

WORKING PAPER

R E P O R T O F T H E

**South-South Cooperation Forum on
Food Security and Agrobiodiversity in
Times of COVID-19 and Climate Change**

30 NOVEMBER – 2 DECEMBER 2020



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The South-South Cooperation Forum on Food Security and Agrobiodiversity in Times of COVID-19 and Climate Change was the first of its series. It was jointly organized by UNEP–IEMP, Poverty–Environment Action and their partners: the Global Alliance for the Future of Food, the International Centre for Integrated Mountain Development (ICIMOD), the International Food Policy Research Institute (IFPRI), the International Fund for Agriculture Development (IFAD), UNDP and UN Women.

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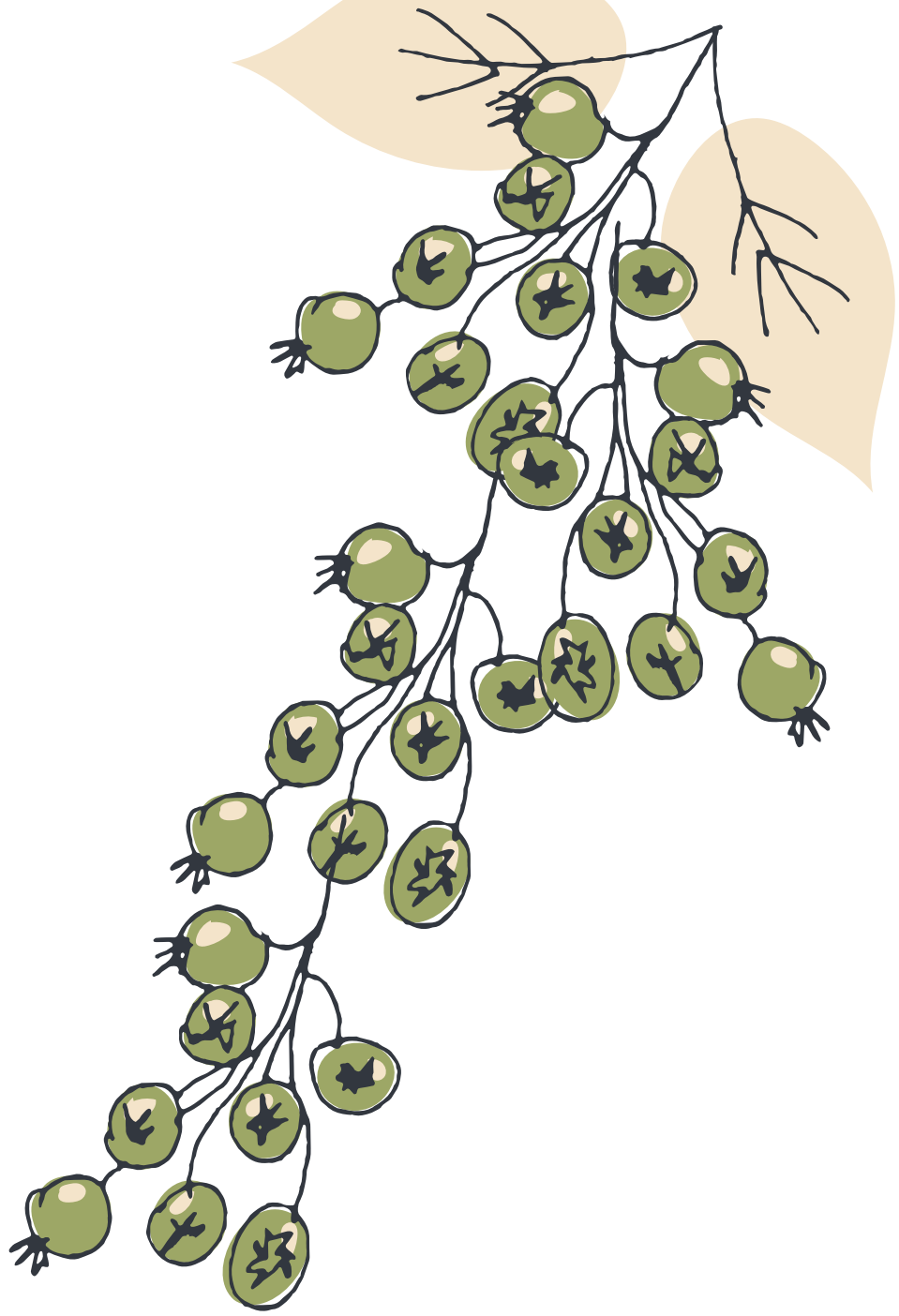
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Preface

This working paper was prepared in connection with the South-South Cooperation Forum on Food Security and Agrobiodiversity, a webinar hosted 30 November to 2 December 2020 under the auspices of the United Nations Environment Programme in collaboration with the Global Alliance for the Future of Food, International Centre for Integrated Mountain Development, International Fund for Agricultural Development, International Food Policy Research Institute, United Nations Development Programme, and UN Women.

South-South cooperation is used by United Nations (UN) Member States, international organizations, academics, civil society and the private sector to collaborate and share knowledge, skills and successful initiatives in support of the 2030 Agenda for Sustainable Development. The first South-South Cooperation Forum explored cross-cutting themes related to the [2021 UN Food Systems Summit](#), the [2021 UN Climate Change Conference \(COP-26\)](#), the [3rd UN Decade for the Eradication of Poverty \(2018-2027\)](#) and the [UN Decade on Ecosystems Restoration \(2021-2030\)](#). It built on global transformative experiences, good practices and technical cooperation among developing countries in the global South.

With the overall goal of solidarity and integrity for food security and biodiversity conservation in developing countries in the context of COVID-19 and climate change, the global webinar also aimed to contribute to the UN Food Systems Summit 2021 to be held in New York in September 2021; the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP15) to be held in Kunming, China, in October 2021 and spring 2022; the second part of the fifth session of the United Nations Environment Assembly to be held in Nairobi in February and March 2022; and the development of a potential SDG 2: Zero Hunger [Acceleration Action](#).

This paper presents the key outputs of the forum from thought leaders on the thematic areas of discussion with the aim of disseminating them widely among UN Member States and stakeholders.



Introduction

The ongoing COVID-19 pandemic has dramatically reminded us how even the tiniest life forms can indiscriminately wreak untold damage to our societies. The pandemic is likely to influence social, economic and environmental outcomes for years or even decades to come. Arrival of the disease coincided with the much-anticipated global “Super-Year for Nature” with a focus on biodiversity, nature, climate change, ocean sustainable use and improving progress on achieving the 2030 Sustainable Development Goals (SDGs) of the United Nations (UN). Climate resilience in agriculture aligns closely with governments’ national adaptation and mitigation plans, with all the biospheric SDGs as well as SDG 5, and locates women farmers and food producers centrally in the UN Decade on Ecosystem Restoration 2021–2030.

The COVID-19 pandemic poses the greatest challenge to achieving all 17 SDGs.

The COVID-19 pandemic is an **unprecedented global public health crisis** and one of the most serious threats to humanity, in terms of both lives and livelihoods, in modern history. It poses the greatest challenge to achieving all 17 SDGs. It has had devastating impacts on vulnerable economies, especially those in the global South. According to recent United Nations Environment Programme (UNEP), Food and Agriculture Organization of the United Nations (FAO), World Bank Group and other frontline reports, both human survival and sustainability are at risk from this pandemic – adding to agrobiodiversity decline and related issues of a failing food system in the context of climate change.

