



## **Main Model United Nations Conference**

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### **Challenges of a Changing Global Order – Responding to Emerging Conflicts**

A blue-tinted background image showing a tractor in a field on the right and two people in the foreground on the left, one appearing to be in a military or official uniform. The field is filled with tall grass or crops.

# **BACKGROUND GUIDE**

## **ECONOMIC AND SOCIAL COUNCIL**

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*Main Model United Nations Conference 2022*

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# 1. Introduction

Honourable Delegates,

In the name of the entire team, we welcome you all warmly to the 17th Edition of the MainMUN conference. We, Julian Beck and Dana Kordovanikova, will be your Chairs for the upcoming days and therefore, we would like to use the opportunity to introduce ourselves.

Hello, my name is Julian and my MUN story began in 2018 when I first attended MainMUN as a delegate to prepare myself for the NMUN conference in New York. Since then, I became part of the great MainMUN team and chaired the United Nations Development Programme (UNDP) committee and the International Maritime Organization (IMO). At my second time at NMUN, I represented Russia in the Security Council which I also has the pleasure to chair at last year's MainMUN. I have recently finished the BSc programme at the Frankfurt School of Finance and Management with focus on Management, Philosophy and Economics. Once again, I am looking forward to work with you all and enjoy the conference.

Hello, my name is Dana, and I am excited to chair my first MainMUN conference. I am currently pursuing MSc. In International Economics and Economic Policy at Goethe University in Frankfurt. I am looking forward to having fruitful debate with you in March.

The topics to discuss at the MainMUN 2022 ECOSOC will be:

- **Finding Ways towards a Sustainable and Healthy Food Production**
- **Sustaining Economic Opportunities in Emerging Markets and Developing Countries**

The topics will be presented on the following pages, and we will be able to get into the topics with some optional guiding questions.

We at MainMUN do not require position papers but we strongly advise to write them. Our own experience has shown that delegates who take the time to write position papers tend to be more prepared than those who do not. If you write a position paper and hand it in over the myMUN platform and before the deadline, you will also receive feedback from us which provides a unique opportunity to feel confident in your preparation.

Be aware that this Background Guide provides you with just basic information on the topics and you are required to further inform yourself on the topics and your country's position (on the topics as well as your country's policies as whole). As the system of an interconnected crisis can always take sharp turns, you need to be well prepared to represent your state in a diplomatic manner and you should also be prepared on the topics of the other committees if you are your country's head of delegation, as your fellow country delegation members might need feedback or support from you.

Delegates should keep in mind that while we take diplomatic conduct very serious at MainMUN 2021, the conference is also a simulation. Please be always courteous to your fellow delegates, even if you do not agree with their country's policies and try to also interact with delegates of member states

which are important to your own, even if they are not represented by your friends. MUNs are a great place to form new friendships, which we have both experienced in the past, and we hope you get to experience this as well. Do not forget to lobby for your ideas in the committee and outside, as our experience shows that the best deals are made over food and coffee.

The MainMUN 2022 Economic and Social Council (ECOSOC) will observe the standard MainMUN Rules of Procedure for the committee work. The delegates who are their country's head of delegation will also be able to write directives and get involved in the crisis. Therefore, they will need to look at the crisis handbook as well. You will be provided those rules separately and will also be able to download them from our website.

If you have any remaining questions regarding the committee, feel free to contact us via the myMUN committee chat or later in the process via Ryver.

We are excited to meet you all and we look forward to very interesting and fruitful debates.

With best regards,

Julian Beck & Dana Kordovanikova

## **2. The United Nations Economic and Social Council**

The United Nations Economic and Social Council (ECOSOC) is one of the six main organs of the United Nations and was established in 1946 based on Article 7 of the UN Charter. With its seat in New York City, the ECOSOC consists of 54 Member States since 1971 and is concerned with different tasks of the economic and social areas. Moreover, the ECOSOC is the principal body for coordination, policy review, policy dialogue and recommendations on economic, social, environmental issues and for implementation of the internationally agreed development goals.<sup>1</sup> The ECOSOC has its legitimacy and its competencies based on Article 61-72 of the UN Charter and engages the realization of research on international affairs regarding to the areas of economy, welfare, culture, education, and health. It makes reports of those tasks and can craft recommendations to increase the respect of human rights and their implementation. The ECOSOC can also convoke international conferences.

The council is comprised of 14 African states, 11 Asian states, 6 Eastern European states, 10 Latin American and Caribbean states and a group of 13 states which represent the Western European and other states. These Member States are selected in elections to ensure rotation of one third of the council every year. The ECOSOC can also invite a Member State of the UN to its sessions and declare it as an observer if this Member State has a special interest in a concerned topic of the session. Therefore, the ECOSOC deals with a wide variety of stakeholders, policymakers, parliamentarians, academics, major groups, business sector representatives and over 2.300 registered Non-Governmental Organizations (NGOs). A large variety of special commissions are subsidiary bodies of

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<sup>1</sup> <https://undocs.org/en/A/RES/75/290A>

the ECOSOC. The functional commissions are separated by their respective topic, while there are also commissions by region, and some commissions are composed of governmental experts. The most important responsibilities, which the ECOSOC is concerned with, are promoting sustainable development, advancing policy integration, providing coordination while building partnerships, guiding operational activities, and raising awareness on emerging issues.<sup>2</sup>



