United Nations expert group meeting on population, food security, nutrition and sustainable development

New York, 28-30 October 2020
(Virtual meeting)

Report of the meeting
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Notes

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Symbols of United Nations documents are composed of capital letters combined with figures.

The following abbreviations are used in the report:

AgMIP  Agricultural Model Intercomparison and Improvement Project
AI     Artificial intelligence
COP26  Twenty-sixth United Nations Climate Change Conference of the Parties
CPD    Commission on Population and Development
ECOSOC Economic and Social Council
EDGE   Evidence and Data for Gender Equality
FAO    United Nations Food and Agriculture Organization
FAOSTAT Statistics Division, Food and Agriculture Organization of the United Nations
FBDG   National food-based dietary guidelines
GAFAM  Google, Apple, Facebook, Amazon and Microsoft
GDP    Gross domestic product
GHG    Greenhouse gas
GSDR   Global Sustainable Development Report
HLPF   High-level Political Forum on the Sustainable Development
IFAD   International Fund for Agricultural Development
IFPRI  International Food Policy Research Institute
IIASA  International Institute for Applied Systems Analysis
ILO    International Labour Organization
NCDs   Non-communicable diseases
SNAP   Supplemental Nutrition Assistance Programme
SDGs   Sustainable Development Goals
UN DESA United Nations Department of Economic and Social Affairs
UNEP   United Nations Environment Programme
UNFPA  United Nations Population Fund
UNICEF United Nations Children’s Fund
WFP    World Food Programme
WHO    World Health Organization
1. **BACKGROUND AND SCOPE OF THE MEETING**

The Commission on Population and Development (CPD) was to address the special theme “Population, food security, nutrition and sustainable development” at its fifty-third session in 2020.¹ In preparation for the session, the Population Division of the United Nations Department of Economic and Social Affairs (UN DESA) prepared the report of the Secretary-General on population, food security, nutrition and sustainable development, which was issued in February 2020. Due to the coronavirus disease (COVID-19) pandemic, the Commission was unable to hold its formal session at the end of March 2020. Instead, the Commission decided to postpone a full consideration of the theme to its fifty-fourth session in 2021.

To inform preparation of an updated report of the Secretary-General for the 2021 session, the Population Division convened an expert group meeting on the theme, held virtually from 28 to 30 October 2020.

The purpose of the expert group meeting was to advise on updating the existing report with data or analysis that had become available since 2020, on highlighting elements that should receive greater attention, and on including evidence for impacts of COVID-19 on the various areas covered by the special theme.

This report summarizes the presentations and discussions that took place within each substantive session of the meeting and highlights cross-cutting themes and recommendations. The expert presentations and background notes prepared for the meeting, which contain a wealth of detailed information, can be accessed on the website of the Population Division.²

Due to the pandemic, the expert group meeting was held virtually.

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¹ For details, see www.un.org/development/desa/pd/events/CPD53.
2. SUMMARY OF SESSIONS

A. DAY 1: INTRODUCTION: NEW EVIDENCE AND COVID-19 IMPACTS

The fifty-fourth session of the Commission on Population and Development, to be held from 19 to 23 April 2021, will consider the special theme “Population, food security, nutrition and sustainable development”. The first day of the expert group meeting provided an introduction to the Commission’s deliberations on the theme, highlighted new data on food security, nutrition and health, and reviewed the impacts of COVID-19 on various aspects of food security and nutrition, including aspects related to population and development.

1. Introduction and scene setting

Mr. John Wilmoth, Director of the Population Division, noted that since the International Conference on Population and Development held in Cairo in 1994, the primary mandate of the CPD had been to monitor, review and assess the implementation of the Programme of Action adopted by the conference. Following the adoption of the 2030 Agenda for Sustainable Development by the General Assembly in September 2015, the Economic and Social Council (ECOSOC) had decided that the Commission should contribute to the 2030 Agenda, including to the review of progress towards achieving the Sustainable Development Goals (SDGs), within its existing mandate. The work of the Division was informed by four demographic megatrends, that is, population growth, population ageing, urbanization and international migration, as well as by the three components of population change—fertility, mortality and migration.

The special theme of population, food security, nutrition and sustainable development had been scheduled for consideration at the fifty-third session of the Commission in 2020. However, because of the disruptions caused by COVID-19, the Commission decided to postpone the theme to the fifty-fourth session, to be held in April 2021.

Two reports of the Secretary-General on the theme of the session were being prepared. The report by the Population Division would provide a broad overview of trends and key challenges, justifying policy responses in areas related to the special theme. The second report, by the United Nations Population Fund (UNFPA), would review and analyse population-related programmes and interventions as they related to theme of the annual session.

The report prepared by the Population Division for the fifty-third session had focused on various topics including hunger, nutrition, and population and health as well as the interactions between population growth, resource consumption, sustainability of food production, food security, and population movements. The report under preparation for the upcoming session would focus on long-term trends in these areas as well as on the impact of COVID-19 on livelihoods, food security and nutrition.

Mr. Shantanu Mukherjee, Division for Sustainable Development Goals, briefed on discussions on hunger and food security held during the High-level Political Forum on the Sustainable Development (HLPF), which was held in July 2020. In 2021, the HLPF would review SDG 2 on Ending Hunger along with eight other SDGs. The Division had supported preparation of the Global Sustainable Development Report 2019 (GSDR). A major contribution of that report was to identify food systems and nutrition patterns as one of the six strategic entry points for transformative actions to achieve the SDGs. Mr. Mukherjee emphasized that whereas production and consumption aspects of food systems had presented challenges for the SDGs even before COVID-19, the pandemic had thrown those challenges into sharper relief. For example, the pandemic had shown that supply chains were insufficiently resilient to shocks. Further, poor

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1 Transforming our world: the 2030 Agenda for Sustainable Development (A/70/1).
nutrition had contributed to morbidity and mortality during the pandemic. The pandemic had also shown
the potential for individual and collective behaviours to shift macro trends. The GSDR, along with scenarios
prepared by the Intergovernmental Panel on Climate Change, had identified that a combination of individual
and collective actions in the area of food security and nutrition were essential for achieving climate goals.
Mr. Mukherjee called for a better understanding of how pandemic responses and post-pandemic recovery
could accelerate transition towards sustainable food systems. For this to happen, action in three interrelated
domains was necessary: (1) changes in dietary habits towards healthy diets from sustainable food systems;
(2) sustainable production systems and food value chains and management of natural resources, and (3) a
social agenda which considered the rights, needs and capacities of the most vulnerable and marginalized
and included investing in family farmers, small-scale and indigenous food producers, and identifying ways
to increase their incomes and improve their livelihoods.

Mr. James Lomax, United Nations Environment Programme, summarized the process leading to the
United Nations Food Systems Summit to be held in September 2021. Preparations for the Summit had been
initiated by the Secretary-General in 2019. The five objectives of the Summit were: (1) ensuring access to
safe and nutritious food for all; (2) shifting to sustainable consumption patterns; (3) boosting nature-positive
production at sufficient scales; (4) advancing equitable livelihoods and value distribution, and (5) building
resilience to shocks and stresses. Mr. Lomax also presented cross-cutting elements such as financing,
policy, innovation, digital knowledge, and empowerment of women, youth and marginalized groups. The
Summit was expected to produce an elevated discourse about the importance of food systems, concrete
actions with measurable outcomes to achieve the SDGs, a high-level summary and call to action, and a
system of follow-up and review underpinned by strong institutional commitments. Summit preparation
comprised four elements. An independent scientific group was building the evidence base for a drive
towards sustainable food systems based on peer-reviewed research. Five “action tracks” would offer all
constituencies a space to share and learn. Dialogues would be held within Member States, at high-level
international events, and by stakeholders in any local food system. To strengthen advocacy, the United
Nations had established a network of champions. A task force would coordinate the work of United Nations
entities in preparing for the Summit.

Presenters were asked to give insights on how the topics of the Commission could feed into or amplify
other related United Nations processes. Mr. Mukherjee suggested that the CPD could advance the
substantive knowledge base and policy actions that are needed in both short and long term, as well as
promote understanding of the demographic megatrends that were currently underway. A substantive
resolution, adopted by the Commission, would be helpful in guiding discussions at the upcoming HLPE
and for guiding the preparation of the ministerial declaration. In addition to the HLPE and the Food Systems
Summit, related upcoming events included a high-level dialogue on energy, meetings on transport, and
twenty-sixth United Nations Climate Change Conference of the Parties (COP26). Mr. Lomax confirmed
the importance of synergies between the different processes occurring in 2021 and emphasized the role of
each process as building momentum toward the Food Systems Summit.

