



# Climate Change and Food Security: A Recipe for Food Totalitarianism?

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The views and opinions expressed in this report are those of the authors and do not represent the views of the Valdai Discussion Club, unless explicitly stated otherwise.

ISBN 978-5-907318-58-8



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*\* Disclaimer: The views expressed in this chapter are those  
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## Key points

- Climate change is among the most pressing challenges of our age. In August 2021, the Intergovernmental Panel on Climate Change announced that 2 degrees of warming is all but inevitable, which is why the COP-26 conference in Glasgow in November 2021 generated so much public interest. But not all expectations were met.
- Global agriculture is becoming increasingly unsustainable in the face of climate change and land and water scarcity. Desertification and mass drought, which may lead to widespread famine and food insecurity in entire countries, are high on the list of the most pressing challenges, as they cause increased migration and humanitarian disasters.
- Rising ocean levels can cause flooding or render large coastal lowland areas unusable for agriculture, heightening the threat of hunger, lack of food supply independence, and increased migration.
- Overly optimistic forecasts are touted in politicised debates about climate change's consequences for the planet's temperate and boreal regions. Allegedly, warming will turn these regions into the "happy subtropics" with a warm and pleasant climate. In response, warnings are being issued about the melting of permafrost and unpredictable precipitation patterns.
- In the context of the Glasgow decisions, problems that should not be ignored have come into the spotlight. One concerns the initiative to reduce methane emissions. Given an anticipated increase in methane in the atmosphere due to the melting of permafrost (methane is a more potent greenhouse gas than carbon dioxide), the focus on reducing man-made emissions is quite justified. However, this ambitious programme puts food security in jeopardy.
- Livestock contributes significantly to methane emissions, inspiring radical efforts to introduce a special tax or excise tax on the consumption of beef and cow milk, similar to the taxes on tobacco and alcohol. The call to abandon the consumption of beef and cow milk and curtail livestock production, which will increase the gap between Global North and Global South, will be one of the main issues of environmental ethics in the medium term. This call to environmental action may be heard in the developed world, whereas reducing livestock production in the world's poorest countries would lead to an increased threat of hunger with a predictable increase in social problems and migration.

- The reduction and (in the not so distant future) cessation of logging operations is another initiative that received support in Glasgow. Here, too, the clash of interests between rich and poor countries is plain to see. In addition to commercial logging, forests in developing economies are being cut down at a rapid rate for firewood and expanding arable or pasture land. Thus, the causes of combatting climate change and improving global food security may eventually come into conflict.
- With the global imbalance in wealth distribution, the solution to these problems lies exclusively in the developed world paying extra compensation to the developing world. However, the Glasgow conference confirmed that rich countries are not in a hurry to pay out the already promised \$100 billion in compensation to poor countries. Clearly, even this vast sum will not be enough to cover the costs to the developing world of meeting the methane and deforestation targets, and it will need to be increased regularly. Otherwise, the Global South's food security could be in jeopardy.
- The question of consumption levels among the global population is gaining increasing salience, as is the extremely high ecological footprint that this consumption leaves in many developed countries. If the entire population of the Earth were to consume at Western levels, the resources of several planets such as ours (anywhere from three to five, according to various estimates) would be needed to meet that kind of demand. Given the global strategy of reducing human emissions, it may be tempting to put up a restrictive barrier to the middle-class consumption standards of the West, keeping it out of reach for most people in the developing world.
- According to the official FAO Food Outlook report for November 2021, food prices have been spiking since late 2020 due in large part to Covid-19 and the disruption of supply chains. However, climate change may lock in these price increases over the medium term.
- Climate change will increase the cost of resources for food production, primarily water and energy. The food security issue should be considered in the food – water – energy context. Inadequate supplies of one resource and/or its increased cost will lead to higher costs for another resource. Unless the pace of climate change is slowed, access to water will become limited and energy more expensive, especially during the transition to green energy, which means global food prices will rise.

- Another aspect of this problem relates to market forces. In addition to objective climate factors, corporations, food producers and distributors choose policies that have a tangible impact on rising food prices. Food prices may be subject to speculative pressure. Amid the production risks associated with climate change, the risk of additional upward market pressure on prices may become even greater. In any case, the sustainability of the natural ecosystem and what can be called the “market ecosystem” are at cross purposes.
- Does this mean that as the problem of food security worsens, a global transition to non-market mechanisms for the distribution of staple foods will be necessary? And that the current antimonopoly policies of states and the establishment of price corridors for food will not be enough? That’s quite possible. But there are dangers associated with the corrupted nature of government decision-making and collusion between states and certain corporations in the awarding of government contracts. In addition, keeping food prices artificially low usually means lower wages for agricultural workers.
- Things are not so simple when it comes to combining state and international regulations in the sphere of food production and trade. High food prices lead to increased protectionist measures to insulate the domestic market. Exporting countries may restrict exports in order to keep food available for the domestic market and to prevent excessive price hikes. Globally, these moves are driving up prices and exacerbating food insecurity.
- The effects of climate change may pose a political question of how acceptable certain protectionist measures in the food trade adopted by an individual state are, if they undermine global market stability. This may lead to sanctions on such a state.
- The perception of food as a key global public good may sooner or later be enshrined legally and politically at the global level. In this case, the state will lose sovereign control over the surplus food that is produced within its borders. It will be withdrawn and distributed among needy countries by decision of international entities. As the negative effects of climate change continue to intensify, this scenario no longer looks out of the realm of possibility.

- How can we avoid radical dystopias? What needs to be done to make sure food totalitarianism does not become a reality for humanity in the near future? Above all, it is important to make broad use of global best practices and technology to keep food production from further aggravating climate change. The use of the financial innovations towards this end should also become widespread. It goes without saying that this will require high levels of solidarity between rich and poor countries. But this is the only way forward.
- Importantly, fighting climate change should go hand in hand with efforts to ensure global food security. Otherwise, global food production, particularly in the developing countries, will become hostage not only to climate change, but to the efforts to combat it as well.

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## Climate change and food security: Glasgow's paradoxical outcomes

Climate change has become one of the most pressing challenges in the world. The IPCC-6 report released in August 2021 indicated that a minimum of 2 degrees of warming is inevitable. As a result, the COP-26 conference in Glasgow in November 2021 generated immense public interest. However, not all expectations were met. Greta Thunberg expressed her disappointment quite pithily: “Blah-blah-blah.” While agreeing with Greta that the Glasgow forum was not a breakthrough in global climate policy, admittedly, it was not completely in vain and a number of countries came together to support ambitious plans to cut methane emissions, scale down logging operations, etc.

In the face of climate change and land and water scarcity, world food security now features prominently on the agenda and global agriculture no longer appears sustainable. The most acute challenges include desertification and massive droughts impacting large areas in the Sahel and Asia, including Afghanistan. They shrink range and arable land, fuel conflicts and can cause widespread famine and food shortages in entire countries. This will increase migration flows and cause humanitarian disasters.



The rising global sea level caused by higher temperatures and melting glaciers has already led to an increase in soil salinity on low-lying coral islands in the Pacific Ocean and Indian Ocean and, as a result, to a decrease in the productivity of agricultural land. In the future, this can cause flooding or render significant coastal lowland areas unusable for agriculture, for example, in densely populated Bangladesh, heightening the threat of famine and increased migration.

Overly optimistic forecasts are occasionally touted during politicised discussions of the consequences of climate change for the temperate and boreal regions of the Earth, with some claiming that warming will turn this zone into the “happy subtropics” with a warm and pleasant climate in the near future. In response, warnings are issued about melting permafrost and unpredictable rainfall patterns.