Source: <https://africaglobe.net/le-conseil-economique-et-social-de-lonu-fete-ses-75-ans/>

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<sup>2</sup> <https://www.humanrights.ch/de/ipf/grundlagen/durchsetzungsmechanismen/uno/ecosoc/>

## 3. Topic A: Finding Ways Towards a Sustainable and Healthy Food Production

### 3.1. Introduction

The way how food is produced in a region or country has a tremendous influence on societies, culture, and the economy. Throughout the history of humanity, continuous improvement of agriculture and food processing was the decisive factor for the global population to grow and diversified economies to emerge, with a declining share of the population needed to produce food and a decline in prices in relation to income. In the effect, a growing global wealth led to a steady increase of demand for food, especially with regards to meat and dairy products which require extensive inputs of land and fodder while emitting high levels of greenhouse gases compared to plant-based foods. With its current mode of operation, global food production is destroying its foundation by degrading soils and steadily reducing biodiversity. The dimensions of the challenge to move towards a sustainable food production is best expressed in numbers. By 2019, food production was responsible for 26%<sup>3</sup> of the global greenhouse gas emissions.<sup>4</sup> While around 31%<sup>5</sup> of the food produced is lost either through losses between harvest and retail or wasted on the consumers side, there are strong global differences in the structure of food production mostly expressed on the share of people dependent on agriculture for a living, the degree of industrialization, and types of food produced (see chapter *Dependencies on Food Production*). There is an urgent need for action in this field since time is moving against policymakers with the challenge of demography. By 2050, the ECOSOC's report *World Population Prospects: The 2017 Revision*<sup>6</sup> estimates the world population to grow up to 9.8 billion individuals by 2050, an increase of nearly 14% from today.<sup>7</sup>

With the *2030 Agenda Sustainable Development Goals (SDGs)*<sup>8 9</sup>, ambitious targets were set by the UN which either directly or indirectly approaches the call for a shift towards sustainability in food production. Especially we can highlight *SDG 2: Zero Hunger*, calling to “*End hunger, achieve food security and promote sustainable agriculture*”; *SDG 12 “Ensure sustainable consumption and production patterns*”; as well as the sustainable use and restoration of maritime and terrestrial resources manifested in *SDG 14 Life Below Water* and *SDG 15 Life on Land*.<sup>10</sup>

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<sup>3</sup><https://ourworldindata.org/food-ghg-emissions>

<sup>4</sup> This number may vary depending on source and measurement, but usually lies in the range of 20-30%

<sup>5</sup> <https://www.un.org/en/observances/end-food-waste-day>

<sup>6</sup> [https://www.un.org/en/development/desa/population/events/pdf/other/21/21June\\_FINAL%20PRESS%20RELEASE\\_WPP17.pdf](https://www.un.org/en/development/desa/population/events/pdf/other/21/21June_FINAL%20PRESS%20RELEASE_WPP17.pdf)

<sup>7</sup> World Population in Jan 2022 was 7.9 bn <https://www.worldometers.info/world-population/>

<sup>8</sup> <https://sdgs.un.org/goals>

<sup>9</sup> [https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A\\_R\\_ES\\_70\\_1\\_E.pdf](https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_R_ES_70_1_E.pdf)

<sup>10</sup> Ibid.

Delegates might ask themselves why we are simulating debate on this topic in the ECOSOC committee when there is the *UN Food and Agricultural Organization (FAO)*. The reason lies within the mandates and hierarchy of these UN bodies and the scope of the topic. While the FAO is a specialized agency of the ECOSOC and its main objective lies in ending hunger worldwide<sup>11</sup>, the ECOSOC allows to discuss and take actions more widely. Since the topic is highly interconnected with economic and social aspects, we consider this committee to be an appropriate forum. Nevertheless, the FAO contributes valuable and relevant insights for individual research such as its annual report series *The State of Food and Agriculture in the World*.<sup>12</sup>

This Background Guide (BGG) aims to give delegates a starting point for their individual research by showing the scope of this extensive but utmost important topic, give information on actions taken so far and relevant documents and examples for approaches to make food production more sustainable.

## **3.2. Sustainability Aspects**

### **3.2.1. Environmental Impact**

#### Land degradation

One of the most problematic developments caused by modern food production is its negative effect on the fertility of soils, excessive and unsustainable use of water resources, and in consequence the loss of biodiversity.<sup>13</sup> The estimated effects are dramatic with global crop yields estimated to decline by 10% by 2050, in some regions to decrease even by 50%. The effect on food prices is estimated at an increase of 30%<sup>14</sup>, a figure which demonstrates the severity of the issue. As of 2015, about a quarter of the earth's land is classified as highly degraded, 36% classified to be stable or slightly degraded, whilst only 10% considered to be recovering. Land degradation is a problem which is in its intensity unequally distributed and local rates can be far higher. The most affected regions are the west coast of the Americas, southern Mediterranean, Africa and Asia except for tropic regions.<sup>15</sup> With this distribution, especially those countries are most affected which have a low average income but have the highest expected growth in population. With the current trend to continue, it will become increasingly difficult to provide food to these future generations. According to the FAO's *State of the World's Land and Water Resources for Food and Agriculture (SOLAW)* report, there are three practices which predominantly contribute to land degradation, being the excessive and

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<sup>11</sup> <https://www.fao.org/about/en/>