Evidence shows that **vulnerability to food insecurity and climate change are inextricably linked**. In the near term, natural disasters and climate-induced hazards negatively affect food systems and increase livelihood risks and food and water emergencies. For countries in the global South, food production systems that are export focused, farming systems that are monocultural and input heavy, poor applications of early warning systems, insufficient disaster preparedness, low emergency response, and poor reconstruction and recovery strategies make already hazard-prone victims suffer the greatest consequences. Additionally, the failure of the public sector to sufficiently invest in education, social infrastructure – including access to information and communications technology – and the rural sector has methodically worked against girls and women relative to boys and men. A looming hunger pandemic will hit women hardest as they are systematically displaced. This year, the entire East and Southern African region has been exposed to drastic

environmental conditions including extreme rainfall, prolonged drought and locust swarms. The most recent climate predictions for the region forecast continuing climatic extremes.¹

U.S. President John F. Kennedy famously said, “When written in Chinese, the word ‘crisis’ is composed of two characters – one represents danger and one represents opportunity.” In the face of these challenges and opportunities to build back better, this working paper was prepared for, and subsequently informed by, the **South-South Cooperation Forum on Food Security and Agrobiodiversity**, a virtual event hosted 30 November to 2 December 2020.² The forum – and this paper – probe the core issues of food security and agrobiodiversity in the context of the COVID-19 crisis and climate change.

Specifically, the forum focused on the nexus of (i) **equitable food security systems** for producers and consumers, (ii) **resilience in natural biodiversity systems** to underpin food security and the public commons and (iii) **interdisciplinary and inclusive approaches** in the recovery from the pandemic – all informed by a principle of gender responsiveness and building on the global transformative experiences, good practices and technical cooperation among developing countries in the global South. The forum’s discussion was centred around a set of key questions aimed at contributing to the acceleration of actions in the global South.

This working paper identifies the multiple and systemic **challenges** of food security and agrobiodiversity in the context of COVID-19 and climate change, articulates near-term **opportunities** for addressing these and frames key questions related to **acceleration actions** to be undertaken in the global South. Its final **synthesis** section presents answers to these questions as discussed in the forum. The aim of this information is to spark a recommitment to – and accelerate actions aligned with – the SDGs in the public, private and other sectors in the global South.

The forum and this paper probe the core issues of food security and agrobiodiversity in the context of the COVID-19 crisis and climate change



Challenges



The worst effects of the current pandemic will be experienced by the poorest and most vulnerable groups in the world.

Challenge 1: In the COVID-19 and climate change context, food security in the global South is increasingly at risk, especially for female smallholder farmers in rural areas

According to the latest UN estimates, across the planet, the COVID-19 pandemic could push as many as 132 million more people into chronic hunger by the end of 2020.³ It is expected that the worst effects of the current pandemic will be experienced by the poorest and most vulnerable groups in the world – including the landless and displaced, subsistence farmers and farmworkers as well as smallholder farming households and female-headed farming households in developing countries. Approximately 80 per cent of people suffering from hunger and/or malnutrition live in rural areas. Roughly 50 per cent of them are smallholders, 20 per cent are landless farmworkers, 10 per cent are gatherers and pastoralists, and the remaining 20 per cent are classified as urban poor.⁴

In **sub-Saharan Africa**, the number of hungry people rose to 234.7 million in 2019.⁵ Sub-Saharan Africa thus has proportionally the highest rate of undernourished people worldwide: 22 per cent, with high gendered gaps in nutrition. This pandemic makes the situation even worse. The World Bank reports that the COVID-19 pandemic may create a severe food security crisis in Africa.⁶ Local agri-food supply chains are already experiencing disruptions caused by deteriorating food production and supply.

Gender inequality and the problem of hunger are interlinked. Globally, women are disproportionately affected by hunger: 70 per cent of the hungry are female. This is due to structural discrimination against women and girls. The pattern is also visible in the smallholding agricultural sector. Women are the majority of smallholder farmers, maintaining substantial agriculture and food production in developing countries and committed to doing all they can to secure their children's and family's livelihood. The UN has confirmed that the pandemic has put the SDGs out of reach, notably in terms of gender equality and women's empowerment due to a rise in domestic abuse and a decrease in health services. Many children will not return to school once they

reopen.⁷ This disruption in education is one of the biggest impacts of COVID-19 and is likely to be particularly pronounced for girls.

The **agricultural activities of women** have been affected to a greater extent than those of men – this is particularly worrying, given that they were already at a disadvantage in accessing productive resources. Yet, rural women are showing their resilience in the face of the crisis. As a recent report by the International Fund for Agricultural Development points out, “in times of crisis, rural women are the key that holds families and rural communities together – and in times like these, they need our support more than ever.”⁸ This suggests that women need social, economic, environmental and political empowerment; that they are absolutely vital to recovery; and that the pandemic may present a turning point in recognizing and valuing their care and stewardship responsibilities.

With climate change **impacts becoming pervasive in crop systems**, it is likely that the risk of pandemic situations involving human health and food systems may worsen. In the long run, climate change itself threatens to become the greatest obstacle to ending hunger and malnutrition. Climate change has significant negative impacts on food production in agriculture, livestock and fisheries, and has disrupted income generation from food systems.

Challenge 2: Loss of biodiversity – agrobiodiversity in particular – will further stress food production and resilience building

The Global Biodiversity Outlook 5 shows that **biodiversity is declining at an unprecedented rate**, and that the pressures driving this decline are intensifying.⁹ None of the Aichi Biodiversity Targets will be fully met; this in turn threatens achievement of the SDGs and undermines efforts to address climate change. According to the evaluation of Target 13, the genetic diversity of cultivated plants, farmed and domesticated animals, and wild relatives continues to be eroded. The wild relatives of important food crops are poorly represented in ex situ seed banks that help guarantee their conservation and which are important for future food security. The proportion of livestock breeds that are at risk or extinct is increasing, although at a slower rate than in earlier years. Wild relatives of farmed birds and mammals are moving closer to extinction. Target 13 has not been achieved.

In a self-defeating irony, **food production is the greatest driver of biodiversity loss**, land use change and deforestation today,¹⁰ and yet it is extremely dependent on the healthy functioning of nature. For example, three-quarters of all food crop types – including fruits and vegetables and some of the most important cash crops like coffee and almonds – require animal pollination. However, pollinators are under threat, and \$235–\$577 billion in annual global crop output is at risk as a result. Food production represents 70 per cent of global freshwater withdrawals,¹¹ and under current modes of agro-industrial and fossil fuel-intensive methods, is a major driver of both climate change and hunger.¹²

Rural women are showing their resilience in the face of the crisis.



It is particularly important, in terms of food security, to **halt the rapid loss of biological diversity** of genes, varieties, breeds, species and entire ecosystems. Progress in plant and animal breeding relies heavily on the availability of a wide pool of genetic material. This great biological diversity is mainly found in wild varieties, on traditional farms or in the wilderness in countries of the global South.

The wide range of **biodiversity issues linked to food security** are well documented by FAO.¹³ Ongoing national and international debates about selective breeding and genetically modified organisms are critical, including the use of biocides that cause collateral damage to other species. Some issues bridge genetic, species and ecosystem-level concerns. Take, for example, disease sources in marine and freshwater aquaculture systems. Livestock food supply that includes offal from diseased sources has been a significant causal agent for mad cow disease. The traceability and certification mechanisms that are critical in almost all internationally traded products must be incorporated into local systems as well.



Challenge 3: How to build back better and rebuild the loss of gained ground on the SDGs

While significant achievements had been made on different targets, the **COVID-19 crisis has upset progress** towards achieving the SDGs. The newly released SDG report shows that progress has been stalled or reversed on inequalities, the rate of climate change and the number of people going hungry.¹⁴ Grounds gained have been lost, and it is critical to reclaim the lost ground and build back better after COVID-19.

Large-scale financial decisions and actions could reinforce a return to a largely unsustainable situation.

