

**SD**  
**=**  
**HS** Sowing  
Diversity =  
Harvesting  
Security

# BRIEFING NOTE



**Plant biodiversity** is key to ensuring family farmers' food and nutrition security and resilience in response to the COVID-19 crisis



**OXFAM**

# Plant biodiversity is key to ensuring family farmers' food and nutrition security and resilience in response to the COVID-19 crisis

This briefing note is authored by Gisella Cruz-Garcia and Bert Visser. This work is part of the Sowing Diversity = Harvesting Security program ([www.sdhsprogram.org](http://www.sdhsprogram.org)) Phase II (2019-2022). Funding for the program is provided by the Swedish International Development Cooperation Agency (Sida).

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**COVER PICTURE:** ASOCUCH. Women from Villa Alicia Farmer Field School, after taking care of neglected and underutilized vegetables in their home garden in Todos Santos Cuchumatán, Guatemala.

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## Acronyms

<b>FFS</b>	Farmer Field School
<b>SD=HS</b>	Sowing Diversity = Harvesting Security
<b>ToT</b>	Training of Trainers

# PLANT BIODIVERSITY

FOR FOOD  
AND NUTRITION

**Malnutrition is the leading cause of death and ill health worldwide, and in particular in developing countries. Over three billion men, women and children cannot afford a healthy diet. The COVID-19 crisis has made food and nutrition insecurity even worse, particularly for family farmers, who produce most of the world's food. What proven best practices have helped family farmers through this crisis? In this article you will read how family farmers from China, Nepal, Uganda, Zambia and Guatemala have increased their self-sufficiency by using edible plants growing in their surroundings. We argue that this should have major implications for policy and decision-making in times of food crisis.**

Malnutrition remains one of the greatest global health challenges, and women and children are its most visible and vulnerable victims. Shortly after COVID-19 was declared a global pandemic, the **2020 Global Nutrition Report** concluded that malnutrition is leading cause of deaths and ill health worldwide. Indeed, the global burden of disease is primarily diet-related, as the lack of healthy food items and nutrients appears to be a **critical part of disease risk**. As asserted by **The State of Food Security and Nutrition in the World 2020**, three billion people cannot afford healthy diets. This implies that the world is not on track to meet its zero-hunger goals. The COVID-19 crisis has worsened food and nutrition insecurity, reducing access to healthy foods around the globe. For instance, by 2022 this could result in an additional **168,000 child-deaths and 2.1 million maternal anemia cases** in low and middle income countries. Food security cannot be achieved without **access to adequate nutrition** – in terms of protein, energy, vitamins and minerals – for all household members at all times.

The wide diversity of existing food plants can contribute to reducing and even ending malnutrition and food scarcity by adding diversity and nutritional value to the diets of men, women and children. In Asia, wild food plants have been documented as

a key source of vitamins, minerals, secondary metabolites and essential oils. In Africa, indigenous greens have been termed ‘super vegetables’ for their potential to contribute to better nutrition. Latin America is home to ‘super fruits’ rich in vitamins and other important nutrients.

## Plant biodiversity for food and nutrition

### FOOD PLANT DIVERSITY ON EARTH

People have used 7,000 known species of edible plants as food throughout human history. They grow not only in farmers' fields, but also in home gardens and forests, alongside roadsides and lakes, across different types of environments. The plant kingdom hosts plenty of edible species with high potential to diversify our diets, address nutritional requirements and shortcomings, mitigate risks in agricultural production, and provide rural households with additional income through commercialization. Nowadays, however, only 30 crops account for 95% of our energy intake – and only four (rice, wheat, maize and potato) cover 60% of our caloric needs.

Despite their potential to contribute to coping with the food, health and climate crises, most edible plant species are usually overlooked in research, markets and policies on food and agriculture. The increasing loss of biodiversity, largely caused by unsustainable practices and climate change, is leading to the loss of many edible plants.



## Increased food insecurity among family farmers

Family farms occupy around 70-80 percent of farmland and **produce more than 80 percent of the world's food** in value terms. About 90% of the world's farms are family farms and most belong to **poor and food-insecure smallholder farmers** in rural areas of developing countries. The pandemic is worsening the food and nutrition crisis they face: they have less access to food and less income, while the prices of some foods that they used to buy to diversify their diets have gone up, increasing their food insecurity. How can plant biodiversity – and the traditional knowledge associated with it – help to solve the ongoing healthy food crisis, which has been deepened by the pandemic?



## The solution is at hand

Family farmers hold most of the traditional knowledge associated with food plant biodiversity. In this crisis, some have started to realize that they have a major part of the solution in their hands. They are finding answers in the biodiversity of their surroundings, using the diversity of available plants to ensure they have enough food during the pandemic. They have realized that edible local species offer a solution that is both healthy and affordable, given that they can be picked ‘for free’. These farmers are remembering and sharing traditional knowledge, and revalorizing their local resources. They see that local biodiversity and traditional knowledge hold the key to building rural household resilience and food and nutrition security during the COVID-19 crisis. They can act as a vanguard, assisting their communities in improving their diets.



## Local food plants as a safety net

Local food plant diversity brought ease of mind for highland family farmers from Yunnan, China, during the COVID-19 pandemic, as indicated by Ms. Yufen Chuang and Ms. Xin Song from Farmers' Seed Network. Lockdown reduced the supply of vegetables and meat from local markets, but family farmers did not face food shortages: they were able to be self-sufficient, ensuring good nutrition based on wild food plants and local crops. Smallholder farmers from Guzhai community in Guangxi, realized the importance of wild vegetables and started to conduct trials of managing crops including *herba emiliae*, goji berry, cassia tora and local tomato. They grow crops that are easy to store such as millet, maize, pumpkins, radishes, potatoes, carob beans and traditional legumes to cope with the COVID-19 pandemic lockdown.