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

<sup>13</sup> <https://news.un.org/en/story/2011/11/396332-land-degradation-and-water-shortages-threaten-global-food-production-un>

<sup>14</sup> [https://catalogue.unccd.int/1713\\_LDN\\_SAFS\\_FSS\\_Brochure\\_FINAL.pdf](https://catalogue.unccd.int/1713_LDN_SAFS_FSS_Brochure_FINAL.pdf)

<sup>15</sup> <https://news.un.org/en/story/2011/11/396332-land-degradation-and-water-shortages-threaten-global-food-production-un>

unsustainable use of (ground-)water for irrigation, the improper use of fertilizers and pesticides, and the continuous destruction of forests to gather land for agriculture.<sup>16</sup>

The technological advancements in irrigation have pushed agricultural production and enabled the provision of water to crops when needed, so that 40% of the global increase in food production deemed from irrigated cultivation. Also, agriculture is accountable for 70% of freshwater withdrawn.<sup>17</sup> Despite the positive effects of irrigation on crop yields and food security, the exhaustion of water reservoirs intervenes into the regenerative water cycle and the use of pesticides and fertilizers can pollute both surface and groundwater permanently. In combination with the effects of climate change on reliability of rainfall, water scarcity becomes an ever-strengthening constraint on agriculture, further reducing food security and resulting in socio-economic tensions where small-scale farming is a major source of income.<sup>18</sup> Consequently, there is a strong competition for the reducing fertile land and already scarce water supply, making poor regions with food production characterized by small-scale farming most vulnerable to land degradation and also a contributing factor due to the lack of access to sustainable soil management practices, technology and education. Weak governmental institutions and the corresponding absence of regulation or a lack of their enforcement make effective policies difficult to implement, even though the problem has been recognized.<sup>19</sup>

On the UN level, the *SDG 15 "Life on Land"* specifically addresses the process of land degradation with the formulation of its goal "*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*" and has defined the target to combat desertification and to strive for *Land Degradation Neutrality (LND)* by 2030.<sup>20</sup> Even before the *2030 Agenda* was established, the *United Nations Convention to Combat Desertification (UNCCD)* was introduced in 1994 as a legally binding agreement signed by 114<sup>21</sup> countries with the target to achieve LND and has so far recognized over 840 response actions adopted by 86 countries.<sup>22</sup>

### Biodiversity Loss

Today's food production results in severe losses of biodiversity through the methods of production, as by the concentration on few basic food commodities. About 75% of the global food consumed comes from rice, wheat, maize, soybeans, and potatoes. While this specialization enables a

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<sup>16</sup> <https://www.fao.org/3/i1688e/i1688e.pdf>

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> <https://w3.unece.org/SDG/en/Indicator?id=66>

<sup>21</sup> [https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg\\_no=XXVII-10&chapter=27&clang=\\_en#1](https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-10&chapter=27&clang=_en#1)

<sup>22</sup> <https://knowledge.unccd.int/publications/land-degradation-neutrality-sustainable-agriculture-and-food-security>

production on large scales, farming of alternative and local plants continues to diminish, reducing biodiversity and effecting consumer's health since a balanced diet is no longer accessible or too expensive. Furthermore, cultural heritage in which diverse diets and foods play an important role is lost. Rediscovering crops can reestablish biodiversity and deliver long term benefits in health and production efficiency since regional crops are better suited for their area of origin and need less inputs to grow.<sup>23</sup>

The damages caused by agriculture on the biodiversity prevalent in nature are severe and permanent with it being a threat to 86% of species which are at risk of extinction.<sup>24</sup> Both large- and small-scale agriculture relies on pesticides and fertilizers, which are an imminent threat to biodiversity. Most pesticides do not specifically target the pests they are used against but kill or poison insects, microbes, and animals in the food chain. An example is the bee which is the most famous pollinators which are an essential part of food production, with 35% of total crop production be at least partially dependent on their service and 75% of crops which are farmed being partially dependent. Without pollinators, global production would decline by 5-10%, however at the cost of biodiversity.<sup>25</sup> The unsustainable use of fertilizers is harmful to the applied soil which becomes oversaturated with nutrients, leaking them into water and pollute the air on a wide scale. The same holds for large herds of livestock held on a limited area of land which becomes oversaturated with dung. Here, the emission of greenhouse gases becomes another environmental burden (see Climate Impact). When nutrients enter waterways, they foster the growth of algae which bind oxygen, suffocating marine life beneath.<sup>26</sup> Transforming farming techniques can be a solution in sparing and regeneration of biodiversity. Instead of planting large monocultures, a rotation of crops and holding smaller, but more diverse herds of animals can safeguard biodiversity. Additionally, creating untouched habitats for insects and wildlife can compensate for agricultural land-use. However, there is a negative correlation between intensified farming and biodiversity, with organic agriculture yielding up to 25% less than its conventional input-intensive counterpart.<sup>27</sup>

### **3.2.2. Climate Impact**

Food production is responsible for 26% of the global greenhouse gas (GHG) emissions which contribute to climate change.<sup>28</sup> As Figure 1 shows, of these GHGs 82% are directly emitted from agriculture and animal farming, while 18% are emitted beyond the farms alongside the supply chain. Driving factors which stand out are the evaporation of methane from livestock, especially from beef

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<sup>23</sup> <https://www.un.org/en/ecosoc/integration/pdf/foodandagricultureorganization.pdf>

<sup>24</sup> <https://www.unep.org/news-and-stories/press-release/our-global-food-system-primary-driver-biodiversity-loss>

<sup>25</sup> <https://ourworldindata.org/pollinator-dependence>

<sup>26</sup> [https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al\\_0.pdf](https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al_0.pdf)

<sup>27</sup> Ibid.