These scenarios are not new. Analysts have considered the impact of climate change on food security before as well. However, in the context of the Glasgow COP-26 decisions, individual problems have come to light even more clearly and warrant special attention.

One of them is related to the initiative to reduce methane emissions. Scientists have determined that in terms of “global warming potential” – that is, the ability of various gases to absorb the thermal radiation of the Earth and trap it in the atmosphere, known as the greenhouse effect – methane CH<sub>4</sub> on a hundred-year time horizon is approximately 28 times more potent than carbon dioxide CO<sub>2</sub>.<sup>1</sup> So far, the concentration of methane in the atmosphere has been much lower than carbon dioxide. The level of carbon dioxide in the atmosphere is about 410 parts per million (up from about 280 ppm since the pre-industrial era of 1750), while methane is only 1,834 parts per billion (up from 772 ppb since the pre-industrial era), meaning there is about 224 times less methane than carbon dioxide in the atmosphere. However, given the anticipated acceleration in methane emissions with the melting of the permafrost and at 28 times the global warming potential as carbon dioxide, the COP-26 participants’ focus on reducing anthropogenic methane emissions is quite justified.

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<sup>1</sup> Hereafter all figures are given according to Ступин Д.Ю. Влияние изменения климата на агроэкологические системы. СПб. 2020. С.73-81, using data from: Blasing T.J. Recent Greenhouse Gas Concentrations. Carbon Dioxide Information Analysis Center. Oak Ridge National Laboratory. Oak Ridge. 2016. DOI: 10.3334/CDIAC/atg.032.

However, this ambitious reduction programme puts food security at risk. As is known, livestock (cattle) production is a major source of methane emissions. Scientists estimate that the 1.5 billion cows around the world produce an equivalent of about 2 billion metric tonnes of CO<sub>2</sub> per year (70 kg to 120 kg of methane per year per cow, given that methane is 28 times more powerful than CO<sub>2</sub>). This is approximately 25 percent of the world's anthropogenic methane emissions. According to the UN Food and Agriculture Organisation, livestock accounts for 18 percent of greenhouse gases globally.<sup>2</sup>

Producing red meat requires inordinately more farmland than most other agricultural products, and the livestock emit methane. The issue matters not only in the context of the growing population of the planet but also efforts to reduce poverty. Global meat production tripled<sup>3</sup> between 1971 and 2010 and continues to grow, putting an even greater strain on natural resources. Therefore, in addition to modifying production practices (producing plant-based and artificial meat), higher prices for meat products will become the new normal. The media will portray this as a step towards addressing environmental concerns.

Projects are already being discussed in the EU and Russia<sup>4</sup> to introduce a special tax or excise tax on the consumption of beef and cow milk, similar to excise taxes on tobacco and alcohol. Clearly, a call to stop consuming these products and to reduce livestock production will be a major environmental ethics issue in the medium term.

This will further widen the gap between Global North and Global South. The developed world may well heed this environmental call, but reducing livestock production in poor economies will exacerbate the threat of famine, which would be almost entirely man-made in this scenario. The ensuing rise of social problems and conflicts follows logically.

Reducing and stopping deforestation in fairly short order is another initiative that enjoyed the support of a number of countries in Glasgow which will have a disparate impact on rich and poor countries. In the developing world, in addition to commercial logging, forests (where they exist) are being felled at a rapid rate for firewood and to expand agricultural production (arable or pasture land). An absolutely critical measure for combating climate change has the potential to worsen the food security situation.

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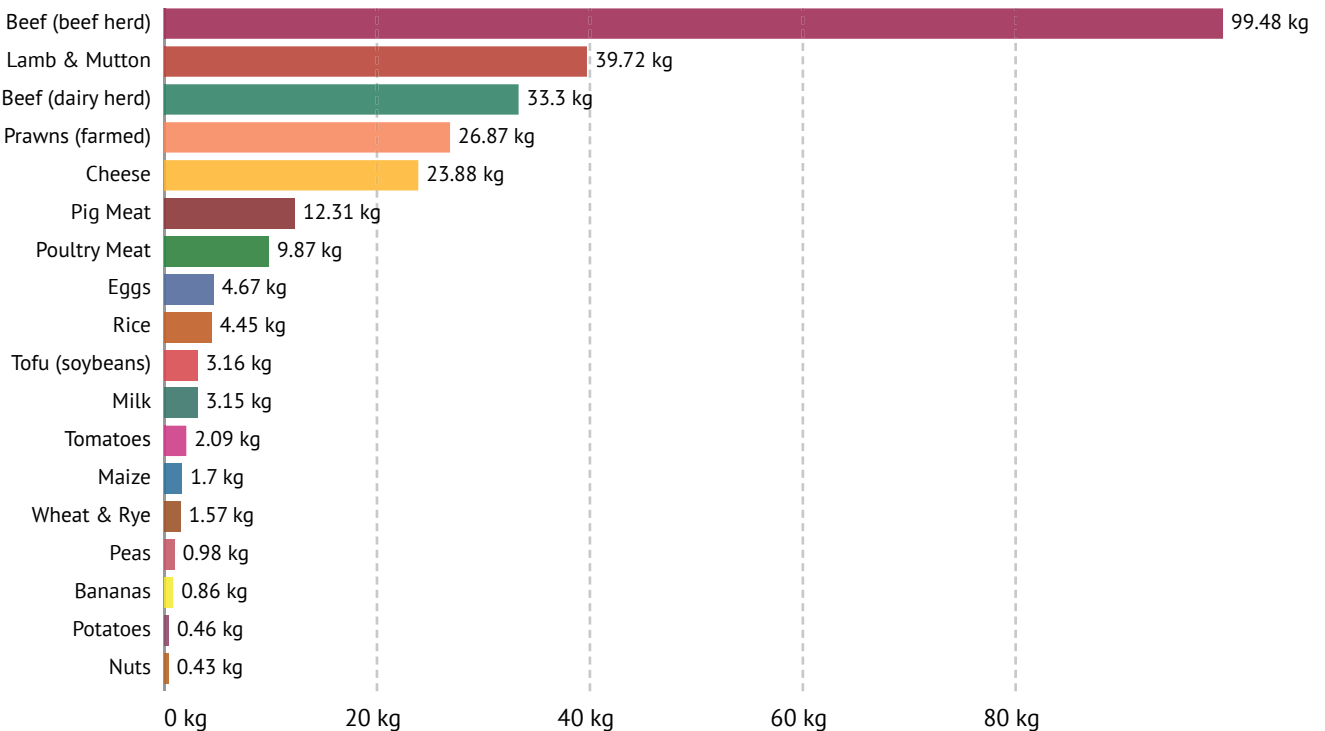
<sup>2</sup> Gerber P.J. Tackling Climate Change Through Livestock – A Global Assessment of Emissions and Mitigation Opportunities. Rome: Food and Agriculture Organization of the United Nations. 2013.

<sup>3</sup> <https://ourworldindata.org/environmental-impacts-of-food>

<sup>4</sup> <https://ria.ru/20210804/myaso-1744355295.html>

## GREENHOUSE GAS EMISSIONS PER KILOGRAM OF FOOD PRODUCT

Greenhouse gas emissions are measured in kilograms of carbon dioxide equivalents (kgCO<sub>2</sub>eq) per kilogram of food product. This means non-CO<sub>2</sub> greenhouse gases are included and weighted by their relative warming impact.