In the Terai region of Nepal, the lockdown restricted communities' access to food from markets. Farmers responded by using more local plants – such as wheat, wild leafy vegetables, mushrooms, beans, pumpkins and jackfruit – according to Achyut Gaire, Saroj Pant and Rajendra Dhakal, from LI-BIRD and Oxfam in Nepal respectively. Mrs. Neelam Chaudhary explained that many women

from her village went back to collecting *bihi* (a wild medicinal vegetable from the forest) and taro, which used to be the tradition before they started to buy vegetables at the market. Mrs. Gita Devi Chaudhary added: 'During the lockdown the vegetable prices went up and there was a shortage of potatoes. We then used wild yam and taro to make curry. We also made *masaura* (dried mix of yam and taro) to store it for a longer period. For the coming weeks, we will not have problems even if there are no vegetables in the market.'

In Guatemala, neglected and underutilized species are playing a key role in the daily diet of family farmers during the pandemic, as detailed by Mr. Reinaldo Mendoza from Chicoy Todos Santos Cuchumatán community to the staff of the Asociación de Organizaciones de los Cuchumatanes (ASOCUCH). Reinaldo indicated that gathering food plants which used to be regarded as 'underutilized' – such as *hierba blanca*, *nabo*, *hierba mora*, *bledo* and *chunis* – has become an important strategy in his community to cope with food scarcity. Nowadays, families consume these plants twice a day as part of their main meals, and they are increasingly aware of their nutritional value.

## Local food plants as a safety net

Farmers from Chirundu district in Zambia, such as Mr. Julius Mufana, have been coping with food scarcity by gathering more wild fruits including *njiyi*, *makunka*, *mang'ombyo*, *nchenje*, tamarind and baobab fruit. Last year, the Community Technology Development Trust (CTDT) built community seed banks in Zambia to preserve the seeds of local food plants while working to revive the traditional knowledge and culture associated with them.

These examples illustrate how local food plant diversity, including wild species, can constitute a rural safety net during the pandemic. Local food plants help to ensure self-sufficiency, reduce dependency on markets and improve food and nutrition security – which is crucial for family farmers' resilience not only in times of crisis, but at all times.



### Building and diversifying home gardens

Mr. Geoffrey, a farmer from Adjumani district in Uganda, explained to the Eastern and Southern Africa Small-scale Farmers' Forum (ESAFF) staff: '[During this period] I have created enough time for my garden day in and out. I am always in the garden ensuring that I plant enough food in case things do not go back to normal. However, it has also been difficult to access different types of seeds.' Farmers organized in Farmer Field Schools (FFS) as part of the Sowing Diversity = Harvesting Security program (SD=HS) also planted local vegetables to help them access healthy food during the pandemic.

In Zambia, the pandemic coincided with the destruction of the staple crop harvest due to the fall armyworm. Ms. Euckeria Samba from CTDT indicated that farmers from Chirundu resorted to gardening and preserving the majority of their harvested produce.

With the support of ASOCUCH, family farmers in Guatemala built 1,060 home gardens last year. These included 15 species of local food plants, largely those which had been underutilized, and greatly helped farmers to cope with the food crisis caused

by the pandemic. Organized in FFS, they also recovered underutilized species such as *apazote* for use in homemade meals and remedies. Farmers are now selling these plants to other communities, which provides them with an additional source of income in this time of crisis.

It has been widely recognized that home gardens play an important role in diversifying the diets of family farmers, ensuring a wider intake of micronutrients, and conserving biodiversity. As exemplified by these experiences from Uganda, Zambia and Guatemala, the pandemic made the importance of home gardens for their food and nutrition security even more prominent.

## Bringing family farmers to the forefront

These stories from family farmers clearly illustrate the important role that plant biodiversity and traditional knowledge can play in ensuring food and nutrition security for millions around the world. Local food plants have been functioning as a rural safety net during the pandemic, ensuring the resilience of family farmers while preserving biodiversity. These are roles these plants can play at all times, so these experiences should be taken into account in national policy development and economic measures to recover from the crisis.



## Bringing family farmers to the forefront

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### SOWING DIVERSITY = HARVESTING SECURITY

**SD=HS** is a global program coordinated by Oxfam Novib, currently implemented by Oxfam country offices and partner organizations in eight countries: Uganda, Zambia, Zimbabwe, Peru, Guatemala, Laos, Nepal and China. Our program aims to rescue and promote crop and food diversity. We believe indigenous people and smallholder farmers – men, women and youth – should be able to enjoy their Farmers' Rights and have the capacity to access, develop and use agrobiodiversity to improve their food and nutrition security under conditions of climate change.

Our work on local food plants for nutrition aims to increase the diversity and quality of diets, and strengthen communities' strategies to cope with seasonal cycles of food scarcity, through improved management and use of local plant biodiversity. It uses Farmer Field Schools and other participatory approaches to strengthen farmers' capacities to manage plant diversity. Our starting point is a community's knowledge, cultural values, needs and priorities. We work with a gender approach, helping

to strengthen the position of women and youth in households, communities and institutions.

Our activities include management of local food plants (e.g. sowing, propagation, germination, seed storage and sustainable harvesting in the wild), food preservation and preparation, formation and diversification of school and home gardens, organization of seed and food fairs, cross-generational exchange dialogues, and establishment of community seed banks and networks of seed exchange. During the pandemic we also distributed seed kits of local vegetables to nearly 2,000 smallholder farmers in Nepal.

By the end of 2020, we had established 234 Farmer Field Schools (FFS), reaching more than 5,300 smallholder farmers, and trained over 400 facilitators (more than half of them women, and more than a quarter youth) for FFS on Local Food Plants for Nutrition.



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