<sup>28</sup> <https://ourworldindata.org/food-ghg-emissions>

herds, the use of fossil fuels for machines, and the CO<sup>2</sup> emission from land use. The latter is the result of land degradation and deforestation which reduces biomass and the soil's ability to store carbon which is then evaporated.<sup>29</sup> Figure 2 shows that animal farming is leading the ranking of GHG emissions in relation to 1 kilogram of product. In comparison to wheat, the emissions from beef production are over 40 times higher. If 17% of the global food produced is wasted beyond production, around 4.4% of global GHG are emitted for products that never get eaten. Besides, food waste is organic matter which further evaporates GHG during decomposition.<sup>30</sup>

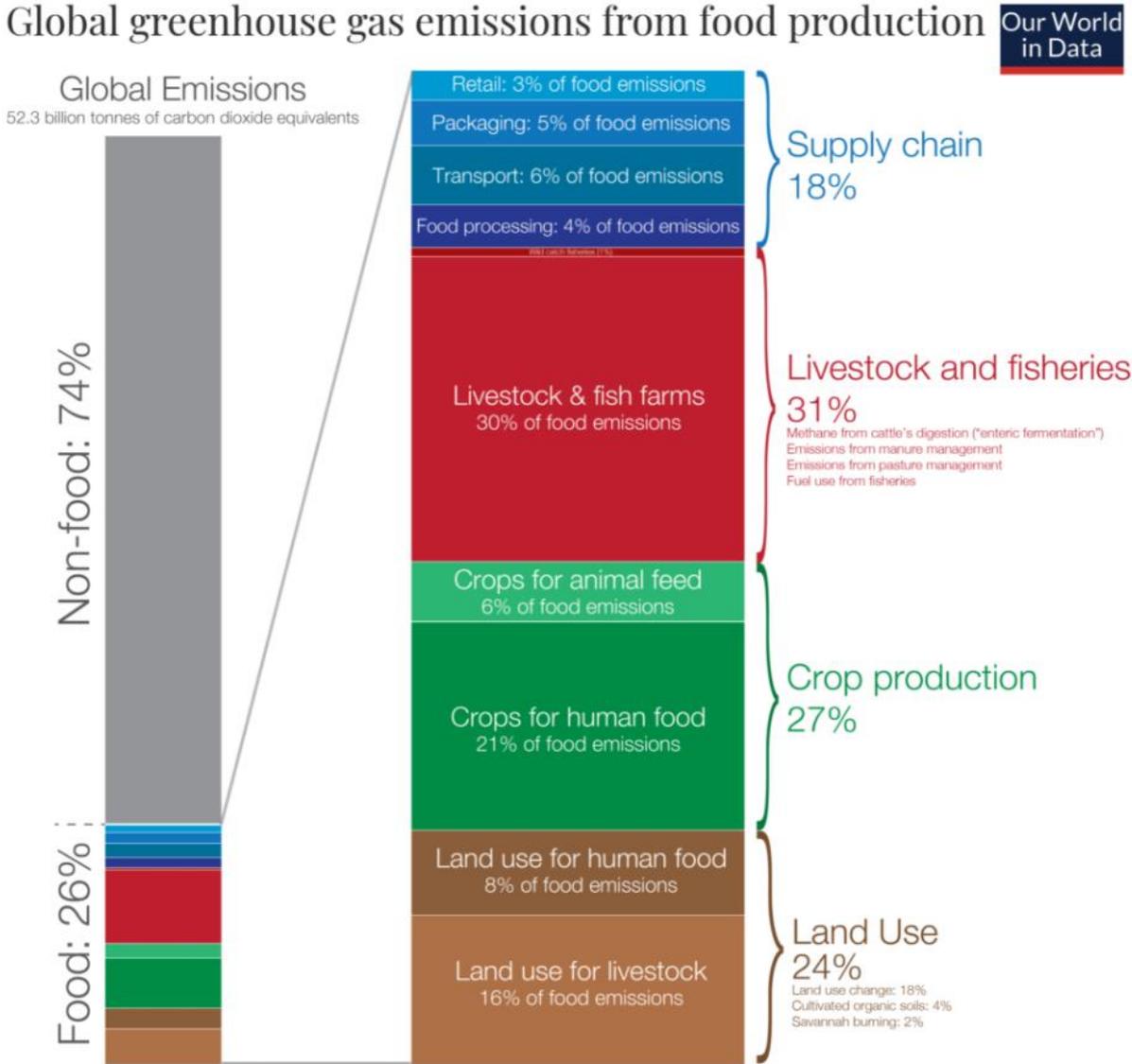


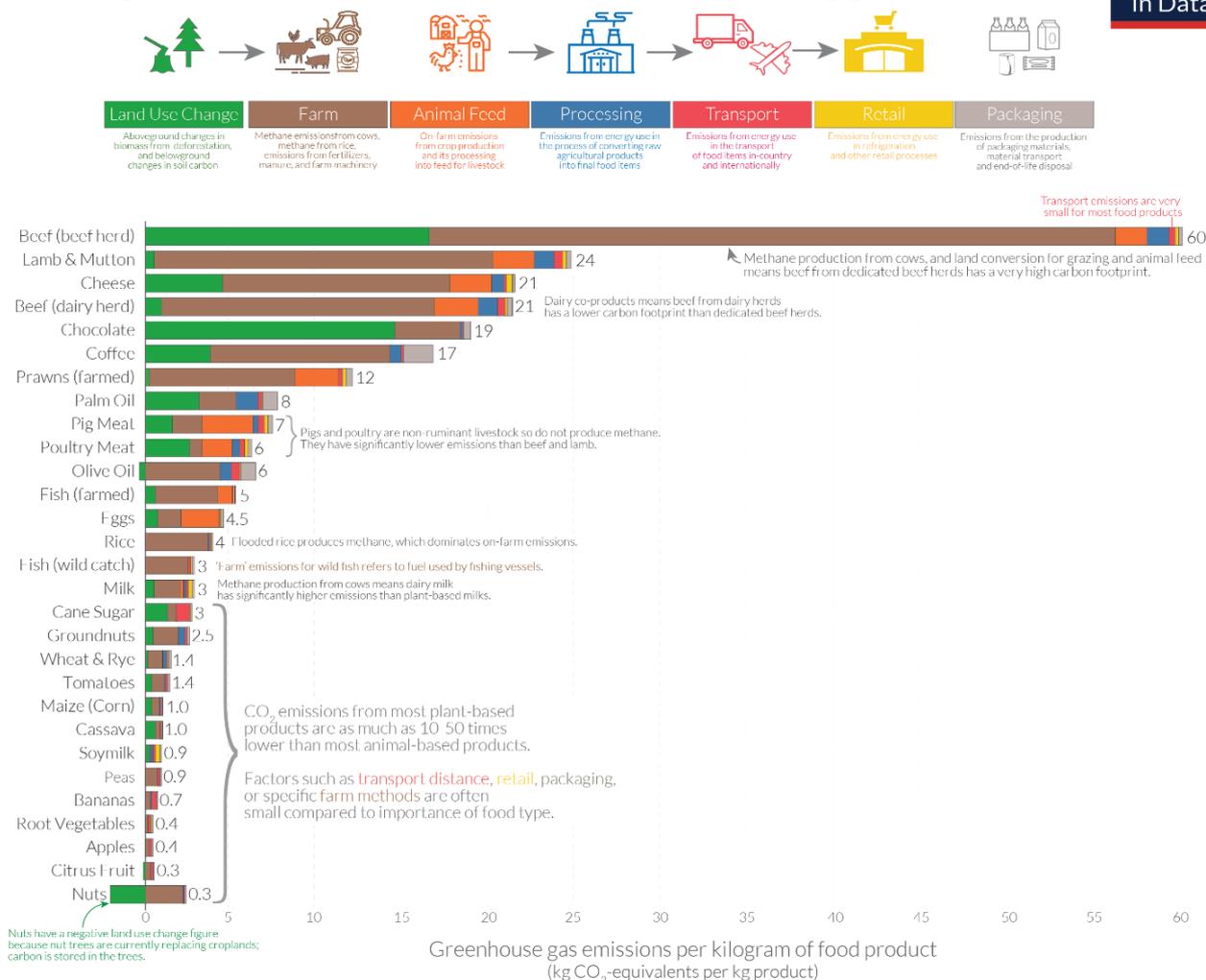
Figure 1: Global greenhouse gas emissions from food production<sup>31</sup>

<sup>29</sup> <https://ourworldindata.org/food-choice-vs-eating-local>

<sup>30</sup> <https://www.un.org/en/ecosoc/integration/pdf/foodandagricultureorganization.pdf>

<sup>31</sup> <https://ourworldindata.org/food-choice-vs-eating-local>

# Food: greenhouse gas emissions across the supply chain



Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries. Data source: Poore and Nemecek (2018). Reducing food's environmental impacts through producers and consumers. Science. Images sourced from the Noun Project. OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

Figure 2: Greenhouse gas emissions across the supply chain<sup>32</sup>

## 3.3. Economic and Social Implications

### 3.3.1. Dependencies on Food Production

To understand the field of action for policy makers in food production, it is necessary to take a view on the economic dependencies of people working in agriculture for their income and living. The share of the population working in farming varies globally depending on the stages of technological development and stands in correlation with general economic performance. While Western European countries, Australia, and North America have a share below 5% of people working in agriculture, involvement in Asia circles usually around 25-40%. Within Central and Sub-Saharan Africa, the shares circle around 60%.<sup>33</sup> Of the estimated 1.2 bn people living under extreme poverty, 75% are living in rural areas and primarily depend on agriculture for a living while they are usually

