the world to optimize the health benefits, address the impact and biodiversity of these products and secure a sustainable supply."

- Beth Hart, Head of Agriculture, Sainsbury's

#### **About Bioversity International**

Bioversity International is a global research-for-development organization. We have a vision – that agricultural biodiversity nourishes people and sustains the planet.

We deliver scientific evidence, management practices and policy options to use and safeguard agricultural and tree biodiversity to attain sustainable global food and nutrition security. We work with partners in low-income countries in different regions where agricultural and tree biodiversity can contribute to improved nutrition, resilience, productivity and climate change adaptation.

Bioversity International is a CGIAR Research Centre. CGIAR is a global research partnership for a food-secure future.

[www.bioversityinternational.org](http://www.bioversityinternational.org)