Participants inquired how structural issues such as large agri-food markets and their implications for
diets, sustainability and livelihoods, would be addressed, either in a specific action track or as a cross-cutting
issue. Participants also asked about “lock-ins”, entrenched approaches that maintain the business-as-usual
agenda, and whether there was willingness for transformative change. Mr. Lomax affirmed that the Summit
would look at lock-ins, including those around policy, finance and consumption, proposing a new trajectory.
While progress might not be quick, the Summit could start to address the lock-ins in a systematic way.
There would be cross-cutting elements on technical and policy innovation as well with a focus on how to
build back differently. Mr. Mukherjee suggested that the involvement of independent scientists was
advantageous to address issues such as lock-ins, which resulted from vested interests, and reiterated the
possibility of collective action to be game-changing.
2. Food security, nutrition and health

Mr. Lorenzo Bellù, United Nations Food and Agriculture Organization (FAO), presented the latest estimates of undernourishment and food insecurity. The number of hungry people had been slowly increasing since 2014, reaching nearly 690 million in 2019. If current trends continued, the number of people affected by hunger would reach 840 million by 2030, far from the goal of zero hunger. COVID-19 might add more than 100 million to the ranks of the hungry. Even if recovery occurred in 2021-2022, it would be a struggle to reach pre-COVID-19 levels of undernourishment. Income inequality would have a strong bearing on the future trajectory of undernourishment. A total of two billion people suffered from moderate or severe food insecurity. Half of them were in Asia, especially in South Asia and South-East Asia, and another large fraction in Africa. However, food insecurity was found in high-income countries as well. The prevalence of food insecurity was higher among women than men, and the gender gap in accessing food had increased between 2018 and 2019.

The recent report State of Food Security and Nutrition in the World4 had emphasized that the cost of diets increased incrementally as diet quality increased from an energy-sufficient diet that met needs for short-term subsistence, to a nutrient-adequate diet that met required levels of all essential nutrients, to a healthy diet that included foods from several food groups and had greater diversity within food groups. The average cost of a healthy diet was higher than the international poverty line, putting healthy diets beyond the reach of many.

To achieve affordable healthy diets, large transformative changes in food systems would be needed. Actions in this regard would include nutrition-sensitive investment; policies across food supply chains to enhance efficiencies; efficient international and internal trade and marketing mechanisms, including preventing “dumping” by countries with weaker social and environmental protections; nutrition-sensitive social protection; consumer-oriented policies for behavioural change; and improvement in the distribution of income and income-earning opportunities.

Mr. Jo Jewell, United Nations Children's Fund (UNICEF), made a presentation on levels and trends in child malnutrition. Since 2000, the proportion of children under five suffering from stunting had declined from 32 percent to 21 percent, meaning 55 million fewer stunted children. However, stunting was declining far too slowly to meet the relevant SDG target. Wasting still impacted far too many children and childhood overweight continued to rise. Africa and Asia bore the greatest share of all forms of malnutrition.

COVID-19 was having a negative impact on nutrition in three ways: poor access to nutritious diets, poor access to essential nutrition services, and poor feeding and dietary practices. The global prevalence of child wasting could rise by 14.3 per cent, or an additional 6.7 million children during the first 12 months of the pandemic, causing up to 10,000 additional child deaths. On average, coverage of essential nutrition services had declined by 30 per cent, with declines of up to 75 to 100 per cent in the context of lockdowns. More than 300 million children were missing school meals. There had been significant reductions in coverage of vitamin A supplementation programmes, in treatment for wasting, and in feeding services for infants and young children. Overweight and diet-related non-communicable diseases were risk factors for COVID-19 related mortality. Recent data indicated that the pandemic had led to increased snacking behaviours, intake of ultra-processed food, sedentary behaviour and screen time. Priorities of UNICEF included improving the quality of nutrition, ensuring access of children to quality services, and improving nutrition practices by caregivers and families. UNICEF was committed to transforming food systems, ensuring that food would be accessible and affordable to all. Further actions in improving health, social protection, education and water and sanitation were also needed.

Mr. Willibald Zeck, UNFPA, presented on the impact of COVID-19 on maternal nutrition and health. He recalled the commitment of UNFPA to achieve three transformative results by 2030: zero preventable maternal deaths, zero unmet need for family planning, and zero gender-based violence and harmful practices. UNFPA promoted sexual and reproductive health and rights and integrated mother and newborn health programming along a continuum of care, from adolescence and pre-pregnancy services to pregnancy and antenatal care, skilled birth attendance and postpartum care. Nutrition was closely linked to aspects of maternal and sexual and reproductive health. Further, the response to COVID-19 had highlighted the strong connections between food, nutrition, health and socio-economic outcomes. COVID-19 was expected to result in increases in maternal and child mortality. In the most severe scenario, it was estimated that 56,700 additional maternal deaths could occur over a six-month period in 118 countries. Child deaths could be expected to increase due to increases in the prevalence of wasting and reduced coverage of antibiotics and oral rehydration solution.

Specific risks for mothers and newborns during the COVID-19 pandemic included limited access to nutritious foods and increased food prices, fear of COVID-19 preventing women from seeking nutrition services and health care, mobility restrictions, and issues with mental health or gender-based violence. Disruption to the intake of micronutrients by pregnant women during the pandemic increased the risk of adverse pregnancy outcomes including maternal deaths, low birth weight, foetal growth restriction and stillbirths.

Mr. Zeck listed six recommendations to protect maternal diets and nutrition services and practices in the context of COVID-19: (a) international recommendations should be adapted to local contexts; (b) essential nutrition commodities should be available for women; (c) food systems should protect the diets of women; (d) social protection programmes should be expanded to cover the needs of women; (e) communication strategies should focus on healthy eating and food hygiene among women; and (f) nutrition information management, surveillance and monitoring should include indicators for women. Better and real time data were needed. Exclusive breastfeeding continued to be recommended during the pandemic. Lastly, Mr. Zeck noted that health and social systems across the globe were struggling to provide maternal and sexual and reproductive health care amid the pandemic, with shortages of vital supplies. It was estimated that 47 million women would not be able to access modern contraceptives, and 7 million unintended pregnancies could occur if lockdowns continued for six months. Supporting health care workers and midwives was key to maternal and newborn survival.

The discussion touched on questions of income distribution and disproportionate impacts of COVID-19 on the poor, the impact of COVID-19 on hunger, and data availability. Mr. Bellu stressed the importance of bolstering income for the poor to strengthen their purchasing power to buy food and achieve adequate nutrition. Furthermore, he added that COVID-19 had shown the critical importance of governments and public health services; it had become clear that some basic services, such as monitoring of epidemics, needed to be provided by the public sector.

Mr. Bellu stated that the three projection scenarios for the impact of COVID-19 on hunger were based on different assumptions regarding trends in GDP given that the future of food and agriculture would be shaped by factors such as food prices and incomes as well as by technologies and consumer behaviour. At the same time, issues that affected the predictions, but remained unresolved included the capacity of governments to share the burden of the pandemic across citizens, the extent to which low-income countries would be hit by the pandemic and whether they could afford recovery plans, and the extent to which the global community would learn lessons to build back better.

Panelists discussed the difficulties in obtaining data on the impact of the pandemic. Mr. Zeck indicated that mortality data were especially uncertain. For example, deaths that had occurred at home were often not recorded. Ms. Aburto stated that some information on specific food items was available. Milk, for example, had been lost in some locations due to inability to sell, and there was also evidence about the reduced
availability of fresh food. Whereas there was a general lack of data, the available data indicated an increased risk of food security. In Afghanistan, for instance, food insecurity had increased. Mr. Jewell noted the importance of alternative sources of data.

3. COVID-19 and food security

Ms. Jennifer Clapp, University of Waterloo, presented the findings of a recent paper on COVID-19 and malnutrition prepared by the High-level Panel of Experts (HLPE) of the Committee on World Food Security. It was estimated that the global pandemic had doubled the number of people that were facing acute hunger, especially in sub-Saharan Africa, as well as in Yemen. The current crisis underscored the urgency to build more resilient food systems.

COVID-19 affected food systems and food security in various ways. For instance, supply chain disruptions due to lockdowns resulted in food waste and food insecurity. Furthermore, the global recession resulted in loss of livelihoods and increased levels of inequality. Because vulnerable groups were most affected, Ms. Clapp emphasized the need for social protection programmes. Whereas some countries had been able to implement stimulus packages, other countries were unable to do so because of the economic recession. In addition, food crises had occurred in some localized areas. The impacts of COVID-19 were quite different from the impacts caused by earlier crises. Prices were increasing not only because of supply factors, but also due to other factors such as currency depreciation. The impacts were expected to shift over time.