<sup>32</sup> <https://ourworldindata.org/food-choice-vs-eating-local>

<sup>33</sup> <https://ourworldindata.org/employment-in-agriculture>

producing in small scale farms which produce over 70% of the world's food. Hotspots here are Africa and South-Asia where small scale farms, herders, and fishers are essential for food security but struggle for survival themselves, hampering both supply and demand.<sup>34</sup> This contribution will have to increase as 85% of the expected 2050 population will live in today's developing countries. Another issue here is that the rural youth is moving towards cities with the hope to escape rural poverty and find alternative jobs to farming. This trend affects both developed and developing countries, leading to the average age among farmers in the US and Africa to be around 60, even though 60% of the population in Africa is below 24 years old.<sup>35</sup> This development threatens food security and eventually leads to a loss of knowledge especially in areas where education on farming is passed on over generations which is usually the case in developing countries. Urbanization is a trend that further increases the gap between rural and urban populations which is projected to make of 70% of the humans living on earth by 2050. Rural agriculture will need to boost productivity to supply cities which tend to demand more meat and dairy products. High levels of youth unemployment and rising food prices pose the risk of social and political instability.<sup>36</sup>

The share of agriculture on the global gross domestic product (GDP) in 2018 was 4% and in some developing countries may account for over 25% of national GDP.<sup>37</sup> Food production is by itself contributing to economic growth, but food security is also a prerequisite for economic development. Technology and productivity can only improve if the food supply is sufficient and affordable as it allows humans to concentrate on education and other economic activity.

### **3.3.2. The Global Food Market**

Today's food supply chains are increasingly globalized. In 2021, an all-time high of agricultural and food products with a net worth of over 1.75 trillion USD were imported. Developed regions account for about 60% of these imports with an increase of 11% of demand compared to 2020. Developing nations account for 40% of the global import bill with a record growth in imports of 20%. However, these are absolute values and since prices for food have significantly risen, this does not mean that more food was delivered to countries vulnerable to food shortages.<sup>38</sup> Since costs of input for agriculture are closely linked to energy prices which are constantly on the rise, food is becoming more expensive, most affecting those consumers whose share of income spent on food is the highest.<sup>39</sup> Another factor for the rise of food prices is the trend to switch production of food towards growing crops for biofuels which are an attractive alternative for farmers and towards the use of expensive fossil fuels, which is why production is heavily subsidized. In response to rising and more

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<sup>34</sup> <https://www.fao.org/policy-support/policy-themes/sustainable-agribusiness-food-value-chains/en/>

<sup>35</sup> <https://www.un.org/en/ecosoc/integration/pdf/foodandagricultureorganization.pdf>

<sup>36</sup> Ibid.

<sup>37</sup> <https://www.worldbank.org/en/topic/agriculture/overview#1>

<sup>38</sup> <https://www.fao.org/3/cb7491en/cb7491en.pdf>

<sup>39</sup> Ibid.

volatile food prices, riots emerged in developing countries in 2007 and 2008.<sup>40</sup> Global changes in demand, especially for meat and dairy products further cause a reduction of supply for plant based human food, since more land is being used to grow fodder for livestock.

Furthermore, the global food supply and consumption is highly unsustainable and inefficient when it comes to food being wasted. There are two main causes which contribute to food being produced but not eaten, namely food loss and food waste. Food loss is the quantity of food which is either discarded, damaged, or disposed before it enters the supply chain. Around 14% of food produced is lost globally which occurs mainly in developing countries.<sup>41</sup> Reasons for this are technical limitations in harvesting techniques, lack of storage and cooling capacities in combination with warm climate, as well as long periods until products enter the supply chain. Investments and technological improvements are needed to mitigate food loss and reduce the wasting of natural resources. Food waste on the other hand is a problem mostly arising through increased wealth in developed countries where multiple practices contribute to the 17% of perfectly edible food being wasted. For example, fresh products are standardized and natural deviations in size, shape or color are sorted out already within the supply chain. Products with expired “Best-before” labels are often wasted by both retailers and consumers, even though the products can still be eaten. Finally, large amounts of food are wasted by households and restaurants.<sup>42</sup> Given the extensive natural and energy resources invested into farming and the supply chain, food waste is the biggest inefficiency of global food systems. This may not hold in terms of revenues generated by the food industry, but certainly from an ecological perspective.

### 3.3.3. Food Supply and Health

What people eat is the most influential factor for their health. A nutritious and balanced diet is the prerequisite for a healthy development and decisive for the quality of living. Humans require a diverse set of nutrients, vitamins, and minerals, which is why a simple calorie-sufficient diet is insufficient to sustain health. However, with the current food supply situation, a healthy diet is costly and up to three billion people cannot afford this. The problem affects the entire world.<sup>43</sup> Furthermore, an estimated number of 720-811 million people cannot afford or access enough food to meet basic calorie needs and are exposed to hunger.<sup>44</sup> Within its report *The State of Food Security and Nutrition in the World 2021*, the FAO states that progress towards the SDG 2 calling for “ending hunger, food insecurity and all forms of malnutrition by 2030” and associated targets is insufficient and that there is an urgent need for action. Another problem related to unhealthy diets is the rise of overweight and obesity which can be observed worldwide, putting pressure on healthcare systems due to an increased risk of cardiovascular diseases and diabetes. As of 2016, adult obesity reached a

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<sup>40</sup> <https://www.un.org/en/ecosoc/integration/pdf/foodandagricultureorganization.pdf>

<sup>41</sup> <https://www.un.org/en/observances/end-food-waste-day>

<sup>42</sup> Ibid.