Source: Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. [OurWorldInData.org/environmental-impacts-of-food](https://www.ourworldindata.org/environmental-impacts-of-food)

Due to global wealth inequality, the measures that are being suggested for the developing world to take (transitioning from extensive to intensive agriculture, the introduction of climate-friendly fertilisers, and others) can only be implemented with the help of additional compensation provided by the wealthiest countries. However, the Glasgow conference confirmed that rich countries are in no hurry to pay the earlier promised \$100 billion in compensation to poor countries. Clearly, though, even this enormous amount of money will not be enough to cover the developing world's costs involved in implementing these initiatives to reduce methane emissions and deforestation, and it will have to be increased on a regular basis.

Also notable is the fact that, for reasons of political correctness, mainstream discussion of rising anthropogenic greenhouse gas emissions and food security practically ignore the growth of the Earth's population, much less the Malthusian overpopulation issue. An international solution is impossible at this point in history. As such, we also will not address it.

However, one aspect of this problem – the consumption level of each individual on the Earth and the exceedingly high ecological footprint of consumers in many developed countries – is being discussed at the mainstream level. If the entire population of the Earth was to consume at Western levels, the resources of several planets like ours (anywhere from three to five, according to various estimates) would be needed to meet that kind of demand. With the global strategy towards reducing man-made emissions, it may be tempting to put up a restrictive barrier to the kind of middle class consumption enjoyed in the West, denying entry to most people in the developing world. This is more than food security. This is about the right to progress and a dignified life.

Reducing the ecological footprint and consumption of the developed world is the only alternative. It's not that nothing is being done towards this end, and the new field of environmental ethics is beginning to influence consumption as well. However, achieving “longtermism” in the developed world, with people giving up the habit of constantly buying new devices, cars, clothes and other products, is still a distant prospect. One obstacle to achieving it is major corporations that constantly release new models of products and encourage excess consumption. What's more, many leaders of these corporations are at the forefront of the green movement and donate billions to support it. A dialectical duality of sorts.

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## Food security: The global level

Food security was first discussed seriously at the 1974 World Food Conference. It was about providing the necessary amount of food and price stability for a limited range of staples at the national and international levels. This approach suited the spirit of the times. Shortly before this, the first report of the Club of Rome was released which determined the limits of population growth on the Earth, when food scarcity (hunger) starts to directly reduce the population. Accordingly, at this stage, food security was seen as a form of national self-sufficiency and in terms of the ability of the nation state to independently produce the necessary amount of food to meet the basic needs of the population.

In the 1980s, with the liberalisation of trade and the rise of global trade and production chains, the focus expanded to cover more than physical access to food and included economic access. So, the concept of food security was expanded to include economic factors.

The 1990s saw the start of a new period of rethinking food security. The adoption of the 1996 Rome Declaration on World Food Security<sup>5</sup> was a landmark event.

The document emphasises the multidimensionality of the concept itself, which, in addition to access to food and its affordability, intersects with sociopolitical and economic development issues such as stability, production and consumption patterns, gender equality, environmental protection, corruption, conflict and war. Poverty and destitution are recognised as the main factors undermining food security. The idea of the “right to food” was introduced by the UN Declaration of Human Rights, and the “right to adequate food” is also discussed. At the same time, trade and trade policy are seen as the key element in achieving food security.

Today, food security does not mean “food autarky.” The UN and FAO approach combines food security, affordability, nutrition and quality with the principles of sustainable development along the entire food production chain. More attention is paid not only to sustainable production, but also to a universally accessible healthy diet.

Food is one of the UN’s central issues and overlaps with almost half of the Sustainable Development Goals (SDGs) (poverty eradication, good health and well-being, reduction of inequality, responsible consumption and production, combating climate change, conservation of marine ecosystems, conservation of terrestrial ecosystems, and partnership for sustainable development). By 2030, the UN sets the goal of ending hunger by providing “year-round access to safe, nutritious and sufficient food.”<sup>6</sup>

According to the latest FAO estimates, about 10 percent of the global population goes without food (in FAO reports, hunger is defined as chronic

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<sup>5</sup> <http://www.fao.org/3/W3613E/W3613E00.htm>

<sup>6</sup> <https://www.un.org/sustainabledevelopment/hunger/>

malnutrition).<sup>7</sup> Moreover, the trend lines do not inspire optimism, since the number of hungry people in the world has not decreased since 2014.<sup>8</sup> The negative dynamics were evident long before the Covid-19 pandemic, which only exacerbated the problem. In 2020, there was a surge in the number of people going without food, increasing by 1.5 percent in one year.

So, the world is not on track to eradicate hunger. If things remain as they are, by 2030 the number of people affected by hunger will exceed 840 million people<sup>9</sup>. These data have been officially cited by the UN. Other projections accounting for the effects of the pandemic suggest that after the peak is passed, global hunger will slowly decline and reach 660 million undernourished people in 2030.<sup>10</sup>

Whereas Asia is projected to see a significant reduction in hunger by 2030 (from 418 million in 2020 to 300 million people), Africa, by contrast, is facing a significant increase in hunger (from over 280 million to 300 million people).<sup>11</sup>

Another aspect of food security is related to the growing numbers of obese people, overconsumption and increased food waste. According to the UN and FAO, relatively high prices for healthy food combined with income inequality affect diets and eating patterns. In 2019, about 3 billion people could not afford a healthy diet. Most of them live in Asia (1.85 billion) and Africa (1.0 billion), although healthy eating also remains out of reach for many people in Latin America and the Caribbean (113 million), as well as North America and Europe (17.3 million).<sup>12</sup>

At the same time, on average, enough food is produced around the world to ensure adequate supplies for the entire population of the Earth.<sup>13</sup> The dichotomy of global growth has remained unchanged, and the problem

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<sup>7</sup> <http://www.fao.org/3/cb4474en/cb4474en.pdf>

<sup>8</sup> <http://www.fao.org/3/ca9692en/ca9692en.pdf>

<sup>9</sup> <http://www.fao.org/3/ca9692en/ca9692en.pdf>

<sup>10</sup> <http://www.fao.org/3/cb4474en/cb4474en.pdf>

<sup>11</sup> <http://www.fao.org/3/cb4474en/cb4474en.pdf> – P. 68.

<sup>12</sup> <http://www.fao.org/3/cb4474en/cb4474en.pdf>

<sup>13</sup> <http://www.fao.org/3/ca9692en/ca9692en.pdf>

of food security manifests itself in two extremes: people in some countries are starving, while in others the consumption and overconsumption of cheap low-quality food is on the rise. Today, the number of hungry and obese people on the planet is about the same.

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## Food security in Europe

It may appear that food security has been supplanted by other issues on the European agenda. But the issue came back into focus in Europe at the peak of the “first wave” of the pandemic, when border closures and a lack of seasonal workers strained agricultural and food production chains.

If the origin of the coronavirus as a zoonotic infection coming from a market in Wuhan is confirmed, it would also mean that the current pandemic is nothing more than a consequence of food insecurity. Given the fact that products are transported at high speed and over long distances, regional food crises can periodically break out and develop into epidemics and emergencies.