COVID-19 was having an impact on all six dimensions of food security: availability, access, affordability, utilization, agency, and sustainability. To address the situation, Ms. Clapp recommended governments to develop or strengthen (a) targeted social protection programmes to improve access to healthy and nutritious foods; (b) protection for vulnerable and marginalized food system workers and farmers; (c) assistance to countries that depend on food imports; (d) coordination of policy responses to the COVID-19 pandemic; (e) diverse and resilient food distribution systems; and (f) resilient food production systems based on agroecology and other sustainable forms of food production. These actions should be aligned with longer-term goals to transform food systems.

Ms. Padmini Gopal, FAO Regional Office for Africa, presented joint work with Mr. Louis Bockel on the impact of COVID-19 on value chains in Africa. She recalled that hunger had been a major problem in Africa already before COVID-19. As the global pandemic was spreading, governments focused on blocking the transmission of the virus. However, governments also needed to consider the impact of COVID-related measures on food security and food supply chains.

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COVID-19 was badly affecting food value chains in Africa. The pandemic had reduced international trade, limiting the ability of countries to import food such as rice, wheat and other commodities to meet their domestic consumption needs. Exports from Africa were affected as well: for example, in Ghana, farmers that grew cash crops such as cocoa were unable to sell their harvests. Reduced local supply and demand increased food prices in the short term. Farmers, workers in food processing plants, and truck drivers were forced to stay home during lockdowns, generating food waste and loss, and threatening availability of food in Ghana. In Mali, many people had lost their jobs, especially those in the informal sector, and therefore had lost their ability to access food. The cocoa and cashew value chains had experienced logistical problems with delivery and transportation, shortage of labour, and closure of processing factories. Cashew prices had dropped by 63 per cent and market uncertainty remained high. In Guinea-Bissau, where 15 per cent of government revenue and 80 per cent of population depended on the cashew sector, the country was suffering from increasing poverty, in particular among women who were providing most of the labour.

To respond to these impacts, Ms. Gopal recommended that in the short term, governments should consider price controls, opening borders for agricultural goods, and declaring agricultural services as essential. As long-term solutions, governments should increase national capacity to process agricultural goods to prevent gluts of unprocessed food produce; enhance social safety nets to maintain access to food; promote labour-matching platforms in agri-food systems to address disruptions in labour; and ensure that migrant associations, youth groups and other stakeholders were included.

Mr. Moise Ballo, World Food Programme (WFP), examined COVID-19 and food security in crisis situations. By compounding and exacerbating existing crises, COVID-19 had increased the need for humanitarian assistance. The devastating impact of COVID-19 was still playing out, including on the prevalence of hunger. The number of acutely food-insecure people could increase by 80 per cent by the end of 2020 compared to the pre-COVID level - from 149 million to 270 million - in 79 of the countries where WFP worked. At the same time, the pandemic had impacted delivery of critical assistance on the ground. In response, WFP was supporting Governments in scaling up cash-based transfers to aid beneficiaries and in developing safety nets in low-income urban areas, especially for daily-wage labourers who had been affected by the pandemic. WFP had provided support to seven million schoolchildren during school closures with take-home rations or cash-based transfers and assisted with developing national protocols to ensure the safety of school children and personnel where on-site feeding had resumed. WFP was assisting Governments and stakeholders to improve planning and monitoring of food aid.

COVID-19 had an unprecedented impact on global food supply chains, which had impacted the ability of WFP to mount a global response to the pandemic. Mr. Ballo concluded by noting that while meeting immediate humanitarian needs was a priority, WFP was also looking towards ensuring that its assistance would enable a more inclusive and resilient recovery, in line with the 2030 Agenda and the United Nations response to COVID-19.

Mr. Alan de Brauw, International Food Policy Research Institute, reported that COVID-19 had caused a major reduction in the availability of work that migrants typically performed. In addition, immigration offices implemented substantial restrictions in issuing new visas and had closed in some countries. In general, returns to migrant labour were high in part because of the positive self-selection involved migration. The impact of migrants returning home due to COVID-19 on food security was expected to be higher when migrants came from poorer households than when they came from better-off households. International migration also had large returns to skills. The high fixed costs of migrating internationally meant that families of migrants were not among the poorest, suggesting that the probability of food insecurity among those left behind might not be high. An exception could be sending countries where remittances were a very high relative to GDP (20 per cent or more). Mr. De Brauw called attention to the repercussions of involuntary migration on food security. Entry to and exit from camps for refugees or
internally displaced persons could become more difficult because of COVID-19. As such, the pandemic could make it more difficult to integrate camp residents into local economies. In densely populated camps, health worker resources were stretched, COVID-19 testing was limited, and basic services such as food distribution, sanitation, schooling, and medical care were at risk of being interrupted.

Mr. De Brauwe recommended that return migration should be monitored closely for signs that it was contributing to food insecurity, especially in the context of internal migration. International migration concerns were context specific, and particularly warranted for countries that were highly dependent on migration. He predicted that international migration might not quickly recover to earlier levels, as jobs in some sectors, for example in the food service industry, were likely to return more slowly than in other sectors such as construction.

Panelists were asked what they saw as the most important potential achievements of the Food Systems Summit in terms of food security and population. Ms. Clapp stated that the Summit could provide guidance on how to transform food systems to meet the SDGs and propose concrete policy recommendations, such as those provided by the ILPE report. Mr. Ballo hoped that the Summit would propose concrete actions on how to ensure access to food, nutrition and livelihoods for the most vulnerable. The Summit would need to address inequalities in terms of access to resources, knowledge, technology, markets and value chains. Ms. Gopal saw the Summit as an instrument to stimulate the development of local processing capacity in developing countries. Further, youth should be encouraged to work in the agricultural sector to provide young people with income and to allow them to become food secure.

One participant requested clarification on the role of international trade during and after the COVID-19 for both food exporting and importing countries. Ms. Clapp affirmed that whereas countries needed to boost domestic food production capacity and local markets, they should not turn away from global markets. Countries that produced cash crops needed to have better storage capacity and the means to add value. Ms. Gopal shared her experience of Ghana, where cashew producers needed improved local processing capacity for cashews not sold in the export market in order to improve the financial viability of the crop.

B. **Day 2: Future outlook for food systems – has COVID-19 changed any assumptions?**

   1. *Future outlook for food systems, climate and environment*

Mr. Pierre Boileau, United Nations Environment Programme (UNEP), indicated that food production was responsible for 70 per cent freshwater withdrawals, 50 per cent of habitable land use, 70 per cent of biodiversity loss, and about a quarter of greenhouse gas (GHG) emissions. To achieve the Paris climate targets, GHG emissions from the global food system would need to be reduced by more than 70 per cent. At the same time, the global food system needed to produce 50 per cent more food by 2050 in order to feed the growing population. In order to address these challenges, UNEP had formed a task team to look at the environmental and health impact of the global food system.

Ms. Cynthia Rosenzweig, NASA Goddard Institute for Space Studies and Columbia University, presented findings from the 2020 meeting of the Agricultural Model Intercomparison and Improvement Project (AgMIP) which had focused on the linkages between COVID-19, climate change and food security. COVID-19 could be linked directly to food systems, as it was possible to trace back one of the first cases to a food market in Wuhan, China. Food and agriculture played a significant role in the rise of zoonotic diseases such as COVID-19, due to the expansion of agriculture into natural habitats. The destruction of natural habitats meant that animals lived in ever closer proximity to humans.

The consequences of the pandemic on the food system were multiple. The immediate impacts included supply chain disruption in the food industry; depressed demand for food due to loss of wages, restrictions on movement of people, goods and services, and factory closures; decline in restaurant visits; and reduction
in food exports. Medium to long-term impacts included disruption in agricultural input supply chains and decline of GDP, which in turn depressed governments’ fiscal space and limited their ability to maintain safety nets. In terms of food security, the biggest impact of COVID-19 was experienced on access to food rather than on its availability or utilization.

Ms. Rosenzweig suggested that the models used to analyse the impact of COVID-19 on the food system had to embrace the complexity of the situation across multiple levels—farm, regional, national and global. COVID-19 had highlighted that food security was not solely a sector issue or a technical issue. Structural societal weaknesses and fragilities, including poverty, remained critical as much as productivity and resilience in food systems. A patchwork response would be insufficient; this was an opportunity to recalibrate the food system. Ms. Rosenzweig noted that climate change was affecting food security even before COVID-19, through increasing temperatures, changing patterns in precipitation, and greater frequency of extreme weather events. The latest climate model projections, incorporating the shock of COVID-19, showed potential for even higher increases in temperature than previously projected, with negative effects on agriculture and higher uncertainty.

Mr. Hugo Valin, International Institute for Applied Systems Analysis (IIASA), addressed the sustainability of food systems in relation to land use in the aftermath of the COVID-19 crisis. He recalled that even before the pandemic, food systems were at the intersection of many different local and global challenges. These included increasing demand for food due to population and economic growth and dietary changes; direct impact of agriculture expansion on land, climate, water, nitrogen overuse and biodiversity; and increasing threats to food production from climate change, land degradation and water stress. Food systems were closely connected with other SDG challenges, including poverty, energy and unemployment. Systems analysis modelling was a key tool to analyse these multi-layered challenges and explore combinations of different variables and various policy mixes.