Although unprecedented, losses made in the wake of COVID-19 and the negative impacts of climate change justify the quest to make 2021–2030 the decade of action to achieve the SDGs. Despite the vast financial resources available in the world, inadequate preparedness, poor international cooperation, and a lack of unity and solidarity during the COVID-19 crisis have exposed the **precarious nature of global multilateralism** which has failed to address the crisis. McKinsey & Company note that “the coronavirus is not only an immense health crisis – it’s also an imminent restructuring of the global economic order... Our answer is a call to act across five stages...to find an economically and socially viable path to the next normal.”¹⁵ Lessons learned from the COVID-19 crisis should mark the turning point for global governance to accelerate achievements of the SDGs by the 2030 deadline. The sustainable path ahead to full national and global recovery must be transformative. Some call it a “nature-positive recovery.”

The challenge or danger remains that large-scale financial decisions and other actions taken over the coming months and years could reinforce a return to a previous, still largely unsustainable, situation globally and in many countries.



Opportunities

Opportunity 1: Promoting an integrated approach for achieving the SDGs, food insecurity, biodiversity loss and climate change in particular

In its next Medium-Term Strategy (2022–2025), UNEP affirms that it will **strengthen the transformational role of the United Nations Environment Assembly** (UNEA) in environmental governance to support the achievement of internationally agreed environmental goals and implementation of the 2030 Agenda in a post-COVID-19 world. It will promote policy coherence, international agreements, and cooperation on issues of regional and global significance by supporting relevant intergovernmental processes and regional and national institutions. This nexus is at the core of Agenda 2030 and contributes directly to the achievement of all SDGs. It is also called for by many UNEA resolutions. UN COVID-19 programmatic responses provide ways for accelerating action on environmental determinants of health by partnering with others and strengthening cross-sectoral collaboration to act on the mutually reinforcing interlinkages between the health of the planet and the health of its inhabitants.

To **promote an integrated approach** on the ground, a few examples within the UN system should be referenced. These include Poverty-Environment Action for Sustainable Development Goals, the Partnership for Action on Green Economy (PAGE), The Economics of Ecosystems and Biodiversity (TEEB), UN Women Eastern and Southern Africa Regional Office (ESARO) and the UNEP–International Ecosystems Management Partnership Flagship Programme on Climate, Ecosystems and Livelihoods (CEL). All of these have already provided good cases of integrated approaches to address challenges that have multiple impacts.

Poverty-Environment Initiative and Action. Through inter-agency collaboration and partnership with the private sector and stakeholders, the United Nations Development Programme (UNDP) and UNEP, along with the United Nations Capital Development Fund (UNCDF), FAO and UN Women, came together under the UNDP-UNEP Poverty-Environment Initiative (PEI) to improve the ability of governments in developing countries to better govern natural resources and reduce poverty.



UN COVID-19
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Launched in 2005 with the aim of promoting environmental sustainability and advancing the intertwined challenges set by the SDGs, PEI operated in 28 countries – mainly in the global South – under four regional programmes in Africa, Asia Pacific, Eastern Europe, and Latin America and the Caribbean. In its new formation launched in 2018, Poverty-Environment Action for Sustainable Development Goals, fewer countries are targeted. Drawing on lessons learned and progress made by PEI, Poverty-Environment Action’s main aim is to **strengthen integration of poverty-environment-climate objectives into policies, plans, regulations and investments** of partner countries to accelerate delivery of the 2030 Agenda.

PAGE. The Partnership for Action on Green Economy seeks to **put sustainability at the heart of economic policymaking**. The partnership supports nations and regions in reframing economic policies and practices around sustainability to foster economic growth, create income and jobs, reduce poverty and inequality, and strengthen the ecological foundations of their economies. PAGE is a direct response to the Rio+20 Declaration, “The Future We Want,” which called upon the UN system and the international community to provide assistance to interested countries in developing, adopting and implementing green economy policies and strategies. Bringing together the expertise of five UN agencies – UNEP, the International Labour Organization (ILO), the United Nations Industrial Development Organization (UNIDO), UNDP and the United Nations Institute for Training and Research (UNITAR) – and working closely with national governments, PAGE offers a comprehensive and coordinated package of technical assistance and capacity-building services.

TEEB. The Economics of Ecosystems and Biodiversity is a global initiative focused on “making nature’s values visible.” Its principal objective is to **mainstream the values of biodiversity and ecosystem services into decision-making** at all levels. It aims to achieve this goal by following a structured approach to valuation that helps decision-makers recognize the wide range of benefits provided by ecosystems and biodiversity, demonstrate their values in economic terms and, where appropriate, capture those values in decision-making.

UN Women ESARO. ESARO’s Women’s Economic Empowerment unit has been supporting a comprehensive program in the East and Southern Africa region to **ensure that climate-resilient competencies are matched with progressive capacity strengthening and training**. Many of these countries have arid areas and remote environs where the most vulnerable are exposed to climate risks, food insecurities and vulnerable livelihoods. The programs undertaken are diverse, ranging from tilapia aquaculture to greenhouse production, ground-nut farming and the governance of farm cooperatives. UN Women will continue these programs while strengthening an interdisciplinary approach to address the climate change–food security–trade–women’s empowerment nexus through 2021 and beyond.

CEL. UNEP has launched its Flagship Programme on Climate, Ecosystems and Livelihoods, which serves as the UNEP-IEMP’s Ten Year Strategy (2016–2025). Its objective is to improve livelihoods by **building climate resilience and restoring**

and conserving key ecosystems in developing countries. Such a climate-ecosystem-livelihoods nexus approach is implemented in about 30 developing countries in Asia Pacific and Africa and supports implementation of the Paris Agreement and achievement of the SDGs.

In February 2020, UNEP made a joint submission with the Alliance of Biodiversity International and the International Center for Tropical Agriculture (CIAT) on **Biodiversity, Nutrition and Dietary Health** in the Zero Draft of the Post-2020 Global Biodiversity Framework.¹⁶ The submission proposed revisions to key goals, targets and indicators of the Zero Draft (CBD/WG2020/2/3) for consideration by the Open-Ended Working Group at its second meeting. The revisions include suggested additional milestones and indicators which strengthen opportunities to address food systems, biodiversity, nutrition and dietary health.

Opportunity 2: Promoting South-South Cooperation for effective delivery of capacity building, knowledge sharing and technology transfer

The **UNEP Strategy South-South Cooperation and Triangular Cooperation** was initiated in 2018. Significant progress has been made, as highlighted in the report *“South-South Cooperation in Action: Stories of Success,”* released in 2020. The strategy offers a solid platform for promoting immediate actions and enhancing partnerships in tackling the crisis and adapting to the changes brought on by the pandemic and amplified by environmental and climate change in order to achieve the SDGs. SDG 17, which aims to “Revitalize the global partnership for sustainable development,” places particular emphasis on the critical role of South-South cooperation, as well as triangular cooperation, among developing countries and developed countries.

UNEP, together with the Chinese Government, has established **UNEP-IEMP** as the first collaborating centre in the South and for the South. This centre has been providing knowledge and assessment, capacity building, technology transfer and science for policy services in the global South.

South-South cooperation and action has also showcased valuable experience to strengthen local seed systems and crop diversity that may provide lessons for others. For example, community seed banks have been set up in a range of developing countries such as Nepal, Zimbabwe, Kenya and China. Popular local crop varieties have been conserved and enhanced for resilience to climate change, for better yield and other needs, through participatory variety selection or plant breeding. Technology has made it possible to harness old genetic properties for genetic re-combination. For example, the robust, undemanding nature or stress tolerance of traditional varieties is re-combined with the high-yielding properties of modern strains.



SDG 17 places particular emphasis on South-South cooperation, as well as triangular cooperation, among developing countries and developed countries.

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Capacity building for targeted communities has substantially contributed to **seed banking and food security** and improved livelihoods where these have been applied. Today, many community seed banks provide germplasms to local farmers affected by COVID-19 restrictions, as reported by UNEP-IEMP working with non-governmental organizations (NGOs).¹⁷ Scaling up similar models presents promising avenues for food security and response to the COVID-19 crisis and adaptation to climate change.