In fact, in the EU, food security has already become part of the green agenda and is an increasingly salient issue. The EU is in the final stages of discussing reforms of the Common Agricultural Policy focusing on sustainability, reducing farmland and the principle of enhanced conditionality.<sup>14</sup> In addition, one of the Green Deal’s sections – the Farm to Fork (F2F) strategy – concerns the renewal of the EU agrifood system by reducing the use of pesticides and antibiotics, food waste and introducing Nutri-Score food labeling and a Mediterranean label. In addition to this, in 2016 the European Commission launched the Food 2030 initiative, which was also designed to reform food systems.<sup>15</sup>

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<sup>14</sup> [https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key\\_policies/documents/future-cap-and-green-deal\\_en.pdf](https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/future-cap-and-green-deal_en.pdf)

<sup>15</sup> [https://ec.europa.eu/info/research-and-innovation/research-area/food-systems/food-2030\\_en#timelineoffood2030policy](https://ec.europa.eu/info/research-and-innovation/research-area/food-systems/food-2030_en#timelineoffood2030policy)

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# Russia: Between food sovereignty and exports

Russia's first Food Security Doctrine was approved by President Dmitry Medvedev in 2010. This document's strategic goal was maintaining domestic production stability and the necessary inventory of safe agricultural, fish and other products from aquatic biological resources, as well as food.<sup>16</sup>

The document defines food security as “the state of the country's economy which ensures the food independence of the Russian Federation, guarantees each individual's physical and economic access to food products that meet the requirements of Russian legislation on technical regulation, in amounts necessary for maintaining an active and healthy lifestyle.” Based on this, the main food security aspects include economic and physical availability of food, safety of food and increasing its production (through improving soil fertility, developing livestock production and using innovative technology), as well as customs and tariff regulation.

Threshold values were also introduced for the production of certain foods as a share of the total volume of commodity resources (including carryover) of the domestic market, which ensure food independence. The 2010 doctrine included the following goods and their threshold values: grain – at least 95 percent; potatoes – at least 95 percent; milk and dairy products (milk equivalent) – at least 90 percent; meat and meat products (meat) equivalent – at least 85 percent; table salt – at least 85 percent; sugar – at least 80 percent; vegetable oil – at least 80 percent; fish products – at least 80 percent.

Factors that weaken food security are considered. In addition to macroeconomic factors, foreign trade and technology, agro-ecological factors arise in connection with climate change, as well as the aftermath of natural or man-made disasters.

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<sup>16</sup> <http://kremlin.ru/acts/bank/30563/page/1>



In January 2020, President Vladimir Putin issued an executive order approving a new Food Security Doctrine of the Russian Federation<sup>17</sup>, which supplanted the 2010 doctrine. The food security concept is interpreted the same as in the previous version (physical and economic access to food which meets requirements, including EAEU standards), and the food independence concept is addressed separately.

Compared to the previous version, the list of foods that guarantee food security was expanded (vegetables and melons – at least 90 percent; seeds of the staple agricultural crops of domestic selection – at least 75 percent; fruits and berries – at least 60 percent).

The new document has a green tint, and its long-term tasks include sustainable development, the modernisation of agriculture and fishery, the domestic market infrastructure; the increase of agricultural output, raw materials and food which meet existing environmental, sanitary-epidemiological, veterinary and other standards; restoring and improving the fertility of agricultural land, preventing the reduction of agricultural land, rational use of this land, protecting and preserving agricultural land from water and wind erosion and desertification; creating a highly productive sector in agriculture which relies on modern technology and employs researchers and highly skilled specialists.<sup>18</sup>

Unlike the previous revision, this one separately stipulates that climate represents a threat to food security, citing adverse climatic changes and severe weather events; land degradation; and decreased soil fertility.

Notably, one of the doctrine's goals is to fulfil the agri-food export potential ("achieving a positive trade balance in agricultural products, raw materials and food"). Another goal is to encourage healthy lifestyles among the population.

Thus, different countries are at different stages of understanding food security. The poorest are literally starving, meaning food security for them is primarily a question of food availability. The developed countries are

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<sup>17</sup> <http://www.kremlin.ru/acts/bank/45106>

<sup>18</sup> <http://www.kremlin.ru/acts/bank/45106>

focused on quality and nutritional value with an emphasis on sustainable practices. Russia interprets food security as food independence (“food sovereignty” achieved through local production).

Many modern conflicts are waged with food and agricultural resources. Just think of the soy factor in China-US relations, wine in the China-Australia conflict, or food aid to the DPRK in the context of the conflict on the Korean Peninsula. As the climate continues to change, the negative impact on food production will only intensify. Political and armed conflict over unequal access to food should be expected.

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## Hunger and climate

In the early 2000s, it was generally accepted that the relationship between crop failure and hunger was getting weaker, while socio-political change, conflicts and wars were growing in importance<sup>19</sup>. FAO reports, however, indicate that one of the reasons behind worsening food crises are extreme changes in climate (the so-called climatic shocks). According to 2019 data, extreme weather events and related economic disruptions are increasingly being felt.<sup>20</sup>

Weather events, not to mention climatic shocks, primarily affect agricultural production and harvests, and are capable of playing havoc with production-consumer chains. Apart from that, crop failures cause price increases, which in turn worsen socioeconomic tensions both in consumer and producer countries.

Currently, the most damaging types of extreme weather are draught and flood, which are the predictable result of climate change rather than sporadic calamities, which also doubled in number between 1990 and 2016<sup>21</sup>. A European Environment Agency report says that the changing climate can

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<sup>19</sup> Devereux, S. and Maxwell, S. (eds). Food security in sub-Saharan Africa, London: ITDG. 2001.

<sup>20</sup> [https://www.fsinplatform.org/sites/default/files/resources/files/GRFC\\_2020\\_ONLINE\\_200420.pdf](https://www.fsinplatform.org/sites/default/files/resources/files/GRFC_2020_ONLINE_200420.pdf)

<sup>21</sup> [https://www.youtube.com/watch?v=ZNoQL0tWF2c&list=PLhokxMQVG0jWI4kQ6ygbwz9cp\\_jae\\_ikE&index=15](https://www.youtube.com/watch?v=ZNoQL0tWF2c&list=PLhokxMQVG0jWI4kQ6ygbwz9cp_jae_ikE&index=15)

modify the structure of the EU's agro-industrial production. Their forecast is that the crop yields in Mediterranean countries will decline, while the growing seasons in northern and western Europe will become longer, making it possible to intensify agriculture there.

Climate change, primarily in the form of higher temperatures), will affect Southern Europe (Italy, Greece, Portugal, Spain, and southern France) the most, shrinking farmland and reducing output.<sup>22</sup> Forecasts indicate that by 2100, farmland value in these areas will decline by 60-80%. Italy, accounting for two-thirds of that decline, stands to lose between €58 and 120 billion.<sup>23</sup> Vine crops in Europe's historical southern regions are threatened as well.

Today, agricultural production remains one of the main reasons behind soil degradation and loss of biodiversity, with farmland constituting nearly 38% of the land surface (one-third of it used as arable lands and the rest – as pastures).<sup>24</sup> The UN records that population growth and an increase in people's food consumption put more pressure on soils, with the result that global arable area is shrinking (going from about 0.45 hectare per capita in 1961 to 0.21 hectare in 2016<sup>25</sup>).

Generally speaking, the shrinking of agricultural land fits the European vision for a common agricultural policy. At the same time, the EU intends to boost food imports from third countries that do not always observe environmental standards as high as those in Europe. Increased EU demand will only aggravate the environmental situation in developing countries, where a surge in demand will cause a production boom.<sup>26</sup> This is emerging as a point of contention in the debate over ratifying the already signed agreement between the EU and MERCOSUR.