Mr. Valin noted that COVID-19 had critical impacts on the food system, with direct impacts on health, food security and nutrition, and economic growth. Impacts on climate and environment were potentially mixed, with less anthropogenic pressure due to reduced energy use but also less enforcement of regulations. Indirect impacts on economic growth could include negative long-term income and employment effects, but also positive effects if greener policies would be proposed as fiscal stimulus. COVID-19 had led to greater emphasis on resilience rather than efficiency, new awareness of human impact and vulnerability of ecosystems and the role of public policies, and a strengthened role of science in policymaking. An IIASA-based consultative science platform was developing recommendations for the recovery process that would centre on re-orienting the food system towards resilience and equity; making human and planetary health an integral component of food systems; securing innovation and technology diffusion, and upscaling of sustainable practices. He recommended focusing on increasing the understanding of the linkages between the food system and a healthy planet through a “One Health” approach, combining evidence from the impact of human impacts, land use and zoonotic diseases. New modelling frameworks were combining economic and ecological models. Studies showed that “bending the curve” to restore terrestrial biodiversity required an integrated strategy, which required changes in conservation as well as in food supply and demand. Whereas COVID-19 had further complicated existing challenges to sustainability, it also offered an opportunity for transformation through renewed focus on science, public policies and green investments. In the coming years, new data, trends and behaviours would have to be incorporated into models, and new pathways developed to catch up on SDGs and long-term targets.

Mr. Marco Springmann, Oxford University, examined the impact of national and global food-based dietary guidelines on health and sustainability. Without change from current dietary practices, there was increasing risk of exceeding planetary boundaries. Simply providing information without introducing additional economic or environmental measures was insufficient to promote healthy and sustainable diets. Such a shift required an integrated approach with clear policy measures, including media and education...
campaigns as well as fiscal measures to address food environments at schools and workplaces, and direct restrictions. National food-based dietary guidelines (FBDG), officially endorsed documents grounded in science, could be a starting point for progressive food system regulation to move populations to more healthy and sustainable diets. Mr. Springmann’s team had analysed national FBDGs of 85 countries, looking at health and sustainability implications both at national and global level. For countries without national guidelines, his team had used global guidelines from the World Health Organization (WHO) and the recommendations from EAT-Lancet. The team had found that most countries had achieved few of the recommendations from their FBDGs. Most of the recommendations were fairly vague in terms of specific recommended quantities for different food groups. If countries achieved their FBDG they would experience a reduction of premature mortality related to dietary risks. Compared to WHO guidelines, FBDG would have a similar impact on mortality reduction, while greater gains would be possible by applying the EAT-Lancet recommendations. The team had also analysed FBDG diets according to country and commodity-specific environmental footprints. While the recommended diets would cause a reduction of GHG emissions, the implications for other environmental impacts were mixed. He concluded that the EAT-Lancet recommendations could be a good starting point to reform national FBDGs and highlighted the importance of providing concrete examples for different dietary traditions and patterns, including plant-based ones. He also noted that FBDGs needed to be supported by investments in health promotion programmes and coherent policies in order to improve adherence to the guidelines. Importantly, healthy and sustainable diets were more affordable in high- and middle-income countries than in low-income countries. Including the costs related to health and climate change into the costs of diets would provide a financial incentive for dietary change towards healthy and sustainable diets.

Mr. Belli, FAO, stated that food and agriculture systems were influenced by forces that were partially generated within the system, but also by outside drivers from socio-economic and environmental systems. Dependencies between countries, market concentrations and big data were receiving growing attention in this regard. He raised concerns about control and ownership of big data in the context of food and agricultural systems. Understanding the dynamics between the different drivers was essential for evaluating their impact on food and agriculture. He then presented three scenarios, developed by FAO, namely “Business as usual”, “Towards sustainability” and “Stratified societies”. Understanding existing trade-offs could help identify possible ways forward. These trade-offs included, for example, increasing outputs versus reducing GHG emissions, or increasing employment versus increasing wages. He identified four triggers of change, or accelerators of development, for food system transformation: improved institutions and governance; consumer awareness of the impact of food choices; income and wealth distribution across and within countries; and technologies, including data and innovation. He then provided an example of how these triggers could help address some of the trade-offs: while moving towards sustainability, food prices might increase significantly through the adoption of sustainable technologies that provide comparatively lower yields. Improving the income distribution would be important to address this issue. To achieve the SDGs, interventions needed to be based on evidence-based modelling.

Participants observed that few countries considered environmental sustainability when producing their FBDG, focusing primarily on healthy diets. The methodology to consider environmental aspects in the guidelines had been developed only recently. Mr. Springmann’s work was considered very helpful in developing the guidelines in this direction. One participant inquired why the benefits in adherence to the dietary guidance were lower in Africa, and if this should be considered as positive or negative. Mr. Springmann replied that, in Africa, mortality rates were still largely related to communicable diseases, while changing the diet would affect mostly non-communicable diseases. Therefore, the benefits in terms of reduction of premature deaths were lower than in other regions where mortality rates were more related to non-communicable diseases. Another participant observed that promotion and education on FBDGs might

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not be sufficient if the recommended diets were not affordable.

In response to various questions on the assumptions in the projection model, Mr. Springmann replied that the projections of environmental footprints took into account technological improvements until 2050. The health costs were related to the healthcare costs for NCDs, and the costs related to climate change were based on estimates of the damage created by climate change and the social cost of carbon. Differentiation between organic and non-organic food had not been taken into consideration.

One participant asked Mr. Valin to clarify the potential short-term trade-offs between resilience and efficiency in the models of food system transformation, and whether these models would be able to demonstrate to decision-makers why long-term resilience should be prioritized over short-term efficiency. Mr. Valin replied that models looking at long-term trends were usually not well suited to look at resilience issues. The COVID-19 crisis illustrated well that new types of approaches were needed to understand short-term impacts. The impact of climate change and extreme weather on food systems, which was currently the subject of study, related to supply-side shocks, whereas COVID-19 was both a supply- and demand-side shock. Ambitious new policies were currently being designed, although their immediate effects remained unclear. Mr. Valin remained hopeful that some novel opportunities would emerge at the time of recovery from COVID-19, keeping in mind that developing countries would need the support of other countries.

Speakers discussed how inequalities were incorporated in their models and if any assumptions about inequalities were drawn from empirical experience, in particular for developing countries. Mr. Valin noted that experience on modelling inequalities existed mainly at the national level, and that global scenarios often did not address these questions efficiently. There was wide recognition that this aspect needed to be improved. Several initiatives were currently being undertaken. Ms. Rosenzweig commented that in AgMIP Regional Integrated Assessment modelling protocols were implemented in collaboration with national experts. Data and models for each country were chosen to represent the distribution of livelihoods and vulnerability in the country’s population.

2. Data, including big data, innovation and technology

Mr. Fergus Sinclair, World Agroforestry Centre, gave an overview of the fundamentals of agroecology.7 Agroecology was transdisciplinary and approached real world problems by involving all stakeholders to develop innovative solutions in local agricultural contexts. It aimed to harness ecological processes, rather than external inputs, for food production. It promoted generic principles that when applied locally resulted in diverse practices based on local requirements. Agroecology also involved social movements to assert collective rights and to advocate for diversity in agriculture and food systems and transformation at scale. A central tenet of agroecology was “co-creation” and democratization of shared knowledge, rather than a top-down approach.

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7 Based on High Level Panel of Experts of the Committee on World Food Security, 2019. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. Rome: FAO.
By bringing different actors together it was possible to map the relationships between all parts of farming systems. Mr. Sinclair gave an overview of the different dominant approaches to sustainable food system—agroecology and related approaches, sustainable intensification and related approaches, and conservation—and the overlaps and distinctions between them. Agroecology was not anti-technology, anti-science, or anti-private sector; rather it was a modern response to today’s challenges being considered by national Governments. Meta-analysis had provided robust evidence about the contribution of agroecology to resilience, particularly through improved soil health, biodiversity, diversification, increased soil organic matter, and reduced use of synthetic fertilizers. Mr. Sinclair stressed the importance of governance in relation to land, seeds, water, livestock, water and addressing market failures and inappropriate policies. Lastly, he highlighted the “missing middle” of policy implementation: often there was great intent at international level, but lack of coherence between actions at national, regional and local levels.