The UN system is working with China to help bridge the technology gap by offering developing countries **access to its earth observation satellite system for crop monitoring** with the CropWatch system. CropWatch uses satellite data to monitor crop conditions and integrates this information with other climate-related data on droughts, pests and disease for better farm management. CropWatch has been used by China since 1998 to assess national and global crop production, serving as an important tool in decision-making on the food market, annual planning of food import-export and disaster relief. It has been serving users from 147 countries with national crop condition data and information. Through UNEP's joint project, such big data technology has been transferred to a few African countries for their crop monitoring and agriculture early warning systems.

In the global South, building synergies in support of sustainable natural resource management is critical to inform people-centred innovative policies to address poverty and hunger. The imperative of **traditional knowledge, norms and values** must not be ignored – nor relegated – but must use community education programmes to empower targeted populations, women and youth in particular, in promoting sustainable development.



Opportunity 3: The COVID-19 recovery process creates an opportunity to reset the path for building back better in the global South, building upon existing platform for transformation

For making transformative changes, international, national and local agencies, NGOs, the private sector and communities must work together to address challenges. A few existing platforms are listed below.

- **Global Alliance for the Future of Food.** The Global Alliance for the Future of Food is a strategic alliance of philanthropic foundations working together and with others to transform global food systems now and for future generations. Food systems reform requires crafting new and better solutions at all scales through a systems-level approach and deep collaboration among philanthropy, researchers, grassroots movements, the private sector, farmers and food system workers, indigenous peoples, government and policymakers. This work is guided by a set of **seven principles that are key to food systems transformation**: healthy, equitable, resilient, diverse, renewable, inclusive and interconnected.

- **UN Women Climate-Smart Agriculture.** Building on UN Women’s established learning modules and a climate-smart training manual (initiated in 2018 and piloted in Mali), there is an urgent need to apply these learning methodologies comprehensively across the field, with the engagement and collaboration of partners. Country programs are pursuing a range of avenues to channel applied capacity training – which suggests that there is ample room for the pooling of resources, peer learning, and **addressing and closing gender-specific learning gaps**. The study “Factors Driving Gender Gap in Agricultural Productivity” shows quantitative evidence that the impact of climate change and extreme weather events such as drought and flood contribute significantly to the gender gap in agricultural productivity for women producers. In a country like Malawi, for example, women are responsible for performing between 50 and 70 per cent of all agricultural tasks, thereby producing 70 per cent of local food.¹⁸
- **FAO’s COVID-19 Response and Recovery Programme.** FAO unveiled in July 2020 its comprehensive [COVID-19 Response and Recovery Programme](#), with the aim of preventing a global food emergency during and after the COVID-19 pandemic while working on a **medium- to long-term development response for food security and nutrition**. To minimize COVID-19’s damaging effects on food security and nutrition while transforming global food systems to make them more resilient, sustainable and equitable, FAO calls for immediate action in seven priority areas, including boosting smallholder resilience for recovery and triggering food systems transformation.



Acceleration Actions

The South-South Cooperation Forum on Food Security and Agrobiodiversity sought to identify and foster joint actions on SDG 2 (**end hunger**), especially collaboration on Targets 2.3 (**double the agricultural productivity and incomes of small-scale food producers**, in particular women, indigenous peoples, family farmers, pastoralists and fishers), 2.4 (**ensure sustainable food production systems and implement resilient agricultural practices** that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change) and 2.5 (**maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species**, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed). The forum's discussion was divided into three sub-themes, as briefly described below, along with their focus questions.

A. Poverty alleviation: Food and nutrition security

FAO's on-the-ground surveys undertaken in countries affected by crises indicate that small-scale producers face mounting challenges in accessing inputs such as seeds and fertilizers because of the rising costs of these inputs, severely reduced household incomes and/or a lack of availability of these inputs in markets.



Climate change is an accelerator of problems in natural production conditions in global farming.

Looking at natural production conditions in global farming, it is apparent that climate change is an accelerator fuelling many of the problems described above. At the same time, climate change itself threatens to become the greatest obstacle to ending hunger and malnutrition. Countries face increasing climate variability and more frequent climate extremes, which can negatively affect food security and nutrition through their impacts on our food systems. The number of low- and middle-income countries exposed to climate extremes has steadily been on the rise over the past 20 years, from 76 per cent of countries in 2000–2004 to 98 per cent in 2015–2020.¹⁹ According to projections from the Intergovernmental Panel on Climate Change,

yields of staple food crops in some parts of Africa could, under the worst case climate change scenario, decrease by up to 21 per cent.²⁰

SDG 1 emphasizes that in order to eliminate poverty, “economic growth must be inclusive to provide sustainable jobs and promote equality.” Poverty itself is multidimensional in nature and can be expressed in terms of a lack of basic needs such as adequate food, good health, sufficient energy, and clean water and sanitation.

Food poverty is a common phenomenon in the global South owing to a lack of robust food security systems and policy safeguards against the vagaries of weather and climate change. In addition, the world economic order is a principal factor from the point of view of balance of trade, capacity building and technology support.

Questions

1. To what extent have the double crises of COVID-19 and climate change affected access to food and nutrition security at the household level in the global South, and are there specific gendered factors to be highlighted?
2. Food poverty is a critical issue and constant existential threat to a significant majority of populations in the global South. What needs to happen for public and private sectors to change course and address food poverty and food waste systems?
3. Natural catastrophes, climate-related disasters and global health crises will continue to occur. How can multilateralism and global partnerships play a vital and collaborative role to effectively address these crises?

B. Agrobiodiversity and smallholder resilience

The International Assessment of Agricultural Knowledge, Science and Technology for Development 2009 assessment report presents the impacts of past, present and future agricultural knowledge, science and technology on the reduction of hunger and poverty; improvement of rural livelihoods and human health; and equitable, socially, environmentally and economically sustainable development.²¹ The preparation and peer review process involved the work of hundreds of experts from all regions of the world. Its synthesis report specifically provides options for action to governments, international agencies, academia, research organizations and other decision-makers. According to the report, the main challenge of agricultural knowledge, science and technology is to increase the productivity of agriculture in a sustainable manner. This includes the needs of small-scale farms in diverse ecosystems and realistic opportunities for their development where the potential for improved area productivity is low and where climate change may have its most adverse consequences.

The State of Food Security and Nutrition in the World 2019 says that climate change and increasing climate variability and climate extremes are affecting agricultural

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productivity, food production and natural resources, with impacts on food security systems and rural livelihoods, including a decline in the number of farmers.²² The report further states that increasing opportunities for indigenous populations is key to nurturing their dietary diversity through traditional food systems that involve the production of diverse foods with minimal negative impacts to the environment.

Seed security or agrobiodiversity has been severely affected by intensive farming, large-scale land use change and deforestation in recent decades. In some cases, the damage is irreversible. Modern breeding methods used in the cultivation of crops and in animal husbandry have steadily and systematically reduced the biological diversity of crop varieties and livestock breeds. Diversity of varieties or breeds within a single species is losing out to a small number of high-yield crop varieties or animal breeding lines with identical genetic properties – thus exposing humanity and food systems to risks associated with monocultures.

However, it is particularly important, in terms of food security, to halt the rapid loss of biological diversity of genes, varieties, breeds, species and entire ecosystems. Progress in plant and animal breeding relies heavily on the availability of a wide pool of genetic material. This great biological diversity is mainly found in wild varieties, on traditional farms or in the wilderness in countries of the global South.



Questions

1. How have agrobiodiversity and smallholder farmer communities been affected during natural catastrophes, climate-related disasters and global health crises?
2. How can policy instruments – e.g. government nationally determined contributions, reports to the Convention on Biological Diversity, the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), the 25th anniversary commemoration of the Beijing Declaration and the Platform for Action (Beijing+25) reports – be enhanced to promote agrobiodiversity as a coping strategy against pandemics similar to COVID-19 and climate change?
3. What governance models exist in the regions that enable women and men to steward natural biodiversity while also promoting local food production systems?