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<sup>22</sup> <https://www.euractiv.com/section/agriculture-food/news/climate-change-will-dramatically-devalue-farmland-in-southern-europe-eu-agency-reveals/>

<sup>23</sup> <https://www.euractiv.com/section/agriculture-food/news/climate-change-will-dramatically-devalue-farmland-in-southern-europe-eu-agency-reveals/>

<sup>24</sup> <http://www.fao.org/sustainability/news/detail/en/c/1274219/#:~:text=Globally%2520agricultural%2520land%2520area%2520is,and%2520dati%2520FAO>

<sup>25</sup> <http://www.fao.org/sustainability/news/detail/en/c/1274219/#:~:text=Globally%2520agricultural%2520land%2520area%2520is,and%2520dati%2520FAO>

<sup>26</sup> <https://valdaiclub.com/a/highlights/the-european-union-s-green-wars/>

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# Food security and migrants

Each year, FAO issues reports on the state of food security and nutrition in the world.<sup>27</sup> Apart from the problem of food access, they also address agriculture and migration, which is no accident given the large share of foreign workers involved in agriculture. A separate item is seasonal internal migration from other regions for work during the sowing and harvesting seasons. Migrants are an important source of cheap labour, including in agriculture. Countries at different levels of development can be subdivided into groups that accept low-skilled or skilled foreign migrants. An ILO report has identified the main characteristics of migration processes in agriculture.<sup>28</sup> Despite the fact that the report covers the past decade and does not reflect changes that have occurred during the last few years, its conclusions are still relevant.

First, the agriculture industry is more likely to hire foreign seasonal workers than encourage internal seasonal migration (this is particularly widespread in advanced countries).

Second, this sphere has weak oversight and is largely decentralised, something that involves the lack of decent working and living conditions for workers. As a consequence, there are no mechanisms to protect this category of workers. Acting through agencies or aggregators, employers seek to hire cheap and low-skilled labour on a large scale and advertise more jobs, fearful as they are to be left without a sufficiently large workforce. Weather in different countries is a factor influencing the beginning of the harvesting season, which can vary from year to year, something that also causes chaos on the markets, where workforce shortages and gluts can occur simultaneously. The short timeframes for hiring (explained by the need to quickly take in the harvest) make adequate medical check-ups

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<sup>27</sup> FAO report The State of the Food Security and Nutrition in the World 2021 <http://www.fao.org/3/cb4474en/cb4474en.pdf>

<sup>28</sup> ILO report Migrant Workers in Commercial Agriculture [https://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---migrant/documents/publication/wcms\\_538710.pdfB](https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---migrant/documents/publication/wcms_538710.pdfB)

impossible. But in the past decade the WHO has recorded no serious incidence of disease<sup>29</sup> related to migrants as possible carriers.

Third, an individual worker's employment is quite narrow and temporary in nature and yearlong contracts in the industry are very rare. In fact, this deprives them of a chance to plan their earnings and movements. The closure of borders between countries in 2020 revealed the complexity of this problem. The only ones who were lucky to remain in closing countries were those categories of migrants who had regular contract jobs. Employing seasonal workers in EU countries, among others, became possible as early as in September 2020<sup>30</sup>. But this relaxation of the rules took place after the end of harvesting, which required that countries tap the potential of internal migration.

Fourth, the type of migration flows under review consists mostly of physically fit men, because harvesting is physically demanding. Since an employer must provide workers with accommodations, the industry is notorious for gender discrimination, as farms can save by not maintaining separate lodgings. In a number of cases this means not only co-habitation but also poor living conditions. Where there is no legal support for migrants, employers can violate their rights with impunity.

Fifth, government policies towards industry representatives are not the same either. Many governments approve legislation only after specific incidents or cases. This mostly depresses internal migration, which is replaced by international migration. Migrants are much less protected, and employers have an opportunity to choose cheaper workers.

In developing regions with high rates of urbanisation, internal migration accounts for more than 50% of the total. EU countries have a history of specialising in fruit and vegetable growing and each summer

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<sup>29</sup>World Health Organization/Europe report (2020). *Health and well-being in the voluntary national reviews of the 2030 Agenda for Sustainable Development in the WHO European Region 2016–2020*. URL: [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0010/465886/Health-and-well-being-SDG-reviews-eng.pdf](https://www.euro.who.int/__data/assets/pdf_file/0010/465886/Health-and-well-being-SDG-reviews-eng.pdf)

<sup>30</sup>United Nations Department of Economic and Social Affairs, Population Division (2020). *International Migration 2020 Highlights (ST/ESA/SER.A/452)*. URL: <https://www.un.org/en/desa/international-migration-2020-highlights>

hire a large number of hands. The imposition of restrictions in 2020 has dealt the industry a strong blow. To compare: more than 1.3 million national workers left the agricultural sector from 2011 to 2017, whereas the share of foreign labour grew from 4.3 to 6.5 percent. European countries' claims on labour resources amount to 300–400 thousand (the main recipients are Spain, Italy, Germany, and the Netherlands). Outside the EU, the UK is the principal destination, but its needs are much more modest, being in the environs of 70 to 80 thousand.

Yet another trend is the restructuring of the economy in a way that reduces the importance of agriculture and, accordingly, the number of migrants engaged in manual labour. In the future, digitalisation and robotics will reduce the cost of hiring foreign labour and will partially solve the above problems.

Countries with different levels of economic development experience a wide range of difficulties in the area of agricultural migration.

Countries with accelerating development are characterised by high numbers of young people in rural areas, something that may be a result of the so-called baby boom. For such states, it would be a rational thing to diversify various types and stages of farm work in order to maintain balance on the labour market. We have the example of China, where a high percentage of workers are employed in agriculture<sup>31</sup>. The need for resources is met predominantly by internal migration. External labour migration to China is destined for other economic sectors.

Another category includes those countries which are facing the problem of rural youth unemployment and unstable living situations. Their pace of development is insufficient for integrating the new workers coming to rural labour markets. The challenges here are linked with the fact that governments have to maintain an interest in agricultural employment in areas and regions characterised by an outflow of workers. In Russia, for example, rural localities are losing people to cities. Migration exchanges exist between regions, but each year, less than 50,000 are employed in other agricultural areas and regions. External migration flows to the industry (predominantly from CIS countries, primarily Tajikistan and Uzbekistan) tended to grow until 2014. Changes in currency rates relative to the rouble and the upfront costs of seeking harvesting work motivate labour migrants to reorient and look elsewhere.

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<sup>31</sup> <https://www.statista.com/statistics/270327/distribution-of-the-workforce-across-economic-sectors-in-china/>

The situations in countries beset by international conflicts are a matter of separate interest. For example, two Middle East countries specialising in agriculture, Iraq and Syria, are currently plunged in protracted crises. Rural areas are strongly affected by such crises for yet another reason, which is that they are precisely the destination for refugees and internally displaced persons.

Countries with transitional or advanced market economies have relatively high levels of urbanisation. Consequently, local agricultural sectors mostly use workers from other regions or countries. In the EU countries, for example, the shortage of migrant workers in agriculture was particularly conspicuous during the pandemic and soon thereafter, when government-introduced restrictions substantially curtailed the inflow of unskilled farm labour from abroad.

Countries with significant appeal for migrants (USA, Germany, UK) have to deal with problems arising from migrants' difficulty integrating and insufficient social cohesion. Improving laws on protecting migrants' rights will encourage their social and economic integration in host societies. There are international cooperation mechanisms that can help address this task. We are referring to bilateral agreements between countries of destination and countries of origin, which create favourable conditions for temporary or seasonal migration.

The COVID-19 pandemic and the introduction of restrictive measures with regard to citizens of other countries has revealed how interconnected economies are. No country today is purely a host or transit country, or a country of destination. As a rule, each nation performs two or three functions at once.

Analysis of agricultural migration is complicated by the dearth of data. A portion of workers are paid off the books, enabling farms to save even more on compensation and care. Comprehensive fact-finding efforts during population censuses and migration research are needed to obtain correct data on internal and international migration.