The presentation of Mr. Dejan Jakovljevic, FAO, focused on data, including big data, and their use in food and agriculture. He acknowledged the many challenges in ending hunger, food insecurity and malnutrition. COVID-19 had exacerbated existing challenges posed by conflicts, extreme weather events, economic turbulence, plant pests and diseases, and population displacement. The impacts of the pandemic on the food supply chain were numerous, including decrease in the supply of perishable commodities, transport restrictions which were blocking food deliveries, difficulties for farmers to access markets, and shortage of labour to produce and process food. FAO had established a data lab to assist member countries in filling data gaps, improving timeliness and granularity of data, and providing analysis and early warning signals. The lab had successfully applied techniques such as web scraping, text mining, artificial intelligence and geospatial data and remote sensing in analysing the effects of the COVID-19 pandemic on food insecurity, value chains and specific commodities. These new techniques avoided the usual time lag involved in reporting official statistics.

Mr. Jakovljevic highlighted the advances made in the use of geospatial data by FAO and introduced the flagship initiative “Hand-in-Hand Geospatial Platform”, an evidence based, country-led and country-owned initiative to support rural development and agriculture transformation. Using data from multiple sources, the platform aimed to help both decision makers and farmers by developing scenarios and providing tools for data modelling. The platform included sub-national and geo-referenced data. A recent joint initiative between FAO, Microsoft, IBM, and the Holy See focused on the role of ethics and artificial intelligence in bridging the digital divide to tackle food insecurity.

Ms. Anna-Verena Nosthoff and Mr. Felix Maschewski, University of Berlin, examined the role of big data applications for agricultural and food systems. In digital transformation, power relationships and the role of ownership were often overlooked. Sensors, robots, drones, big data analyses, and artificial intelligence (AI) were being employed for the purpose of precision farming in order to increase the overall efficiency of agriculture and optimize the use of fertilizers and pesticides. This transformation implied that the rules and logic of the digital world were now increasingly applied. The increased digital connectivity of farms, agricultural machinery, and crops had brought agriculture into the so-called “platform economy”, developed by the leading technological companies Google, Apple, Facebook, Amazon and Microsoft (GAFAM). A digital platform could be defined as an intermediary infrastructure of exchange, a quasi-market upon which products or services could be traded or conveyed in the same way as information and data. In researching precision and smart farming, Ms. Nosthoff and Mr. Maschewski had found that many companies working in this field had developed tools and applications that relied on data extraction, data analysis, and algorithmic modeling, as well as platform economic network effects, which meant that the value of digital structures or tools increased according to the number of people or companies using it. As one example, the Farmwave application was designed as a knowledge platform using location and weather data for field reports and artificial intelligence for image recognition. Its aim was to automatically count the quantity of grown fruits for yield calculation or to digitally identify plants that had been infected by
pests and other diseases. Ideally, based on this digital input, plants could be treated earlier, with far more precision and in more sustainable ways. The application also enabled farmers to exchange ideas with each other and offered a network of agronomists, cooperatives, dealers and technology companies that could provide immediate advice and information. The application relied on a powerful web services and cloud platforms. Farmwave was thus fundamentally based on the services of a platform monopolist and could not be run without its essential infrastructure. This and other examples showed that the leading technological companies provided essential infrastructural services, expanding their influence in the agriculture sector. In so doing, they integrated smaller platforms, rented out their services and structures, thus accumulating large amounts of data on farmer behaviours, production methods, and agricultural knowledge. The benefit to the companies was not only a constant inflow of profitable data, but also the emergence of a systemic dependency.

In this vein, it was also vital to think about justice-related issues. Who really benefited from these services in the end? Further issues at stake included data protection and privacy, the ecological implications of expanded digitized infrastructures, and problems related to the automation of physical and mental labour. As GAFAM implemented their own data infrastructure on a global scale, it would be harder to regulate them or to develop alternative infrastructures that went beyond proprietary markets and their common framework of “data extractivism”. GAFAM had established cooperative relationships with states and institutions alike. More effective regulation and a much more critical stance toward the technology sector and its narratives would be needed in the increasingly digital agricultural sector, and in setting agricultural policy. Ms. Nosthoff and Mr. Maschewski concluded that data, specifically big data, was not reducible to a neutral, positive, or natural process or development per se. It was likely that so-called “Big Tech,” specifically leading technology monopolies such as Google, would use opportunities such as “smart farming” to extend their own power and create platform-related dependencies. In the future, farmers would depend on a monopolized technology infrastructure in order to compete. While new digital products in the realm of agriculture were advertised with a narrative of “empowerment” and a language of sharing, commonality, transparency, and democratization, the focus should instead be on critically assessing the potential reproduction of inequalities, hierarchies, and forms of injustice in this sector.

In the discussion, Mr. Sinclair was asked to clarify the relationships between agroecology, knowledge intensity, labour intensity, diffused capital ownership and income distributions. Mr. Sinclair replied that labour and knowledge intensity were not inevitably related, but agroecology often intensified both. The need for knowledge was intensified when relying more on natural processes and a diverse range of species that needed to interact with one another and the environment, rather than forcing systems with external inputs. Agroecological approaches did involve more labour than agro-industrial alternatives, so it was critical to look not only at economic returns to that labour, but also at how decent or meaningful the labour was. People adopted agroecology for a range of reasons that went beyond what was normally modelled.

Mr. Sinclair was asked to elaborate on the rights or agency aspect of agroecology, and how this dimension was or was not accepted in the more scientific understandings of agroecology. Mr. Sinclair highlighted that a key but highly contested recommendation from the agroecology report was that agency should be considered as another pillar of food security and nutrition. The word was not commonly used in agroecological literature but was clearly fundamental across the principles related to participation, governance and human and social values. He suggested that some agricultural scientists were more comfortable with ecological principles and less with social and economic ones. Eventually, the social and economic principles had become part of the agroecological portfolio because they were essential to make progress on the ecological aspect.

In response to a question on the timeliness of the data published on FAOSTAT, widely used by different stakeholders but usually disseminated with significant delay, Mr. Jakovljevic explained that data on FAOSTAT and similar databases were always published with some time lag due to data validation.
Mr. Sinclair commented that, in the context of big data, it was important to consider not only farmers, but also other actors in the food chain, notably consumers. Big data were used in the food retail industry to try to nudge consumer purchases, and in governmental actions to do the same around better nutritional outcomes. It was important to make big data a positive force for smallholders. Big data could empower farmers by enabling them to evaluate the situation on their own farm and understand the best option for them given their inputs. Mr. Jakovljevic agreed with Mr. Sinclair, suggesting that the principle of “do no harm” should apply when using big data, but it was not clear yet how this principle should be implemented. For this reason, FAO was looking to establish an international platform on digital agriculture to bring together the critical entities from academia, the private sector and the United Nations to work specifically on food and agriculture data. There was a need to complement the centralized with an individualized approach, so as not to disadvantage farmers.

Mr. Sinclair was also asked how FAO and other United Nations agencies may fill, possibly though the help of information technologies, the data gap on contextual performance of agroecology. Mr. Sinclair replied that FAO was part of the emerging transformative partnership platform on agroecology, which would be developing holistic metrics for agricultural performance and their connectivity to digital agriculture and private sector engagement.

3. Food system transformation

Mr. Elvis Beytullayev, International Labour Organization (ILO), made a presentation on decent work in the rural economy. He noted that the world was facing the challenge of absorbing the current labour force and providing them with the requisite skills. It was important to look at rural areas, because this was where the poorest lived; 80 per cent of the poorest were engaged in agriculture and 25 per cent of agricultural workers lived in extreme poverty. Most jobs in agriculture were of poor quality, lacked worker protection, were hazardous, and were poorly remunerated. Very often, agricultural workers were left out of labour law enforcement and collective bargaining, situations which were worsened by seasonality. Another key aspect was child labour, which according to ILO affected 152 million children globally, 71 per cent of whom were in the agriculture sector. Many factors contributed to the employment challenges in rural areas, including weak labour market institutions, ineffective law enforcement, inadequate environment for enterprise development, limited access to services such as education and healthcare, and informality. To eradicate poverty, food insecurity and inequalities, and to sustainably transform the food system, it was essential to focus on decent work.

Mr. Beytullayev acknowledged that in recent decades the agri-food system had undergone significant transformations associated with population and income growth, urbanization, and changes in dietary preference, which all had been translated in new jobs in primary production and related non-farm sectors. In low-income countries, where most of the labour force was engaged in agriculture, new technologies could help increase agriculture productivity, but use of modern technology was not enough. Technological innovation had to be “people driven” to lead to social and economic development of rural economies, and to more and better-quality jobs. Agricultural employment needed to be attractive for youth cohorts. For the future of work in this sector, key steps to improvement would be formalization of informal jobs, a focus on governance issues and labour rights, women's empowerment, and transition to greener practices.