C. Food system transformation

Approximately 800 million people suffer from hunger, yet at the same time 1.6 billion people are classified as overweight or obese.²³ Counterintuitively, this double burden of malnutrition (including micronutrient deficiencies) and over-consumption (including food waste and loss) is happening in the same communities – and, increasingly, in many low- and middle-income countries.²⁴ A fast-growing urban middle class has fuelled a transition towards more homogeneous diets and food systems and dependency on a narrower food commodity base – with

implications for health and nutrition, biodiversity, and the health and resilience of ecosystems.

A switch to sustainable food systems, such as Zero Budget Natural Farming,²⁵ can boost nutrition, reduce food loss and waste, optimize resource use, prevent deforestation, curtail biodiversity loss, limit greenhouse gas emissions, avoid harmful chemicals and support small-scale farmers.²⁶

It is clear that although globally there is enough food for everyone, too many people are still suffering from hunger. Food systems are failing, and the COVID-19 pandemic makes things worse. There is a need to minimize COVID-19's damaging effects on food security and nutrition while transforming global food systems to make them more resilient, sustainable and equitable.

To achieve zero hunger, SDG 2 emphasizes that "the food and agriculture sector offers key solutions for development and is central for hunger and poverty eradication." *The State of Food Security and Nutrition in the World 2019* identifies safeguards against economic slowdowns and downturns.²⁷ COVID-19 has triggered economic slowdowns and downturns across economies of the world; most affected are the vulnerable economies of the global South. With millions of people denied gainful employment due to COVID-19, stresses on food systems have become self-evident.

The COVID-19 crisis has highlighted areas of inequalities of the food system. Business cannot continue as usual. The Committee on World Food Security has adopted [Voluntary Guidelines for Food System for Nutrition](#) to re-orient and transform the food system to be more resilient and sustainable. In addition, FAO calls for immediate action in key priority areas including boosting smallholder resilience for recovery and triggering food systems transformation.

Contrary to common belief, undernourishment is not confined to poor countries. Even in resource-rich economies, high rates of undernourishment remain a critical factor, largely because of the structure of food systems in terms of the distribution and consumption of food. There is growing recognition that international trade and investment policies have become the foundation for addressing nutrition-related non-communicable diseases.

The [UN Decade of Action on Nutrition 2016–2025](#) identifies six cross-cutting action areas, including trade and investment for improved nutrition, focusing on identification of opportunities to achieve global food security and nutrition targets through trade and investment policies; and implementation of the Principles for Responsible Investments in Agriculture and Food Systems.²⁸ Food policies influence systems at global, regional and national levels, shaping aspects of the food environment such as food availability, prices, quality and food security and nutrition outcomes. Therefore, trade policy, food security and nutrition should be looked at as integral and interrelated components in the food system transformation debate.

The COVID-19 crisis has highlighted areas of inequalities of the food system. Business cannot continue as usual.

To address this crisis, a structural transformation involving agriculture and food systems must be put in place to help ensure that food security and nutrition objectives are met.



Questions

1. What appropriate policy response measures have been put in place to effectively address the impacts of COVID-19 and climate change on vulnerable groups so far?
2. What measures can be instituted to promote a food system transformation, and what opportunities does the pandemic open up to promote resilience in local food systems?
3. How should South-South Cooperation promote women's empowerment in equitable farm and food systems in the context of biodiversity, climate change and health risks? What are the next steps?

Synthesis

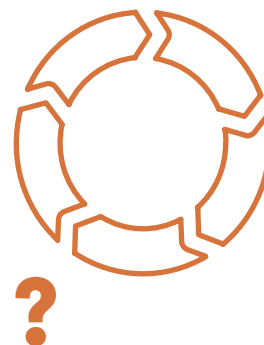
In the face of challenges and opportunities in developing countries, South-South cooperation defines a new agenda for implementation of the Paris Agreement and achievement of the SDGs. This section synthesizes key points from the presentations and discussions of the South-South Cooperation Forum on Food Security and Agrobiodiversity's three sub-themes and extracts answers to the key discussion questions along with clarifying observations.

Poverty alleviation: Food and nutrition security

Question A1: To what extent have the double crises of COVID-19 and climate change affected access to food and nutrition security at the household level in the global South, and are there specific gendered factors to be highlighted?

Globally, COVID-19 has hit the more than 700 million people living in extreme poverty,²⁹ mostly in South Asia and Sub-Saharan Africa, particularly hard. The effects of the pandemic were expected to push between 119 million and 124 million additional people into extreme poverty in 2020, 60 per cent of whom are in South Asia.³⁰ World Bank Group estimates indicate that sub-Saharan Africa was expected to have lost between \$37 billion and \$79 billion in output in 2020.³¹ The impact of lockdown measures has been severe, with a decline in real gross domestic product (GDP) of a record negative 6.9 per cent during the second quarter of 2020 in G20 countries. Excluding China, real GDP fell by 11.8 per cent in all other G20 countries, when the effects of the pandemic began to be more widely felt.³²

COVID-19 has spread rapidly across the world, profoundly disrupting fundamental activities on which we all depend, including agriculture and food systems. Lockdowns and closed borders have affected farmers and agro-entrepreneurs due to the **disruption of food production and supply chains** (especially of agricultural inputs such as fertilizer and seeds, and particularly those that are imported), access to markets, availability of physical labour, delays in agricultural operations, reduced overall demand for agricultural produce and processed foods, limited technical services, etc. Travel restrictions have also limited households' abilities to access food and other food services, contributing to diminished diet quality as a result of a declining demand for vegetables and fruits. Rising food prices have a greater impact



The pandemic has profoundly disrupted fundamental activities on which we all depend, including agriculture and food systems.

on low- and middle-income countries, since a larger share of income is spent on food in these countries than in high-income countries. In these and myriad other ways, COVID-19 has accentuated the food crisis. There is danger of dire economic consequences if the interruption in the global food supply chain and national food security persists.

Subsistence farming is more resilient in terms of access and stability, due partly to its low dependence on external inputs and limited market surplus; however, subsistence farming makes limited contributions to food availability because of its low productivity. On the other hand, commercial farming and peri-urban farming, which are more organized, have been more highly affected. This is partly due to their high external dependence on inputs, distant and segmented markets, and lack of infrastructure (e.g. cold stores and poor transport systems).

COVID-19 has had a disproportionate impact on **women and disadvantaged groups**, who have limited choices and opportunities. Poor daily wage labourers, farmworkers and marginalized groups are already vulnerable to food insecurity and malnutrition and will suffer more. It is clear from various studies that there is a direct relationship between poverty and food security. The existing inequalities – including in access to nutritious food/dietary quality and healthcare – will be amplified as a medium- and longer-term effect.

Existing inequalities – including in access to nutritious food/dietary quality and healthcare – are being amplified by the pandemic.

In terms of **gender issues**, increased women's workload at home and decline in their income, difficulty in accessing the market and agricultural credit, digital illiteracy and lack of driving skills are among the factors that have made them more vulnerable. Breastfeeding and pregnant women, girl mothers and children are the most affected because of gender inequality and structural vulnerabilities. In quarantine/isolation centres, pregnant and lactating women and weaning children are not sufficiently provided with required nutritious food. However, women make an important contribution to food security because they are the main food producers and play a key role in catalysing rural transformation to ensure sustainable livelihoods.