The restrictions have a particularly negative impact during the peak season in manual labour-dependent vegetable growing and fruit farming. Many developed countries introduced a number of special measures to make up for labour shortages in agriculture, specifically ones to encourage internal migration. But this failed to yield tangible results and the authorities had to open the borders for seasonal agricultural migrants

from abroad. On March 30, 2020, the European Commission published practical recommendations on how to ensure free movement of essential workers in the era of COVID-19. The recommendations singled out the category of “seasonal workers” and prioritized their unhindered access to work locations. In June of the same year, the European Parliament issued a resolution on the “adequate protection of seasonal workers from COVID-19 and its effects.”

One of the most widespread alternative mechanisms was involving local personnel in the performance of agricultural work. The rise in unemployment and an increase in the number of those unable to continue performing their job on account of the restrictions could in part encourage workers to switch over. Governments hoped that it was the unemployed who would make up for labour shortages in agriculture during the peak season. An information and advertising campaign was launched to promote hiring for seasonal work. Certain European countries (Spain, France, and Belgium) maintained unemployment benefits and social allowances for those willing to work in the fields on a seasonal basis. These measures made it possible to meet part of the demand, and in autumn, the number of agricultural workers surged following a step-by-step restoration of travel with countries in other regions. Thus, the pandemic has revealed the advantages and disadvantages of using migrants in agriculture, specifically for the EU countries.

One of the most widespread concerns linked to hiring migrants is that they may be carriers of disease, including COVID-19. Whether this concern is valid can be checked with the help of published WHO reports. Regrettably, there is still no regulatory migrant health policy. Therefore, those coming as hired workers to the EU may well import this or that disease or get sick upon arrival, because health is affected by working and living conditions.

Generally, as mentioned, the problem is the lack of laws protecting the rights and interests of migrant workers. In agriculture, however, there is a direct relationship between the cost of labour and the final price of products. Automation and mechanisation, wherever justified and possible, could help to change the situation.



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# Innovative blended financing for more food security

Food security requires investments. These investments need to be financed. Which financial solutions are the most effective and efficient in fostering global food security?

More and better financing is necessary to eradicate food insecurity, understood as the lack of regular access to enough safe and nutritious food due to unavailability of food and/or lack of resources (FAO<sup>32</sup>). Close to 12 percent of the global population was severely food insecure in 2020, representing 928 million people (FAO). Additional resources required to end hunger by 2030 were estimated at USD 265 billion per year<sup>33</sup>. However, the COVID-19 pandemic has worsened food insecurity, resulting in an additional 118 million people facing hunger in 2020<sup>34</sup>. Supply and demand shocks due to mobility and trade restrictions, supply chain disruptions and the economic recession have revealed the fragility of our food systems. Transforming food systems in a way that not only radically improves food security but also mitigates climate change, safeguards biological diversity and ensures healthier diets calls for an estimated USD 300 to 350 billion of additional funding each year<sup>35</sup>.

Different forms of financing are needed. Patient capital and long-term debt are necessary to fund capital expenditures throughout the value chain. In agricultural production, to grow output, increase productivity, improve resilience to climate change and weather shocks while implementing more sustainable farming practices. But also in logistics, storage, processing and distribution, to make supply chains more

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<sup>32</sup> <http://www.fao.org/hunger/en/>

<sup>33</sup> FAO, IFAD, and WFP. 2015. Achieving Zero Hunger. The critical role of investments in social protection and agriculture. <http://www.fao.org/3/i4951e/i4951e.pdf>

<sup>34</sup> FAO. 2020. Impacts of COVID-19 on food security and nutrition: developing effective policy responses to address the hunger and malnutrition pandemic. <http://www.fao.org/3/cb1000en/cb1000en.pdf>

<sup>35</sup> The Food and Land Use Coalition. 2019. Growing Better: Ten Critical Transitions to Transform Food and Land Use. <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>

efficient and reduce food loss and waste. The provision of adequate short-term funding is equally strategic to cover the sector's significant working capital needs. This ranges from pre-harvest financing, for the farmers to acquire the right inputs, to trade finance, with 80 percent of the world population depending on imports for some food and nutrition needs. According to the WTO, companies' working capital costs have increased on average by 30% in 2020 and by 60% in some developing countries<sup>36</sup>, with the global trade finance gap being estimated around USD 1.5 trillion across all sectors (ADB).

In 2018, the Saudi Agricultural & Livestock Investment Company ("SALIC"), a subsidiary of Saudi Arabia sovereign fund, acquired Mriya, a large private agro-holding that cultivates grains over 150,000 hectares in Ukraine and was valued around USD 240 million.<sup>37</sup> SALIC's aim is to make investments "to achieve a food security strategy by providing food products and stabilizing their prices". Still, future grain deliveries to Jeddah will depend on external factors like weather in Ukraine or potential export restrictions from Ukrainian authorities. Rather than investing in farming abroad, the Abu Dhabi sovereign fund ADQ preferred to focus on the supply chain. In 2020, it acquired a 45 percent stake in Louis Dreyfus Company, a leading food merchant and processor. The deal included the signing of a long-term supply agreement guaranteeing the sale of agri-commodities to the United Arab Emirates (UAE).<sup>38</sup> According to the UAE's Food and Water Security Minister, this transaction is an important part of the emirates' food security strategy.<sup>39</sup> Yet few countries have the financial resources of Riyadh and Abu Dhabi. At a more global and systemic level, one of the key challenges lies in channelling finance to small farmers. Those cultivating less than two hectares produce around one third<sup>40</sup> of the world's food output and yet are largely food insecure themselves.<sup>41</sup> Around USD 170 billion – 70 percent – of global demand for

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<sup>36</sup> [https://www.wto.org/english/news\\_e/news21\\_e/trfin\\_17may21\\_e.htm](https://www.wto.org/english/news_e/news21_e/trfin_17may21_e.htm)

<sup>37</sup> <https://www.ft.com/content/49fff8b8-b664-11e8-bbc3-ccd7de085ffe> Saudi Arabia's Salic strikes deal to boost Ukraine farming, Financial Times

<sup>38</sup> <https://www.ldc.com/press-releases/louis-dreyfus-company-to-enter-into-strategic-partnership-with-adq/>

<sup>39</sup> <https://www.reuters.com/article/us-emirates-food-idUSKBN2BH280>

<sup>40</sup> <http://www.fao.org/family-farming/detail/en/c/1394557/>

<sup>41</sup> IFAD and UNEP. 2013. Smallholders, food security and the environment. [https://www.ifad.org/documents/38714170/39135645/smallholders\\_report.pdf/133e8903-0204-4e7d-a780-bca847933f2e](https://www.ifad.org/documents/38714170/39135645/smallholders_report.pdf/133e8903-0204-4e7d-a780-bca847933f2e)

smallholders' agricultural finance remains unmet<sup>42</sup>. Likewise, the financial needs of agricultural small and medium enterprises ("SMEs") are far from being met. In sub-Saharan Africa alone, three in four agricultural SMEs lack sufficient access to finance, with the annual gap between supply and demand estimated at USD 65 billion<sup>43</sup>.

How should food security investments be financed to be both effective and cost-efficient? This topic is particularly relevant given today's pressure on public debt. Official Development Assistance ("ODA") disbursements for agriculture decreased by 9.2 percent from 2017 to 2018 to reach USD 10.2 billion.<sup>44</sup> In 2019 only four African countries met the Malabo Declaration target of spending at least 10 percent of the national budget on agriculture, a decrease from 10 countries in 2017.<sup>45</sup> In many countries, the sustainability of public debt was already questionable prior to the COVID-19 pandemic. The necessary fiscal stimulus, liquidity injections and other social protection measures taken by public authorities to alleviate the effects of the Great Lockdown have further increased governmental indebtedness. In the OECD area, the average level of central government marketable debt-to-GDP ratio is estimated to increase by around 20 percentage points between 2019 and 2021, and to reach over 90 percent of GDP in 2021.<sup>46</sup> Given these constraints on public budgets and the magnitude of the financing needs, many governments cannot afford to fund the investments needed to achieve food security. The fiscal space is or will soon become too limited. In addition, although agriculture has historically seen a high level of government involvement, the track record of public agricultural finance has been rather mixed. Many governments have reduced their support to agriculture State-owned banks to rely more on market forces to provide credit to agri-food systems<sup>47</sup>.