According to ILO estimates, the equivalent of almost 500 million full time jobs had been lost because of COVID-19, resulting in labour income losses, especially in low-income countries. Millions were at risk of falling into poverty, especially in countries where people spent most of their income on food. With low and irregular income and lack of social support, many agriculture workers needed to continue work despite increased risk of virus infection. Women were a large share of the work force in the agriculture sector and were not well protected. On a positive note, in many countries the consequences of the pandemic had led to labour reforms with tougher regulations to improve working conditions. The ILO response to COVID-
had included supporting countries in implementing effective employment policies and highlighting how a universal approach to social protection would help in future crises. Ratification of international legal instruments specific to agriculture would play a critical role in countries’ efforts toward sustainability. ILO, FAO, IFAD and WHO had issued a joint call for action to pool expertise to support countries, giving priority to addressing underlying causes of food insecurity and malnutrition, tackling rural poverty through more and better jobs in the rural economy, extending social protection to all, facilitating safe migration pathways, and promoting formalization of informal economy. Mr. Beytullaev concluded by noting that the current crisis was also an opportunity to rethink past approaches and build back better.

Ms. Susan Kaaria of FAO noted that rural women played a key role in agriculture, but faced constraints in accessing productive resources, services, market assets and opportunities, and were especially disadvantaged in their right to own land. The gender gap in financial inclusion had remained unchanged since 2011. The prevalence of food insecurity was higher among women than men, a gap that had increased between 2018 and 2019. A higher proportion of women were in informal employment compared to men, with less access to social protection. National statistics did not capture the time women spent on caregiving, subsistence agriculture, processing and preparation of food for home consumption, and cleaning, underestimating their contribution to the economy. Women were disadvantaged compared to men in all aspects of land rights: ownership, management, transfer and economic rights. Globally, less than 15 per cent of all landholders were women, and women were less likely than men to have a legal document proving ownership. Rural women were more vulnerable than men to the socio-economic effects of COVID-19 due to gender inequalities, and many of the social protection measures implemented had not targeted women. When looking at food security, 41 per cent of women versus 30 per cent of men reported lack of food as a key impact of the COVID-19 crisis. Ms. Kaaria concluded by highlighting the importance of high-quality sex-disaggregated data to understand disparities between women and men and to improve targeting of policies. Country gender assessments were a tool to provide information on the role and situation of women in agriculture, inequality in accessing opportunities, and key actions that could be taken to advance gender equality.

Mr. Steven Hagblade, Michigan State University, discussed the impact of rapid urbanization on agricultural supply systems. Urban areas were main drivers for major food transformation. Africa was the region with the most rapidly growing urban population. When looking at geospatial data, urbanized settlements spread outside of the jurisdictional administrative boundaries, suggesting that the footprint of cities was bigger than reported by official statistics. Cities were like magnets in shaping the food system, pulling the supply from surrounding areas. Urban demand for food was growing, especially demand for prepared food. Urban development influenced the agriculture supply system in many ways: rural wage rates were higher closer to the city; prices for agricultural inputs in peri-urban areas were lower than in rural areas, and the adoption of inputs and herbicide use decreased with increasing distance from cities. The food supply line crossed many different jurisdictions. For instance, mayors and city councils had become key agriculture policy makers because they organized urban wholesale food markets.

During the discussion it was noted that new technologies such as increasing mechanization, digitalization, artificial intelligence, and robotics, both in the agriculture sector and other sectors, could impact employment. The way labour opportunities would evolve could significantly affect income-earning opportunities and income distribution. In response to a question on whether data on women’s land ownership were also disaggregated by age. Ms. Kaaria explained that data were currently not age-disaggregated but the 50x2030 Initiative to Close the Agricultural Data Gap, a global partnership for data-smart agriculture to strengthen agricultural data systems in 50 countries, aimed to expand the availability of sex-disaggregated agricultural data. Part of the data would be used to track progress on women’s land rights. It was recalled that the Evidence and Data for Gender Equality (EDGE) project had developed a

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* See www.data4sdgs.org/50by2030.
methodology for the collection of SDG indicator 5.a.1 on the share of women among owners or rights-bearers of agricultural land, by type of tenure. To improve data collection and reporting to inform policy in a more gender-sensitive way, Ms. Kaaria noted the importance of supporting better gender statistics. FAO was collaborating with the International Food Policy Research Institute (IFPRI) on a programme called the Gender Agriculture Asset Project, using a tool called the Women Empowerment in Agriculture Index. She highlighted the importance of interviewing both males and females in the household during surveys in order to obtain individual data, of linking quantitative and qualitative data which were essential for policy making, and of developing capacities of national statistical offices.

Mr. Haggblade was asked how advice to local policymakers could be improved to ensure that local-level policies were effective in responding to the current challenges. He noted that models were available to harmonize policies across jurisdictions. These were mainly driven by the private sector which was more concerned about food safety and damage to the reputation of firms. Whereas policies were often motivated by the private sector, they were managed by cities through task forces and urban food systems planning exercises, or by regional governments, through infrastructure and territorial planning.

C. DAY 3: REGIONAL OUTLOOK

The third day of the meeting gathered experts from different regions to examine selected aspects of population, food security, nutrition and sustainable development. The meeting concluded with a general discussion of key messages and recommendations.

1. Key issues in selected regions

Ms. Agnes Rola, University of the Philippines, identified diverse types of food supply systems in Southeast Asia. Linear systems were most common, with a linear relationship between inputs, production, processing, marketing, retail and consumption. Circular systems took account of waste recovery and nutrient recycling, whereas nested systems recognized that food choices and dietary outcomes were embedded in household dynamics and local and regional conditions. The interactions between economic, social, and environmental impacts needed to be considered in order to develop a sustainable food system. Drivers of food system transformation in the region were population growth, urbanization and rising incomes. The transformation had been characterized by the following key transitions: (a) from cropping systems to farming systems with improved post-harvest management, linkages to markets and diversity of available food, (b) from smallholder to large-scale commercial production, (c) from traditional to modern retail markets, and (d) from production-centric to market-driven systems. The first transition occurred alongside increasing incomes for farmers. The second transition was a response to increasing demand due to population and income growth. It was noted that modern markets created more jobs in processing and packaging, and these jobs were commonly filled by women. The current food system in the region was not delivering sustainable and healthy diets. More than 320 million people in the region lived in extreme poverty. FAO estimated that 486 million people in Asia and the Pacific were undemorished in 2018. The region was also experiencing the fastest growth in childhood obesity among all regions of the world. The food system also was not resilient to climate change or to the current pandemic. There was an increasing frequency of climate-related disasters which negatively affected food security and nutrition. Effects of the pandemic were dire: in the Philippines, for example, the pandemic was estimated to have more than doubled the unemployment rate compared to 2019 and had particularly affected the informal sector and micro, small and medium size enterprises. It had also contributed to many people going hungry. High transaction costs and limited market integration had led to high prices and a failing food system to support nutrition in Asia. There was also a lack of employment opportunities that could reduce inequality, a lack of social protection.

9 See http://unstats.un.org/edge/.
policies to ensure resilient food systems, and a lack of data to allow effective targeting of the poor and needy.

Transformation to sustainable food systems in South East Asia would require a multidisciplinary approach involving academia, the private sector and private-public partnerships. Food systems at the national level should be strengthened by improving governance systems and enacting multi-sectoral development plans anchored in nutritional food systems. Whereas some countries had started along this path, other countries were able to learn from those experiences. In the Philippines, local actions being taken to mainstream disaster and climate risk management in agriculture to support resilient food systems included municipal projects to reduce losses from calamities. In some cases, success was improved by having access to data that allowed precise targeting of benefits to those in need. In closing, Ms Rola suggested that attention be directed beyond 2030 to 2050 in order to work towards sustainable food systems and healthy diets and emphasized the importance of learning and working together.

Ms. Madhura Swaminathan, Indian Statistical Institute, made a presentation on food and employment insecurity in India in the time of COVID-19. She emphasized the need to be clear about the distinction between global and local priorities, and that focusing only on global measurements and priorities risked prioritization of the wrong issues. For example, the focus on the prevalence of overweight and obesity placed attention on problems that are much less relevant for places like India, where over a third of the rural population were underweight and a fifth suffered from wasting. The priority in these locations should be on undernutrition. While the number of people experiencing undernutrition was important to track, such indicators changed slowly relative to the change in other important factors such as unemployment status. An estimated 90 per cent of India’s workforce was in the informal sector and vulnerable to rapid changes in employment status. When a lockdown was imposed in India, the number unemployed changed radically almost overnight, with dire implications for food security. Other important changes due to the pandemic included a rise in existing inequalities, such as by caste and gender, a reduction in food affordability particularly for women; and the restriction of physical access to food due to the collapse of supply chains. Major increases in the prices of grain and cereal crops had occurred in 2020 and these prices were expected to remain high for many months.