The issues are similar in particular regions and countries in the **global South**. In Africa (e.g. Malawi, South Africa), COVID-19 has affected every aspect of the agricultural value chain. Agricultural households have experienced labour disruptions and harvesting delays, which have resulted in post-harvest losses. Production is most likely affected through delays in land preparation and difficulty in procuring inputs; this may lead to a drop in production of certain crops and food supply distribution. Businesses have been affected in terms of fewer customers in the markets, high transport costs, movement restrictions, higher prices and difficulty finding suppliers, among other things. COVID-19 also has contributed to rural poverty, especially for those reliant on tourism, remittances and school feeding programmes which have completely collapsed. These challenges are expected to be exacerbated by a decrease in resources allocated to the core sectors and limited income to households as a result of the lockdowns and their diversion of income to purchasing items that help cope with the pandemic.

In South Asia, **loss of income and remittances** are creating strong tensions and food security risks in many countries. Rising food prices have a greater impact on food-insecure people in urban areas, particularly the urban middle class. Daily wage earners and those who work in the informal and service sectors may find themselves vulnerable to poverty and hunger. Income opportunities of workers in non-farm sectors (particularly in export-oriented industries) as well as casual labour in farm sectors are most affected by COVID-induced contraction of employment and restricted movement measures. The poverty rate is likely to increase due to the long-term effects of the pandemic. In poor countries, government social safety net programmes are in trouble due to a lack of funding. The prolonged pandemic situation is hampering local food production and curtailing the import of food products. Higher retail prices, combined with reduced incomes, means more households will have to cut down on the quantity and quality of their food consumption, with potentially lasting impacts on nutrition and health. Countries severely vulnerable to climate change, such as Bangladesh, will suffer most if proper and effective actions are not taken.

The prolonged pandemic situation is hampering local food production and curtailing the import of food products.

Question A2: Food poverty is a critical issue and constant existential threat to a significant majority of populations in the global South. What needs to happen for public and private sectors to change course and address food poverty and food waste?



Owing to the political and economic situation created by COVID-19, the pandemic can be seen as an opportunity for the private and public sectors to accelerate transformation to more resilient, sustainable and inclusive food systems that increase food security and safety. Initiatives should be taken for human capital development, fighting against hunger and nutritional problems for long-term development. Policy coherence needs to address simultaneously the combined effects of COVID-19, climate change and sustainable environmental and natural resource management. Trade liberalization and mutual cooperation among countries would be very helpful for sustainable development in the global South. COVID-19 has had major impacts on the vulnerable segments of society; therefore, we need to make these more vulnerable members more resilient to shocks of whatever kind – disease, job loss, extreme weather, etc.

Technology, innovation, digital solutions and research were the areas most widely discussed. During the pandemic, there have been many welcome innovations. New advances have been made in information and communication technologies and other digital solutions. Use of digital technologies (such as digital marketing for agricultural produce to improve food access), renewable energy and new information and communication technologies can facilitate the reduction of production/processing/marketing costs, time and energy, which are environmentally friendly. Infrastructural development and use of improved modern technology would be beneficial for reducing natural resource degradation and increasing productivity. All of these should be further promoted. In addition, targeted research to identify sectors and segments of the economy (that would yield the greatest benefits in terms of responses to COVID-19, climate change and environmental challenges)

as well as cooperation in agricultural research and development (to improve productivity considering environmental degradation) would be key to limiting the negative effects of COVID-19 and climate change on food security and poverty reduction in the long run.

It is vital to reinforce women's technical, managerial and leadership capacities and access to economic, agricultural and technological resources.

Social safety nets, financial mechanisms and investment were also widely discussed. Schemes for agricultural input support to affected people, feeding programmes for the vulnerable (especially women and children), food rationing and food-for-work programmes should be promptly introduced; along with increased support for agricultural transport companies, incentives to enhance access to technology and quality inputs, and increased investment to strengthen agricultural productive capacity. Credit facilities for rural areas should also be strengthened to develop small and medium enterprises for employment generation and create demand for local inputs.

Local and women's empowerment was also highlighted. It is important to invest in supporting local farmers, small-scale trade and small-scale food shops – for example, through technical assistance, standardization/certification of local products with high nutritional value, establishment of markets/food supply chain facilities at the local level and localization of agriculture. It is also vital to reinforce women's technical, managerial and leadership capacities and access to economic, agricultural and technological resources. This will enable them to fully contribute to food security and nutrition, including by supporting them to grow vegetables in their own garden to ensure they and their family have access to healthy and nutritious food. Strategies and policies should be developed to reduce disparities in agriculture, including the improvement of food and nutrition security and rural livelihoods in order to build a resilient, integrated and values-based food system for better preparation against potential crises. This is important for food security at the local level, especially for smallholder farmers who are the backbone of the food system.

Attention to **environmental sustainability and climate resilience** was also raised. A small increase in public expenditure on the environment and natural resources, such as soil erosion reduction in agricultural areas, can result in a significant increase in GDP. Closing the gender gap in agricultural productivity by empowering women farmers to be as productive as men would further increase crop production and GDP. All of these measures could help lift millions of people out of poverty, reduce food insecurity and provide entry points for successful interventions to limit COVID-19, climate change and environmental challenges. COVID-19 recovery packages, financed by public funds, need to be designed to accelerate resilience to climate change (e.g. infrastructure development to build climate resilience). Climate investment plans should also be put in place to help communities invest in and adapt better to the impacts of climate change. Because biodiversity conservation will remain a challenge due to monoculture and overexploitation of natural resources, scientific and other approaches will be required to reverse biodiversity loss through advanced conservation techniques.

Other types of mechanisms were also discussed. These include promotion of agricultural cooperatives, production in fallow land, buffer stock of staple crops and collaboration among different actors (government, non-governmental, private sector), as well as contingency planning and preparedness, relief and response mechanisms, increased investment at the farm level (e.g. to reduce loss and waste, extension service) and beyond (e.g. food shops, food services) and sharing of best practices.

An example of good practice can be taken from Burundi on empowering and strengthening women for sustainable food and nutrition security. A number of complementary interventions at strategic and local levels as well as innovations have been put in place. At the strategic level, government funds have been allocated to the Ministry of Gender to create the Women's Commercial, Investment and Development Bank as well as to local microfinance institutions for women's access as individuals, cooperatives or groups. At the community level, capacities of women members of cooperatives have been strengthened – especially in business planning, accounting and marketing – in order to integrate them into the agri-food value chain of various crops. Several new technologies (e.g. information and communication technologies, digital solutions) and renewable energy have been employed to improve the agricultural value chain. In terms of nutrition promotion, the focus is on female-headed households to improve livelihoods, and diversify and adopt essential habits that increase nutritional status, while involving men and youth to help manage family nutrition needs.

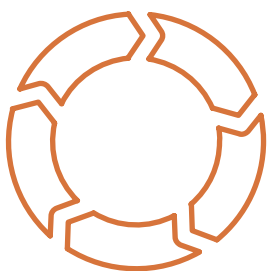
Question A3: Natural catastrophes, climate-related disasters and global health crises will continue to occur. How can multilateralism and global partnerships play a vital and collaborative role to effectively address these crises?



With the new challenges associated with climate change, spreading of transboundary disease and globalization, more attention to partnership, bilateral and multilateral North-South and South-South cooperation at regional and international levels, will be necessary. Multilateral, multisectoral and multilevel collaborations and integrated approaches are fundamental for addressing these crises.

Partnerships with the scientific community on technology advancements, exchange of knowledge and good practices, and support of science-based policy in national institutions and UN agencies for contingency planning etc. needs to be accelerated. In this regard, resources will be required to facilitate the process.

An example of this is the ten Southeast Asian nations that developed a multisectoral COVID-19 response framework, joint research and vaccine and enhanced public communication and fund for joint procurement and research.



Transformation of the food system is critical, especially for smallholder farmers who are the majority of food producers, especially in the global South, and central to conserving crop diversity.