<sup>43</sup> <https://ourworldindata.org/diet-affordability>

<sup>44</sup> <https://www.fao.org/3/cb4474en/cb4474en.pdf>

global level of 13.1% with global hotspots in Northern America, Western Asia, Australia, and New Zealand with shares around 30% or more. Childhood overweight is also on the rise, with a global average of 5.7% in 2020, but with regional differences and a peak in Northern and Southern Africa of above 12%. According to the FAO, reasons for this is the greater access to highly processed food containing high levels of sugar, salt, and unhealthy fats, with distribution pushed by industry-led marketing campaigns.<sup>45</sup>

### **3.3.4. Effects of the Covid-19 Pandemic**

Even though the full effects of the ongoing Covid-19 pandemic are not yet clear, setbacks in the efforts to achieve SDGs have already been realized. Measures to contain the pandemic have disrupted the global food market and supply chains, further contributing to an increase of food prices, especially for imported products. The global recession threatens food security and may, according to a speech by FAO Director General Qu Dongyu, lead to a loss of 451 million formal jobs in food systems. Additionally, about 3bn people are informally employed in food related services who “produce, harvest, sort, slaughter, move, market and serve food”, of which nearly a billion are at risk to lose their income. This further increased the problem of malnutrition.<sup>46</sup> Another example is the absence of foreign seasonal harvest workers, leading to crops to rot on the fields and being lost. Therefore, food loss also becomes an issue in developed countries. To mitigate the economic downturn, governments are expected to invest heavily to support economic recovery which provides policymakers with the chance to use means for a so called “green recovery” putting both emphasis to public and planetary health.<sup>47</sup> The pandemic has shown the vulnerability of food production towards unprecedented global crisis and its transformation needs to build resilience against these threats which will continue to occur and will likely accumulate in the future.

The Covid-19 virus can be considered a zoonotic disease which has originated in wild or farmed animals and is yet the most severe among others which have reached epidemic or pandemic levels in the latest decades. Their occurrence has increased due to the contacts of wild and farmed animals due to both the expansion of agriculture into natural ecosystems and the disruption of ecosystems from climate change which leads to a new mix of animals who then exchange pests, parasites, and pathogens.<sup>48</sup> Further disruption of ecosystems for the sake of food production will accelerate this trend and the current pandemic demonstrates the devastating consequences of today’s agricultural practices.

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<sup>45</sup> Ibid.

<sup>46</sup> <https://www.fao.org/director-general/speeches/detail/en/c/1296725/>

<sup>47</sup> [https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al\\_0.pdf](https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al_0.pdf)

<sup>48</sup> Ibid.

### 3.4. UN Resolutions addressing Food Production

#### [A/RES/76/222](#)

This resolution titled with *70/233 Agriculture development, food security and nutrition*<sup>49</sup> is the latest iteration of resolutions firming under the same title and was adopted recently on December 17<sup>th</sup>, 2021. It calls on member states to address the impacts of the Covid 19 pandemic while still committing to achieve the Agenda 2030 SDGs by implementing the voluntary commitments to the *UN Food Systems Summit* (FSS) by promoting sustainable production, improving resilience against effects of climate change, and keep multilateral supply chains functioning. Further, it calls for cooperation and sharing in the field of sustainable science, technology, innovation, and traditional knowledge and make these available to small-scale farms. The resolution also calls for strengthening the development impact of the Consortium of International Agricultural Research Centers (CGIAR) and encourages technology transfer.

#### [A/RES/76/200](#)

Like the resolution described above, the UN General Assembly (GA) adopted *A/RES/76/200* under the title *76/200 Agricultural technology for sustainable development*<sup>50</sup> on December 17<sup>th</sup>, 2021, which is also the newest iteration of a series of resolutions under the same name. It urges member states to improve the development of sustainable agricultural technologies for pre- and post-harvesting and their transfer, especially to least developed countries. The resolution highlights that small- and medium scale farmers benefit most from training and education. It expresses concerns that technological developments bypass ageing farmers due to a lack of financial means and skills, for which training, financing and education needs to become accessible, also to the young generation. Governments are encouraged to improve weather forecasting infrastructure and support information streams to farmers. The resolution sees an opportunity in the means set free for recovery of the Covid 19 pandemic to promote sustainability and increase the resilience of food systems. Mechanization and digitalization are seen as a chance to increase efficiency and productivity in agriculture, while resulting higher paying jobs make rural areas more attractive to the youth. Another main point is the call to strengthen urban-rural linkages in terms of planning and transportation to improve supply chains and reduce food loss. The document also highlights the opportunities of urban farming with techniques like indoor- and vertical farming, improving supply chain sustainability and food security.

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<sup>49</sup> <https://undocs.org/en/A/RES/76/222>

<sup>50</sup> <https://undocs.org/en/A/RES/76/200>

### 3.5. FSS and the Concept of Food Systems

The UN Food Systems Summit (FSS) is a convention under the patronage of UN Secretary General António Guterres which started in 2021 aiming to bring together governmental, private, and individual contributions towards achieving the 2030 Agenda SDGs by creating more sustainable, healthier, and equitable food systems. The term “food system” is an integrative concept which considers the interconnection of food production, transport, manufacturing, retailing, consumption, loss and wasting. Market functions like prices, availability and access are also considered as factors influencing food security. In practice, the concept allows to be scaled from the global to the regional and micro level. Since food systems are by their nature dynamically changing, both supply and value chains are viewed in one model, giving researchers and policymakers a better basis to assess the effects of measures holistically.<sup>51</sup> Figure 3 delivers a high level conceptual framework provided by the Scientific Research Group to the FSS (ScGroup).