To address these challenges, a major change in policy was needed. In particular, there was a need to move away from the idea of “targeted” or “conditional” programmes and transfers. Targeting was not efficient or appropriate when 50-70 per cent of the population met the target; rather, it was more effective to run universal programmes and transfers. The example of the response to the pandemic in the Indian state of Kerala was presented in support of this idea. There, a comprehensive support system involving provision and distribution of food was implemented, with extra support to the poorest but still significant universal support which covered close to 98 per cent of households. It was noted that the programme had special sub-programmes for children and returning migrant workers and provided cash transfers for immediate relief.
In closing, Ms. Swaminathan reiterated that the food- and nutrition-insecure population was larger than the malnourished population and that employment insecurity was a significant reason for ongoing food and nutrition insecurity. A universal safety net was needed to alleviate these risks and could be effective as demonstrated in the case study described.

Ms. Valeria Piñeiro, International Food Policy Research Institute, examined food security in Latin America. Ms. Piñeiro summarized the short- and medium-term impacts of the ongoing pandemic, starting with strict lockdowns which restricted movement, subsequently moving on to disruptions to supply chains and imports. There was a severe reduction in international transportation activity, including by air and sea. These events had reduced the availability work as well as lowered incomes and demand, leading to less nutritious diets across the region. The Latin American and Caribbean region had entered the pandemic in an already macroeconomically vulnerable position due to weak economic growth and, in some cases, dependence on one or two trading partners for overseas trade and a large share of exports from primary industries. Some countries were also carrying high levels of external debt or had large informal sectors in their economies, giving them less fiscal space to respond to the pandemic. All four components of food security—availability, access, use, and stability—were impacted by the pandemic in the region. In terms of the “use” component, child malnutrition remained an issue in many countries, but obesity was also a significant concern.

The dynamics of food production and consumption in the region were heterogeneous, with some countries being net importers of food and others in the region being net exporters. A challenge was to ensure the net exporters produced and exported food in a sustainable way. Changes in economic conditions would impact food importers and exporters, and the food security of their populations, in different ways. For example, devaluing national currencies could increase food costs for countries that were net importers.

Economic modelling of the impact of the pandemic predicted significant increases in the number of people likely to be in extreme poverty over the period from 2020 to 2022. The exact number would depend on the nature of the post-pandemic recovery and the assistance provided by national Governments. Simulations suggested that people would be faced with having to eat less food overall, and specifically less perishable food relative to staple foods. To build a robust food system, investments in infrastructure and global food supply chains were required. In the short-term economic stimuli were needed to tackle unemployment. In the longer term, regional integration and partnerships were needed.

Ms. Lauren Bauer of the Brookings Institution presented on food insecurity in the United States of America. The United States of America had experienced a public health and economic crisis in the face of the ongoing pandemic. Bringing the pandemic under control was a prerequisite to economic recovery. An increase in food insecurity was one of the outcomes of the pandemic in the United States of America. Before the onset of the pandemic, food insecurity was relatively low and declining; after the onset of the pandemic, the level of food insecurity started to rise. Food insecurity in households with children had seen a particularly noticeable increase. Since about March 2018, food insecurity had increased to around 15 per cent of households. The rates were different by race, with larger proportions of black and Hispanic households with children facing food insecurity.

The United States Government responded to the increase in food insecurity with several programmes directed at both individuals and businesses, including tax refunds, unemployment insurance and food purchasing assistance via the Supplemental Nutrition Assistance Programme (SNAP). These measures led to an overall increase in personal disposable income over the period of payments relative to the previous year. However, the special measures were due to end and it was expected that benefits and support would decline sharply. One of the programmes launched in response to food insecurity brought on by the pandemic, Pandemic Electronic Benefit Transfer, provided cash assistance to boost food purchasing power of families meeting eligibility requirements, for instance families with children who would otherwise
receive food assistance through attending school. By the end of September 2020 close to US$90 billion had been spent on all federal Government food assistance programmes combined (existing and pandemic-related). These programmes succeeded in reducing food insecurity, increasing economic sufficiency, and providing other positive health and economic outcomes. However, until the pandemic was brought under control, a return to previous economic trends was unlikely and additional and significant economic assistance programmes and stimuli would be needed to keep food insecurity at or below current levels.

Ms. Namukolo Covic of the International Food Policy Research Institute commented on the impact of COVID-19 on food security in Africa. She noted that the pandemic had worsened existing challenges in food and supply chain security. The continent was facing multiple burdens of malnutrition, including an increase in the prevalence of overweight and obesity. Governments were fiscally constrained and their ability to respond with social protection was limited. Further time and research were needed to understand how people were coping at the individual level. The African Union had played a role in planning a coordinated response, particularly by trying to improve the movement of food and increase availability of COVID-19 testing. The number of deaths from COVID-19 in Africa, although increasing, had turned out to be not as high as was anticipated, but it was unknown whether or not this was due to low levels of testing.

During the discussion, a question was raised as to whether comparisons of food insecurity in the United States of America with other countries, for example in Africa, were available. No comparisons were available from the panelists, but it was noted that the United Nations was perhaps best placed to provide such information. Further details were also requested on urban employment initiatives in India, given that creating employment opportunities for urban youth was particularly difficult. In response, Ms. Swaminathan noted that the programme was started before the pandemic in one location, but demand had expanded nation-wide after the pandemic began. The employment provided was largely public construction which, admittedly, might not be appropriate during a pandemic. Financial support had come from central, state, and local governments but the greatest ability to finance these projects lay with the central Government, which needed to provide more support than it was currently providing.

The question of how to move away from ad hoc measures towards sustainable solutions to build back better was put to the panelists. Ms. Swaminathan suggested looking at the integration of food, employment and food waste. In high-income countries, food waste tended to occur at the consumption end, whereas in lower-income countries waste tended to occur during storage and production. Therefore, if storage and production were to be improved in these regions waste could be reduced but also employment could be generated and skill levels in the workforce increased. Ms. Piñeiro emphasized the need to invest in infrastructure, including data and digitalization systems. In some African countries, effective e-money systems had increased resilience to disruptions. In all responses, economic, social, and environmental sustainability should be ensured. Ms. Rola noted that food system sustainability was not just the responsibility of the agricultural sector, or any one sector. For example, water systems had an impact on food security. All related sectors needed to integrate their responses. Ms. Bauer noted that in the United States of America's supply chains were able to return supply of low-cost, high nutrition food after a very short period of unavailability, and that assistance programmes were reaching most intended recipients. The persistence of food insecurity seemed to be due to structural factors causing long-term disadvantage to some groups.

In concluding the session, Ms. Weinberger, who acted as moderator, noted that the key issues covered were expansion of social protection and provision of social safety nets, the need for more and better jobs,
the potential for digitalization and smart technologies to impact food security, the need for increased investment and resources, the need for better integration of programmes across sectors and the need for better data disaggregation to provide needed information on the most vulnerable.

2. Discussion, key messages and closing

Comments in the final discussion segment addressed several themes.

- **Economic concerns around labour, income distribution and equity**

  The issues of food security were linked to those of economic equity, the distribution of income, the share of capital, and the role of labour in the economies of the future. While notable reductions in poverty had been achieved; the pandemic had revealed the limitations of those gains.

- **Agricultural systems must operate within planetary boundaries**

  Participants called to shift the food systems narrative towards one of transformational change. The ‘forcing’ of production with external inputs was unsustainable and led to environmental damage. The report of the Secretary-General prepared for the fifty-fourth session of the CPD should emphasize the need to ensure that agricultural systems of the future operate within planetary boundaries and, moreover, must propose ways to achieve this. Transformative change also called for improvements in the metrics used to monitor the system. Measures of yield and yield gaps were insufficient; rather, measures needed to look at performance at local levels (field, community or landscape) and not just at ecological footprints counted in terms of carbon.

- **The search for effective policies is well underway, but change remained elusive**

  There had been concerted efforts to identify policies that could bring about change and many had been proposed. In Africa, many ideas had been generated in response to the local situation, yet the continent remained the furthest behind in progress. It was important to understand why change was elusive despite the fact that many ideas existed and that policy documents had called for resilience and sustainability. Participants suggested reconsidering the metrics used to identify poverty and the relation of these metrics to food security. The poverty income thresholds used by many international agencies, including the World Bank, were inadequate. Affording a healthy and nutritious diet required income significantly higher than the current poverty thresholds. Measures should be harmonized to facilitate measurement of the true cost of food and to assess and compare a range of policies. Proposals around institution building, particularly in the global South, could include education and training to prepare the next generation for new ways of food generation and agriculture.