Agrobiodiversity and smallholder resilience

COVID-19 has sent a clear message about the need to live within the planet's means. In this regard, the food system is fundamental, as it is a major driver of several challenges, including biodiversity loss and ecosystem destruction. The transformation of the food system is thus critical, especially for smallholder farmers who are the majority of food producers (especially in the global South) and central to conserving crop diversity. In terms of food security, world hunger is on the rise, yet it is not solely caused by insufficient food production. We will need to address not only the way food is produced but also its distribution and consumption for the future of our planet.

The COVID-19 pandemic has also demonstrated the **effects of biodiversity loss and deforestation** as well as risks from the sale of live wild animals, which can result in the spread of viruses. It is important to be reminded that the crises of both climate change and COVID-19 are not natural. They are human-induced and result from the extraction of both nature and human labour, including women's reproductive labour.

The majority of hungry people are smallholder farmers, mostly women. Although modern breeding and chemical-dependent industries affect biodiversity and damage our roots, the good news is that **smallholder farmers are still engaged in agroecology and stewarding biodiversity**. Women also play a very important role as seed keepers, food producers and leaders in their homes and communities. Although they are vulnerable to risks, women are vital to recovery and must be empowered in agrobiodiversity, food production and healthy diets. This will support evolving biocultural heritage and traditional knowledge – and can complement scientific knowledge.



Question B1: How have agrobiodiversity and smallholder farmer communities been affected during natural catastrophes, climate-related disasters and global health crises?

Vast acreages of land have been converted to produce flex crops (crops with multiple uses), other major commodities and industrial materials. In turn, water and use rights of local smallholder farmers are placed at risk or reconfigured, especially when land and water are grabbed by concessions for massive industrial production, thus putting biodiversity and smallholder livelihoods – and food security – under serious threat. These displacements are worsened by the effects of climate change, such as intensifying droughts and dry spells or increased precipitation and fiercer typhoons.

Across the world, large-scale modern agriculture has had severe impacts on smallholder farmers, who depend on agroforestry and integrated farming – practices that are more women-centric. In fact, twice as many women as men work in agriculture-related activities in developing countries.³³

There are still **gender gaps** in the farm productive assets owned by women and smallholder agriculture in general, with the situation worsened by climate change

and COVID-19. Some of these gaps are incurred by structural challenges such as social norms and domestic violence.

The greater the **genetic diversity** within a species, the greater that species' chances of long-term survival. Smallholder farmers are preserving genetic diversity by cultivating different crops and crop varieties. The COVID-19 pandemic has put pressure on genetic diversity and local food systems. Since genetic diversity is decreasing, additional measures for conserving genetic diversity in crops are needed.

An important but less discussed topic is the link between **land tenure security** and the ability to produce more food sustainably. It has been recognized that land tenure plays a vital role in protecting natural resources and women's equality. Local actions by communities need to be scaled up to strengthen rights to land tenure for female farmers.

Question B2: How can policy instruments be enhanced to promote agrobiodiversity as a coping strategy against pandemics similar to COVID-19 and climate change?

Social justice, respect and care should be at the front and centre of any effort to sustain agrobiodiversity and food security. Practicing and sustaining agrobiodiversity is not just a technical practice or a coping strategy in the face of crises and disasters. The core idea is to maintain traditional agroecosystems with respect for indigenous ways of living with non-human nature.

It is important to increase **smallholders' roles and level of participation** in the food system as well as make smallholder production more sustainable and resilient, since they are responsible for the greater share of food production. For example, they should be able to manage the products from their processing systems with marketing control in their hands.

The role of agrobiodiversity, which has been proven to make global food systems more resilient, must be better recognized.

There is a need to protect the rights of indigenous people who care for the forests. Protecting the dignity, land and human rights of indigenous peoples who occupy much of the earth's forested areas is also the best way to keep forests standing, which in turn reduces global warming and biodiversity loss.

Land issues are critical since they are related to gender, seed rights and biodiversity. It is important who owns the land. In some countries, young people are emigrating because they lack access to land. In many cases, land belongs to the men, yet it is the women managing it and women lack access to credit, knowledge and extension services. In other words, they are invisible in the public system.

Seeds are at the core of both agrobiodiversity and resilient food systems. People's organizations should control and develop seeds through farmer-led breeding.

Community seed banks (at the local level) or seed vaults (at the international level)

Smallholder farmers are preserving genetic diversity by cultivating different crops and crop varieties.



Social justice, respect and care should be at the front and centre of any effort to sustain agrobiodiversity and food security.

COVID-19 has reminded all of us to support smallholder farming to achieve sustainable and resilient food systems.

can play an essential role. Their primary function is genetic diversity conservation (e.g. from climate change and social instability), but they can also support smallholder and marginalized farmers during the pandemic crises, as with COVID-19, when lockdowns often occurred at crucial planting times.

The world needs solidarity for agrobiodiversity conservation. Smallholder farmers and gender considerations should be high on the agenda for policy support in order to sustainably create large-scale positive results.

An good practice example can be taken from Nepal on the crucial role of participatory community seed banks during the crisis. Community seed banks are a way of enhancing biodiversity as a local community solution and empowering smallholder farmers to manage seeds. Across Nepal, Local Initiatives for Biodiversity, Research and Development (LI-BIRD) is promoting community seed banks, which also serve as a source of local employment and contribute to national seed banks. LI-BIRD also has been working collaboratively to ensure there are in situ and on-farm linkages. During the pandemic, it has been difficult for smallholder farmers to access quality seeds, and the community seed banks have been an effective local solution. During the COVID-19 lockdown, over 3,000 rural farmers directly benefited from sourcing seeds from the seed banks. Promoting farmers' varieties can be a business opportunity for community seed banks, using agrobiodiversity to improve food security. COVID-19 has reminded all of us to support smallholder farming to achieve sustainable and resilient food systems.



Question B3: What governance models exist in the regions that enable women and men to steward natural biodiversity while also promoting local food production systems?

It is a system that must be developed based on values of equity, women's empowerment and biodiversity conservation.

In order to institutionalize the local community and gender empowerment agenda, **strategy and good governance** are needed. The issue must be forced, and the process takes time. There are no shortcuts; otherwise, nothing will happen on the ground.

Scaling up requires government commitment, and the government must do its part. Government cannot work on this alone, however. It is a system that must be developed based on values of equity, women's empowerment and biodiversity conservation. The private sector has a role in the process.

An example of good practice can be taken from India of a community-owned initiative with strong government support that results in impacts at scale. This is a community-managed natural farming programme that has so far involved 695,000 farmers, covering 190,000 hectares. Its four pillars are **state government ownership and facilitation, farmer-to-farmer extension, women's ownership, and knowledge and research**. It is a community-led programme where farmers nurture and champion farmers who are knowledgeable as well as women who are responsible for planning, managing, peer learning and taking responsibility for the poorest among them. The aim is to recreate agrobiodiversity through various actions, e.g. soil coverage, crop/tree diversification, integrated farming, use of bio-stimulants

to enhance the soil microbiome, use of indigenous seeds, pest management and use of organic residues. The programme has resulted in significant cost reductions, an increase in net income, better soil health, better crop health, the economic empowerment of farmers and the dignity of labourers, food and nutrition diversity and less damage from extreme weather events such as flooding.

Food system transformation

Currently, food systems at global and national levels are unable to deliver food and nutrition for all with minimum environmental impacts. The challenges come in many forms, including an inability to secure nutritious food, unhealthy consumption patterns, a lack of inclusiveness and equality, and negative impacts on the environment; all of these are interlinked. In order to transform the entire system, we need solutions that look at interactions between drivers, activities and outcomes, and strong coordination at all levels is essential. In this regard, everyone has a role to play: whether national government, UN bodies, research organizations, producers or consumers.