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<sup>42</sup> ISF Advisors and RAF. 2019. Pathways to prosperity. Rural and Agricultural Finance. State of the Sector Report. <https://pathways.rafllearning.org/>

<sup>43</sup> Aceli. 2020. Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa. <https://aceliafrica.org/bridging-the-financing-gap-unlocking-the-impact-potential-of-agricultural-smes-in-africa/>

<sup>44</sup> Duke World Food Policy Center. 2020. The Financing Landscape for Agricultural Development. <https://wfpc.sanford.duke.edu/sites/wfpc.sanford.duke.edu/files/AgDevFinancing-WFPC-Dec2020.pdf>

<sup>45</sup> IFPRI. 2020. Second Biennial Review report highlights urgent need to accelerate progress toward achieving Malabo Declaration goals by 2025. <https://www.ifpri.org/blog/second-biennial-review-report-highlights-urgent-need-accelerate-progress-toward-achieving>

<sup>46</sup> OECD. 2021. Sovereign Borrowing Outlook for OECD Countries. <https://www.oecd.org/daf/fin/public-debt/Sovereign-Borrowing-Outlook-in-OECD-Countries-2021.pdf>

<sup>47</sup> FAO & GTZ. 1998. Agricultural finance revisited.

Can the private sector take up the challenge? It certainly has the firepower to do so. In 2020, the cumulative investments made by 15 food companies alone (the five largest<sup>48</sup> soft commodity merchants<sup>49</sup>, food processing companies<sup>50</sup> and food retailers<sup>51</sup>) exceeded USD 55 billion. This question should be put in the perspective of today's historical period of high liquidity and low-interest rates, with the combined outstanding value of global bond and equity market capitalization amounting to nearly USD 230 trillion in 2020, a 17.3 percent y-o-y increase.<sup>52</sup> The difficulty is to link more of these private resources to the agri-food sector. But are private investors patient enough and do they have the risk appetite to invest at scale into segments like primary agriculture? Moreover, achieving food security, a global public good, may not always coincide with the interests of private firms. Private investors may not be willing to cover the costs associated with negative externalities such as pollution or global warming.

Thus public funding alone is not enough while private capital may not always be directed towards food security. Innovative sources of financing beyond the current market offer need to be developed and expanded. Hence the necessity for the public and private sectors to partner. Blended finance could be a promising solution. While not a financing instrument per se, it is a structuring approach to investment that can take multiple forms and is commonly referred to as "the use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development"<sup>53</sup>. It is based on the distinction between concessional and commercial capital, the former being ready to bear higher risks and/or seek lower returns than the market would accept. The idea is that governments, development banks or donors can attract more commercial capital in development projects by de-risking private investors and/or improving their returns. These incentives should be powerful enough to correct market failures in underserved sectors,

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<sup>48</sup> In revenues terms, excluding companies that do not publicly disclose their financial results (like Cargill or Schwarz Group).

<sup>49</sup> ADM, Wilmar, Bunge, Louis Dreyfus Company and Olam.

<sup>50</sup> Nestle, PepsiCo, JBS, AB Inbev and Tyson Foods.

<sup>51</sup> Walmart, Costco, Kroger, Carrefour and AEON.

<sup>52</sup> SIFMA. 2021. 2021 Capital Markets Fact Book. <https://www.sifma.org/wp-content/uploads/2021/07/CM-Fact-Book-2021-SIFMA.pdf>

<sup>53</sup> Convergence. 2020. The State of Blended Finance 2020. <https://www.convergence.finance/resource/1qEM02yBQxLftPVs4bWmMX/view>

but should not lead to market distortions nor create disproportionate benefits to investors. The importance of deploying public funds to attract more private capital and achieve the Sustainable Development Goals (“SDGs”) was recognized by United Nations member countries at the Third International Conference on Financing for Development in 2015 in Addis Ababa.

This recognition has resulted in the launching of innovative blended vehicles to support – through debt, equity or guarantees – sustainable private sector projects with the potential to generate a positive financial return. In 2019 blended finance mobilized approximately USD 8 billion, across all sectors with agriculture representing about 15 percent of all these blended transactions<sup>54</sup>. Over the last decade, USD 13.4 billion of committed financing would have been mobilized for agriculture and/or SDG 2 Zero Hunger<sup>55</sup>. The application of blended finance principles to agriculture is based on the acknowledgement that commercial investors may be reluctant to venture alone in the sector. This is often due to the perception that agriculture is particularly risky because of a combination of factors like seasonality, price volatility, weather uncertainty or lack of collateral. In East Africa, risk in lending to agricultural SMEs would be twice as high relative to other sectors while operating costs would also be higher<sup>56</sup>. However, a little “push” from the public sector could help to mobilize additional private capital and foster food security, the typical objective of the blended vehicles operating in the agri-food sector.

This is well illustrated by the example of the Madrid-based Huruma Fund, which aims to finance micro-finance institutions and SMEs to increase access to financing for small or excluded farmers in rural areas of Latin America, the Caribbean, sub-Saharan Africa and Asia. Its overall goal is to provide to 100,000 smallholder farmers in developing countries with the financing they need to productively cultivate their land, increase their income and escape poverty<sup>57</sup>. Some EUR 10 million of concessional equity

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<sup>54</sup> Convergence. 2020. The State of Blended Finance 2020. <https://www.convergence.finance/resource/1qEM02yBQxLftPVs4bWmMX/view>

<sup>55</sup> Convergence. 2021. Data Brief: Blended Finance & Agriculture.

<sup>56</sup> Aceli. 2020. Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa. <https://aceliafrica.org/bridging-the-financing-gap-unlocking-the-impact-potential-of-agricultural-smes-in-africa/>

<sup>57</sup> <https://www.cofides.es/en/noticias/notas-de-prensa/huruma-fund-completes-its-final-closing-achieving-120-million-euros-target>

rom the European Commission (EC) coupled with a EUR 20 million long-term loan from Spain's international development cooperation agency were instrumental into raising EUR 90 million from private investors, including high net-worth clients from Caixa Private Bank and EUR 20 million from leading financial services firm Allianz Group. The EC first-loss investment buffers the risk of private investors, while the relatively low interest rate of the Spanish Cooperation loan reduces the fund's overall cost of capital, thus enhancing private investors' net return. Another blended fund, the Africa Agriculture and Trade Investment Fund ("AATIF"), was launched in 2011 in the aftermath of the global food crisis with the objective to invest more liquidity in the African agriculture sector. Here the rationale was that financing medium or large-scale African agribusiness companies and banks active in the agri-food sector would increase domestic food production, facilitate trade, ease local access to finance, strengthen value chains and improve food security. AATIF investors can choose between three different classes of shares, each offering a unique risk/return profile with dividends being paid following a waterfall principle. Public sector investors like the German government and the EC subscribed to shares bearing higher risks and lower return expectations, which has helped to raise private capital. As of June 2021, AATIF reported more than USD 300 million of cumulative invested capital. Technical assistance facilities complete the setting at both Huruma and AATIF. Multilateral organizations and agencies like the Food and Agriculture Organizations of the United Nations can add value in such structures by playing the role of a neutral broker and sharing sectorial knowledge, which is also key to de-risk investments. In another example of blended instrument, Singaporean authorities offer grants<sup>58</sup> to cover part of the additional costs due to the impact-related audits and monitoring associated with the issuance of sustainable bonds. The logic is that private investors should not be penalized by the potential additional transaction costs characterizing sustainable bonds.

