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Having said that, I am going to turn straightaway to Mr. Cullen.

Máximo Torero Cullen, Chief Economist of the Food and Agriculture Organization (FAO), Assistant Director General for the Economic and Social Development Department of the FAO

Thank you so much for your kind invitation for this second year and let me try to present where we are and the major challenges we need to focus on in the future. Let me start by saying that relative to last year the news is not what we would have liked, meaning that the level of chronic undernourishment in the world remains very high with levels of 735 million people. If we project that to 2030, there will be around 590 million people chronically undernourished. If we take out the effect of Covid-19 and the war in Ukraine, we are talking about levels of around 190 million fewer people chronically undernourished.

Basically, there are roughly 735 million people chronically undernourished, which is projected to be about 600 million by 2030 taking into account the effect of Covid-19 and the war in Ukraine. If we look at the latest report we launched today and the new hotspots, we see that the situation is not improving at all. What we are observing is that there are 1 800 new hotspots in 22 countries and territories. This puts us in a situation where we have conflict with China, a very serious situation, which is worse than before and is worsening with the latest events.

The important thing to mention here is that these agri-food systems are going into significant problems of risk and uncertainty and that is what will drive the future. These risks and uncertainties are not only on the humanitarian side but also on the macroeconomic side with more than 61 countries in desperate straits, with problems with exchange rates because of the increase in interest rates, and significant links between the energy sector with biofuels as well as fertilizers, and of course, there is the problem of contamination and destruction of land. All that directly affects the agri-food sector through inputs, trade, and logistics, which affect overall production and of course, that will affect the prices. In addition, we also have debt distress. The challenge is that this is all happening under a lot of water distress and climate change and the latter will affect four dimensions, extreme temperatures, excessive and lack of water, and variability of climate indicators which make decision-making more difficult for farmers, but also based on this, this is an evolution because of climate change.

In this context of risk and uncertainty, we know that we have now passed six of the nine planetary boundaries and that means we are moving into the unknown, biophysical dynamics that are non-linear and could be exponential. Therefore, the frequency of these events could significantly increase over time and that is something we need to look at carefully. What will

happen and what we are experiencing in Spain today the doubling or tripling of insurance because of the frequency of weather events; that is the environment we will be facing.

I want to briefly raise four key transformation drivers. First, urbanization, which will continue; second, industrialization; third the importance of carbon neutralization, as you mentioned. We believe that we need good for today and for tomorrow and that does not mean producing more, more efficiently with less today, but also being able to make it more sustainable. That is what brings climate investment towards agri-food systems rather than the reverse because agri-food systems have the space to improve substantially and have major marginal returns in terms of energy reduction. The fourth lever is digitalization but let me start with the first three.

This slide shows urbanization and the relationship between that and the total population and the share of agriculture including fisheries and fishing, in total growth of domestic product. At a global level, the share of urban population grew from 37% in 1970 to 56% in 2019, while the share of agricultural GDP decreased from 5.4% to 4.2% and this is substantial, the change we are observing at global level. You can see the same in the high-income countries and then in China there is a big difference in what we are observing today.

We also see the population projection is expected to evolve in high-income countries and in China, with a clear stabilization of population in high-income countries and even a reduction in the case of China. However, this is not what we are seeing in Sub-Saharan Africa for example, where there is still a significant increase in the rural population but still not converging as we are observing in the case of China. This means that urbanization will be a significant challenge and something we need to look at carefully because the amount of the commodities we might need could vary accordingly.

On this slide I have approximated the industrialization by using the share of agricultural added value in GDP and the share of agriculture and employment and we can observe different dynamics depending on the region. While in the last 30 years proportionally labor has left the agricultural sector for manufacturing and services almost everywhere in low-income countries, labor productivity in these countries has remained almost constant, while it expanded during the structural transformation in high-income countries. Labor productivity in the rest of the economy has almost stagnated in Sub-Saharan Africa, Latin America and the Caribbean and Asia-Pacific, while it has barely increase in South Asia, the Near East and North Africa. This shows something very important that is also linked to the informality of these regions and how industrialization will evolve.

Agri-food systems also create pressures on our environment and that is something that we need to look at carefully, creating effects because of emissions, 31%; biodiversity loss; water scarcity and pollution. Those are the externalities but again, what I am saying is that we need to find a solution to these problems because we need to have good food for today and tomorrow. If we focus on greenhouse gas emissions and climate change, we will see that 31% of the global emissions, nearly 50% were from non-CO₂ gases and indirectly on farms by crop and livestock production activities; 20% by land use, change processes and mainly deforestation, big land degradation and 30% from the supply chain. That is the distribution so there is enormous potential for carbon neutralization.

On the next slide, we will see here that our agri-food systems need to be transformed to achieve this carbon neutralization. For this we need to improve governance of natural resources, improve productivity, which means producing more from less, improve production practices, improve consumption patterns and behavior and use cleaner energy. Our work here, the figure shown in the red bubble is the size of the problem and in the green problem the size of potential sequestration so there is enormous potential on the bigger problems in the use of energy, livestock use, in manure management, in fertilizers and rice to create



reductions. There is also enormous potential in land use and forest and peatland but also in soil management to reduce these greenhouse gas emissions. That is why I said that the agri-food system could be an opportunity to accelerate this process while at the same time ensuring that we produce what we need for today and tomorrow.

Finally, just to focus on what we can do and where we can make a difference in this process. Here we need to tackle at the same time the emergency situations with integrated humanitarian peace building policies, but we also need to protect our households, increasing resilience and scaling that climate resilience across agri-food systems. That is the only way we will be able to address the challenges of water and climate, and the only way we can contribute to the bigger axis of healthy diets, because today 3.1 million people do not have access to healthy diets. On the financing part there are several boxes that we need to look at. One is support to agriculture and how we can repurpose that and how we can accelerate and promote better incentives of the use of that support for agriculture, which is the repurposing agenda. Second, is of course out of the public sector but it is the private sector, international financial organizations and the traditional donors. That is the way we need to allocate resources to provide proper incentives. Next week on November 6, we are launching the first issue of a true cost accounting of food, which will provide a lot of insights and information on where these incentives should be aligned to minimize externalities from agriculture towards this idea of food today and for tomorrow. Thank you so much.

Jean-Michel Severino

Thank you very much, Mr. Cullen, for providing this broad vision and especially concluding on the policy directions we have to take. One point that I also take from your last slide is that you used several times the word healthy diets, which also means something that I did not say in my own introduction, that agriculture is also part of our health agenda, which also includes changing in the ways we produce food but also in the type of food we eat and how we consume it. Thanks so much for providing this big picture.