One third of food is wasted globally – at the production, handling and transportation stages in developing countries, while at the consumption level in developed countries. Whereas 500 million people are obese, 800 million people are undernourished and more than 2 billion suffer from micronutrient deficiencies.³⁴

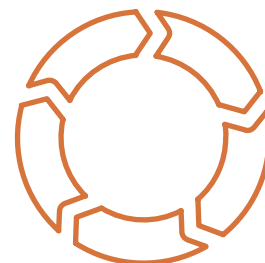
The world population will reach 10 billion by 2050 and 50 per cent more food will be needed.³⁵ More technological advancements will be essential to improve agricultural productivity but could create more waste and toxins.

At the same time, climate change will lead to more serious weather-related changes and more land degradation.

Agriculture provides 30 per cent of the global workforce while smallholder farmers produce more than half of all global food. Women in the global South accordingly have great responsibility for maintaining food security.³⁶

More and more scholars conclude that the **food system crisis largely results from a globalizing, modern-industrial food system**, increasingly consolidated through transnational corporatization and massive extractive and industrial activities and financialization. This food system propagates environmental degradation, climate change, biodiversity/agrobiodiversity loss, health problems, cultural erosion and mass displacement/forced migration from rural to urban areas across the global South and to the North. Consequently, its structural violence reinforces other crises.

The present system deprives **women, farmers and indigenous peoples** of the right to seed and land due to land grabbers. This is a major cause of poverty and hunger. Agroecology can be embraced as a better foundation for the issues around climate change, biodiversity loss and soil erosion.



Everyone has a role to play: whether national government, UN bodies, research organizations, producers or consumers.

COVID-19 highlights the fragility of the global food system as well as our interconnectedness.

COVID-19 highlights the fragility of the global food system as well as our interconnectedness and the need to improve food access for the most vulnerable. COVID-19 has also shown the failure of food systems, leading to a **human health crisis** with unsafe food, malnutrition and overconsumption; an **ecological health crisis** with biodiversity loss, climate change and deforestation; and an **animal health crisis**. A health-focused food system should be part of the call to build back better.

We will need to be realistic in what we can do to **transform the food system**. For example, the issue of power (of particular countries or transnational companies) still dominates the food system worldwide. Food system policies will thus need to engage with multiple actors and should go beyond conventional consultations to engage with how to shift power for transforming the food system.



Question C1: What appropriate policy response measures have been put in place so far to effectively address the impacts of COVID-19 and climate change on vulnerable groups?

One example is the **policy measures** taken by the government of Bhutan, including social protection systems (e.g. compensation for laid-off employees, food security reserves and food price management); movement restrictions (e.g. travel and quarantine); regulating imports and exports with no disruption to the domestic trade supply chain); and economic contingency plans in construction, tourism and agriculture and livestock (e.g. budgetary support for marketing).

The International Centre for Integrated Mountain Development has developed a range of **policy recommendations**, including supporting farmers to continue production, establishing food reserves, conserving water and recognizing the role of women.

An example from the Pakistani Government highlights the food security dashboard, in which 130 districts would be mapped and a traffic light system established to determine the quantity of essential commodities (wheat, rice, sugar) needed in real time and to help inform decision-making.



Question C2: What measures can be instituted to promote a food system transformation, and what opportunities does the pandemic open up to promote resilience in local food systems?

Response measures at the local level (e.g. support of local supply chains, especially for perishable commodities, during COVID-19 mobility restrictions) up to the interregional level (e.g. data exchange on and guidelines for action on climate change-induced impacts such as locust plague from Africa to South Asia) can all be beneficial to transform food systems. For this, we may not need to reinvent the wheel in order to address food security during COVID-19 and climate change, but we will need to implement strategies that have already been adopted, e.g. SDG 1, SDG 2, and the Paris Agreement, as well as regional strategies.

Certain principles were proposed for the enhancement of food systems – e.g. inclusive, healthy, environmentally sustainable and commercially viable. Policy measures are required for large-scale transformation. Because the shift in food systems is dependent on power, a **new vision to address how power shifts** will be essential.

The **food system must embrace social equality**: fair and for all. This point is especially relevant in the context of the climate change and COVID-19 crises, in which vulnerable groups include women and girls, the elderly and the disabled. In particular, the disabled – 1 billion people or 15 per cent of the world’s population – are among the most marginalized with respect to food and nutrition security during disasters and other crises, including COVID-19.

Agroecology was extensively pointed to as a pathway to a more equitable and regenerative food system that may help restore the environment and enhance communities. Agroecology will need to be part of this transformation as it can build autonomy for smallholder farmers, create jobs (including informal ones), and conserve biodiversity and ecosystems, among other outcomes. There are many local examples of agroecology being as or more productive and sustainable to meet food and nutrition requirements. Nonetheless, it must be part of a transformed food system that is supportive and oriented to smaller-scale farmers using regenerative practices rather than to corporate profit-making.

Women’s empowerment is also imperative, and building a transformative food system needs to be from the ground up where women predominate. Women’s voices should be heard, both speaking for themselves and articulating their own vision for success. Also, women should have access to opportunities such as subsidy programmes, inputs, information and communication technology and digital technology. Investment and research should be undertaken in women’s organizations and initiatives trying to revive women’s traditional practices (e.g. the use of traditional/organic seeds, which are difficult to find with the commercialization of agriculture).

Local value chains were also highlighted as an opportunity to promote food system transformation; these can be particularly critical in light of COVID-19 mobility restrictions (cross-border food trade limitations, food shortages and price spikes). Short value chains can empower people to thrive based on their own local resources. In this way, food sovereignty will be promoted by reviving local dietary and regenerative food systems, community-based food reserves and food banks and embracing the circular economy.

Another opportunity seen during COVID-19 is the return of a large number of **migrant workers**, increasing the reverse flow of labourers from urban to rural areas and back to their home countries. They have thus contributed additional available labour to family production. In some cases, there has been a rise in paddy cultivation with an expected increase in production as a result.

Food systems should be inclusive, healthy, environmentally sustainable and commercially viable.

Technology can also be part of the process and can be transferred across the global South. An example comes from CropWatch, which provides assistance in crop monitoring; this is essential in food production. The initiative supports early production forecasts (for policymakers to make evidence-based trade decisions), in-season warnings (for better farm management of stress due to e.g. drought, pests and diseases) and early response and actions (for providing food aid to food-shortage regions).



Question C3: How should South-South cooperation promote women's empowerment in equitable farm and food systems in the context of biodiversity, climate change and health risks? What are the next steps?

Cooperation, whether South-South or South-North and within the country, will be effective to improve food security through sharing good practices and forging collective solutions based on the principles of equality and mutual benefit. Trade and responsible investments must be part of this transformation of food systems, and COVID-19 has shown the importance of well-functioning markets. Many international communities have come together to work on food system transformation but still need to move from silos to policy coherence. The UN Food Systems Summit 2021 is expected to provide an opportunity to catalyse the transformation of food systems, achievement of SDG 2 and building more resilient food systems.

Trade and responsible investments must be part of the transformation of food systems.

Sharing knowledge and good practices between farmers and countries during the crisis will lead to knowledge-based transformation rather than agrochemical corporation-led green revolution. For this purpose, a South-South cooperation forum on food systems, such as this forum, can be organized as a regular event to find collective solutions to support this transformation.

Technology and innovation can strengthen regional and international food systems, e.g. on short food supply chains and food production. In developing countries generally, there is a lack of technical capacity. CropWatch, for example, was created in China and now supports several Africa and Asia-Pacific countries to monitor and forecast short-, medium- and long-term productivity, as well as address the impacts of climate change in some cases.

Potential existing cooperation opportunities that can be enhanced include the [South Asian Association for Regional Cooperation \(SAARC\)](#) and the [Belt and Road Initiative](#). Both cooperation mechanisms cover food security and food trade, among other things.

Endnotes

1. National Oceanic and Atmospheric Administration, "[Climate Prediction Center's Africa Hazards Outlook 16–22 September 2021.](#)"
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