Attractive on paper, blended finance has raised concerns about its ability to mobilize additional private capital at scale while delivering enough impact to justify the allocation of public money. Offering concessional capital does not mean that private investors will follow

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<sup>58</sup> <https://www.mas.gov.sg/schemes-and-initiatives/sustainable-bond-grant-scheme>

naturally. Private investors requests need to be properly understood and addressed, especially in terms of investment strategy, legal structure, corporate governance, geographical scope, cost/fees, management and track record. Finding the right set-up and balance can be difficult as it involves different stakeholders with a different culture and different objectives. The potential complexity of blended structures should not translate into additional costs and procedures slowing down the deployment of capital or offsetting the incentives provided by concessional investors. Moreover, blended finance should not be perceived as a silver bullet. It cannot create investment opportunities out of nothing. It can mobilize more private capital towards bankable or near-bankable projects but cannot turn into a substitute for the public sector. For instance, though investments into public services and social protection programs play a key role in food security, they are unlikely to attract commercial investors at scale due to lack of financial returns. It is also highly dependent on the establishment of policies and a business environment conducive to private sector investments. Finally, the impact of blended finance is naturally limited in case of conflicts and in the absence of efficient institutions and governance mechanisms, two important factors for food insecurity.

Nevertheless, this approach to financing could make an important contribution to food security thanks to its natural understanding of private sector needs, entrepreneurial culture and features, combined with the development mandate, long-term horizon and risk appetite of the public sector. This private DNA is important to better meet the requirements of the agri-food sector, which remains essentially driven by the private sector. The next decade will be decisive in understanding whether blended finance can be scaled up. But the current period of low or even negative interest rates represents a great opportunity on that front. Identifying investments with a significant return has become a challenge for private investors. The agribusiness sector can offer such returns, especially in developing countries. Assuming that part of the associated risks can be mitigated and that investors' requests are being met, then blended finance has the potential to attract much more private capital in the fight against food insecurity<sup>59</sup>.

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<sup>59</sup> Acknowledgements: the author of the chapter would like to acknowledge contributions from Atisha Kumar (FAO), Nuno Santos (FAO) and Tancrède Voituriez (IDDRI).

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# Conclusion

2021 was marked by high volatility in world food prices. FAO's official report for November 2021, Food Outlook, indicates that since late 2020, food prices have sharply increased<sup>60</sup>. There is no doubt that one of the reasons behind this is COVID-19 and the breakdown of logistics chains brought about by lockdowns and the pandemic. But, as stressed in the report, climate change can lock in this price growth, at least in the medium term. By the same token, climate change is likely to increase the cost of resources (primarily water and energy) for crop and livestock farming, and food production.

There is an increasingly popular point of view that the food security problem should be considered in the food-water-energy context rather than in isolation<sup>61</sup>. A shortage and/or price increase of one resource causes the prices of the others to go up. If the pace of climate change is not rapidly curtailed (for which, in our view, there is little hope, despite all the political initiatives), water resources will soon become limited and energy more costly, particularly during the transition to green energy. All of this means that food prices in the world will continue to grow.

It is hardly worth hoping for a reduction of global food production, for, as we see it, even the problem of hyper-consumption in the developed world will not be solved without a total reversal of ethical attitudes. The problem of the high cost of water and energy resources will only worsen against the background of persisting or expanding food production for the growing global population.

As mentioned above, the implementation of a number of absolutely essential measures intended to halt climate change (restricting methane emissions, restricting or discontinuing the use of coal and wood for fuel) may

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<sup>60</sup> Food Outlook. Biennial Report on Global Food Markets. November 2021. Rome: FAO. 2021. P. 96.

<sup>61</sup> See, e.g.: Gao J., Xu X., Gao G.-Y., Ermoliev Y., Ermolieva T., Rovenskaya E. Strategic decision-support modeling for robust management of the food–energy–water nexus under uncertainty. Journal of Cleaner Production. Vol. 292. 2021. 10.1016/j.jclepro.2021.125995.



have a negative effect on food security. In a number of scenarios, the cause of climate change and the cause of global food security campaign are at cross purposes.

Yet another aspect of this matter has to do with market forces. The growth of food price is closely related not only to objective climate factors but also the policies of corporations as well as food producers and distributors. It is clear that the natural objective of any corporation is to maximise profits and we can hardly demand anything different in a market environment (although the ESG standards are seeking to do exactly that). The problem is of another kind. Food prices, both wholesale and retail, are often subject to speculative pressure, and occasionally there is even collusion by cartels. Given the risks associated with food production, the danger of additional upward market pressure on prices may become even more pronounced. There is an undeniable contradiction between the need to maintain the stability of the natural ecosystem and what is called a “market ecosystem”<sup>62</sup>.

Does this mean that a global transition to non-market food distribution mechanisms will be needed as the food security problem grows worse? Or at least distribution of basic foods? Or does this mean that the current government antimonopoly regulation policies and occasionally the establishment of food price bands will fall short of the mark? This is quite possible. But specific problems may arise here, problems related, among other things, to corrupted nature of government decision-making and the danger of lobbyist collusion between governments and certain corporate bidders for public contracts. Besides, low, non-market food prices mean, as a rule, that agricultural workers get less pay. In the light of the above, the spectre of Hobbes’ Leviathan is materialising before our own eyes, the monstrous state which societies have sought to overcome during the past century, at least societies in the developed world. “Food dictatorship” and “food totalitarianism” are unlikely to be better than any other form of totalitarianism.

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<sup>62</sup> See, e.g.: Lianos I., Ivanov A., Davis D. (eds). *Global Food Value Chains and Competition Law*. Cambridge: Cambridge University Press. 2022. See also the video presentation of this book: <https://www.bricscompetition.org/ru/events/31> .



The next problem is combining public and international regulation of food production and trading. High food prices are energising protectionism designed to defend domestic markets. In 2021, a number of grain exporting countries introduced special export duties to constrain grain exports, leave the maximum possible amount of grain for internal consumption, and prevent excessive price increases at home. On the global scale, these steps stimulated even greater price hikes and increased food instability. Is an individual government's food trade protectionism acceptable if it undermines the stability of the increasingly strained global market? The outcry for sanctions against this state will likely arise spontaneously.

The above violates a state's sovereignty in its absolute Westphalian sense. But the perception of food as one of the key global public goods is only growing and sooner or later it will achieve political and legal formalisation at the global level. In this case, a government will lose control over food produced in its territory. Its confiscation and distribution among poor countries will be based on decisions approved by international organisations. This scenario is not out of the realm of possibility, given the immense challenges posed by climate change. While it is bringing about a radical form of the much-debated global solidarity, Hobbes' Leviathan and food totalitarianism are threatening to go global.

In 2020, the Nobel Peace Prize went to the UN World Food Programme. Because of the COVID-19 pandemic, the WFP Executive Director, David Beasley, was able to deliver his Nobel lecture only in December 2021. He said in no uncertain terms that climate change was one of the main causes of the looming threat of famine in the world<sup>63</sup>. The formula he offered for avoiding this fate was very simple, if essentially utopian: rich countries, corporations and billionaires will have to share. But will they?

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<sup>63</sup> <https://www.nobelprize.org/prizes/peace/2020/wfp/lecture/>

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