- **Importance of individual agency**

  Participants discussed the role of individual agency in food security and transforming food systems. It was not clear how to measure the ability of individuals to engage with the food system as producers, workers, and consumers. For individuals to have agency around food choices, and to be able to affect the food system as consumers by choosing healthy and appropriate food for themselves, they needed to have access to the means to do this. The food system must provide these means, perhaps through labelling and other measures that allow consumers’ food choices to impact the system. Governments and international organizations could support efforts in this regard. The discussion also touched on the need to reduce consumption of animal proteins. Consumption in low-income regions was already very low and was not due to ability to have a choice or agency, but due to lack of affordability.
• **Adequate financing for social protection must be provided**

Social protection measures supported food security and needed to be adequately financed and reach the people who needed them. A programme without adequate financing could create frustration among the intended beneficiaries and even lead to political problems.

• **Consumption of animal protein**

Global food-based dietary guidelines called for reducing the consumption of animal proteins, but consumption in low-income regions was already very low due to low incomes. A modest reduction of animal protein consumption in the developed world would meaningfully relieve the environmental burden and provide room for a small increase in consumption in the rest of the world. In Ethiopia, for instance, food consumption should increase to meet nutrition guidelines. However, aspirations should be managed to avoid an over-increase and achieve the amount necessary to support proper nutrition. This was a balance that needed to be struck.

• **Technological and data-driven innovations should not undermine autonomy**

Technological innovations such as gene editing and big data were generally the domain of large corporate actors and could undermine other initiatives. For example, such actors might aim merely to reduce the use of pesticides when a better goal would be to try to eliminate them. Likewise, ‘big data’ solutions might include incentives to sell machinery and data. The ability of farmers to benefit from these innovations, and not lose access to their own data, needed to be considered. Whereas power asymmetry in food systems was an issue to be monitored, pressure from consumers was leading to changes. There should be ongoing support for local innovation because agriculture was inherently local, being tied to soil conditions and local culture around food. Moving away from the idea that innovations needed to come from “somewhere else” would be a transformational shift.

In closing the meeting, Mr. Wilmoth thanked participants for a broad-ranging and rich discussion that had identified the latest evidence on how COVID-19 had impacted the pillars of food security, and the implications for future food system scenarios. He noted the urgency of concrete recommendations for transformative pathways to sustainable food systems. He also thanked the participating United Nations entities for their collaboration in preparing the CPD session.
ANNEX 1: ORGANIZATION OF WORK

28-30 October 2020

UNITED NATIONS EXPERT GROUP MEETING ON POPULATION, FOOD SECURITY, NUTRITION AND SUSTAINABLE DEVELOPMENT
Population Division
Department of Economic and Social Affairs
United Nations Secretariat
New York, 28-30 October 2020

Organization of work

Wednesday, 28 October

Introduction: New evidence and COVID-19 impacts

The 54th session of the Commission on Population and Development (19-23 April 2021) will consider the special theme “Population, food security, nutrition and sustainable development”. The first day of the expert group meeting will provide an introduction to the Commission’s deliberations on the theme; highlight new data on food security, nutrition and health; and review the impacts of COVID-19 on various aspects of food security and nutrition.

8-8.45 a.m.

Session I. Introduction and scene setting

This session will give background on the Commission on Population and Development, its mandate, the topics covered in the previous report of the Secretary-General on the theme, and the questions to be addressed in preparation for the 54th session in 2021. The session will also outline synergies of the Commission’s discussion of the special theme with other United Nations processes upcoming in 2021, including the High-level Political Forum on Sustainable Development and the United Nations Food Systems Summit.

- John Wilmoth, Director, Population Division, UNDESA – Welcome, introduction and review of the 53rd session of CPD
- Shantanu Mukherjee, Division for Sustainable Development Goals/DESA - HLPF discussion on Ending hunger and achieving food security
- James Lomax, Food Systems Summit Secretariat – The 2021 Food Systems Summit
- Moderator: Cheryl Sawyer, Population Division, UNDESA

8.45-9.55 a.m.

Session II. Food security, nutrition and health Moderator: Sandile Simelane, UNFPA
This session will present new data on food security and nutrition that has become available during 2020 and also new analysis of the affordability of healthy diets. In keeping with key focuses of the ICPD Programme of Action, it will also look at maternal and child nutrition and health, including impacts of COVID-19.

- Nancy Aburto, FAO - State of Food Security and Nutrition in the World 2020 (SOFI) - estimates and projections of food security, affordable healthy diets
- Jo Jewell, UNICEF - Levels and trends in child malnutrition: policy and programming implications
- Willibald Zeck, UNFPA - Impact of Covid-19 on maternal nutrition and health

9.55 - 10 a.m.  
**Break**

10 - 11 a.m.  
**Session III. COVID-19 and food security**

This session will address various pathways of impacts of Covid-19 on food security and nutrition. It will include a general overview as well as targeted presentations on value chains, food security in crisis situations, and impacts on migration and remittances.

- Jennifer Clapp, University of Waterloo – COVID-19 and food security
- Louis Bockel and Padmini Gopal, FAO Regional Office for Africa – COVID-19 impact on value chains in Africa
- Moïse Ballo, World Food Programme – COVID-19 and food security in crisis situations
- Alan de Brauw, IFPRI – Migration, COVID-19, and possible implications for food security
- Moderator: Vladimíra Kantorova, Population Division, UN DESA

**Thursday, 29 October**

**Future outlook for food systems – has COVID-19 changed any assumptions?**

The second day of the meeting will discuss the future outlook for various aspects of food systems, considering both a broader long-term view and new considerations raised by the COVID-19 pandemic.

8 - 9 a.m.  
**Session I. Future outlook for food systems, climate and environment**  
**Moderator: Pierre Boileau, UNEP**

This session will look at environmental impacts of food systems, interrelationships with climate change, sustainable diets and foresight scenarios for food and agriculture.

- Cynthia Rosenzweig, NASA/GISS and Columbia University – Report from AgMIP8: COVID-19, Climate Change, and Food Security
- Hugo Valin, IIASA - Revisiting sustainability pathways for food systems and land use in the aftermath of the COVID-19 crisis
- Marco Springmann, Oxford University - The health and sustainability implications of national and global food-based dietary guidelines, and updates on the affordability of healthy and sustainable diets
- Lorenzo Bellù, FAO – FAO foresight scenarios

9 – 9.55 a.m.
**Session II. Data including big data, innovation and technology**  
**Moderator: Ronald Jansen, Statistics Division/DESA**

The topics of technology, innovation and data (including big data) in food systems received limited focus in the 2020 report of the Secretary-General. This session will seek to draw out succinct messages and focus areas for the Commission’s attention.

- Fergus Sinclair, ICRAF – Agro-ecology and systemic technological innovation  
- Dejan Jakovljevic, FAO - Data, big-data and their use in food and agriculture  
- Anna-Verena Nosthoff and Felix Maschewski, University of Berlin – Global big-data dynamics and their implications

9.55 – 10 a.m.
**Break**

10 – 11 a.m.
**Session III. Food system transformation**  
**Moderator: Luz María de Regil, WHO**

This session examines selected aspects of changing food systems and their implications for livelihoods. Topics covered will include decent employment in rural areas; inequalities with a focus on the gender dimension; and impacts of rapid urbanization on rural areas.

- Elvis Beytullahév, ILO – Decent work in the rural economy  
- Susan Kaaria, FAO - Inequalities with focus on gender dimension  
- Steven Hagglade, Michigan State University - Impact of rapid urbanization on agricultural supply systems

**Friday, 30 October**

**Regional outlook**

The third day of the meeting will bring together experts from different regions to examine selected aspects of population, food security, nutrition and sustainable development. The meeting will conclude with a general discussion of key messages and recommendations for the report of the Secretary-General.

8 – 9.30 a.m.
**Session I. Key issues in selected regions**  
**Moderator: Katinka Weinberger, UNESCAP**

- Agnes Rola, University of the Philippines - Food system sustainability in Southeast Asia  
- Madhura Swaminathan, Indian Statistical Institute – Dealing with food and employment insecurity in the time of Covid-19  
- Valeria Pineiro, IFPRI – Food security in Latin America
• Lauren Bauer, Brookings Institution – Food insecurity in the United States of America
• Namukolo Covic IFPRI – COVID-19 and food insecurity in Africa

9:30 – 9:40 a.m. **Break**

9:40 – 11 a.m. **Session II. Discussion and conclusions**

• Moderator: Cheryl Sawyer, DESA
ANNEX 2: LIST OF PARTICIPANTS

28-30 October 2020

UNITED NATIONS EXPERT GROUP MEETING ON POPULATION, FOOD SECURITY, NUTRITION AND SUSTAINABLE DEVELOPMENT
Population Division
Department of Economic and Social Affairs
United Nations Secretariat
New York, 28-30 October 2020

LIST OF PARTICIPANTS

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Rome, Italy

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Mr. Elvis Beytulayev
International Labour Organization
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