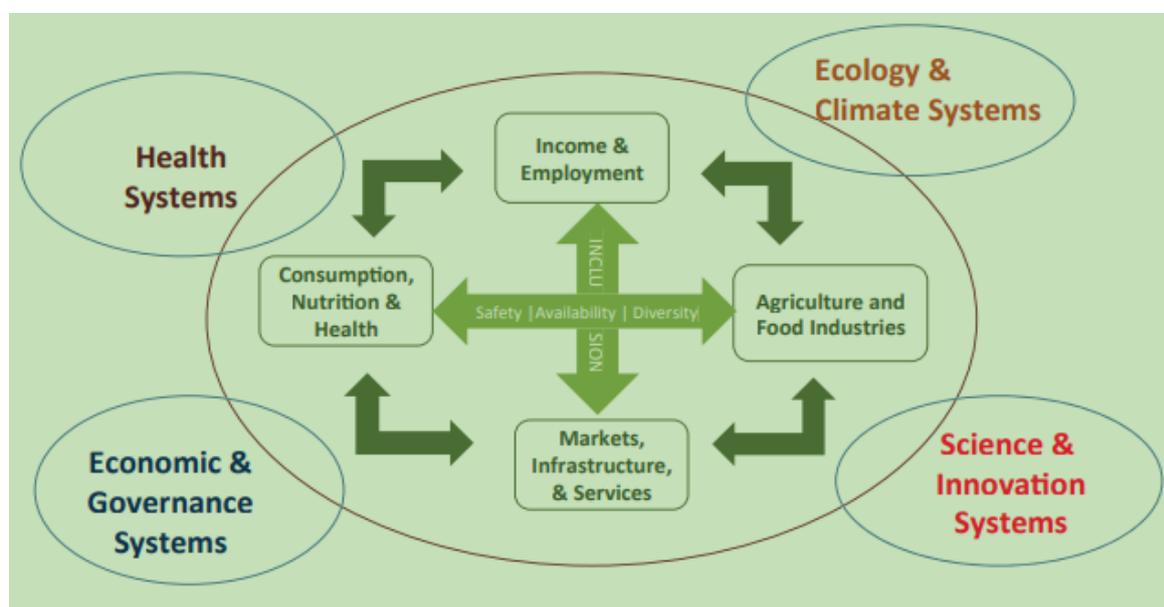


Figure 3: Food systems conceptual framework<sup>52</sup>

The FSS has four ambitious targets. First, it seeks to generate significant actions which deliver measurable progress in fulfilling the 2030 Agenda SDGs and issue a call for action to all actors in the food system like governments, companies, and citizens. Second, it wants to raise awareness and promote public discussion on the reform of food systems. Third, it wants to develop guiding principles for these actors who seek to transform their food systems to support the SDGs called “principles of engagement”<sup>53</sup>. Fourth, it wants to establish a system of follow-up and review on the Summit’s outcomes so that participants adhere to their commitments and conduct new actions. Also, the impact of the Summit will be measured and analyzed.<sup>54</sup>

<sup>51</sup> [https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al\\_0.pdf](https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al_0.pdf)

<sup>52</sup> [https://sc-fss2021.org/wp-content/uploads/2021/09/ScGroup\\_Reader\\_UNFSS2021.pdf](https://sc-fss2021.org/wp-content/uploads/2021/09/ScGroup_Reader_UNFSS2021.pdf)

<sup>53</sup> <https://www.un.org/en/food-systems-summit/vision-principles#Principles%20of%20Engagement>

<sup>54</sup> <https://www.un.org/en/food-systems-summit/about>

### **3.6. Recommendations for Further Research**

With this BGG having introduced you to the key issues of this topic, it is now your task to deepen your research and prepare individually for your role as a delegate. As you surely recognized while reading this document, the topic offers a variety of issues and problems to be solved. You may focus your research on a selected aspect and contribute your knowledge and approaches into a working paper in collaboration with other delegates. To represent your assigned country properly, you can orientate your preparation on the following questions:

- How does food production in my country look like in terms of technology, farm scales, crops and products produced?
- How is the state of nutrition in my country and to which degree can people afford healthy diets?
- Is my country reliant on food imports and how important are food exports for the economy?
- How does my country contribute to achieve a sustainable food production domestically and globally?
- Which effects of demographic change will my country face with regards to food demand?
- Where is the potential for collaboration with other states of similar interests?

### **3.7. Useful Links for Further Research**

Collection of relevant UN documents

<https://sustainabledevelopment.un.org/topics/foodagriculture/documents>

SOFI Report 2021 „The State of Food Security and Nutrition in the World 2021”

<https://www.fao.org/3/cb4474en/cb4474en.pdf>

Our World in Data

(look at posts in topic “Food and Agriculture” or those cited in the BGG)

<https://ourworldindata.org/>

UN Food Systems Summit

<https://www.un.org/en/food-systems-summit>

Science and Innovations – Reader with contributions to the UN Food Systems Summit

(If you like to dig deeper into a specific aspect of sustainable food production, you will find an article about it in here.)

[https://sc-fss2021.org/wp-content/uploads/2021/09/ScGroup\\_Reader\\_UNFSS2021.pdf](https://sc-fss2021.org/wp-content/uploads/2021/09/ScGroup_Reader_UNFSS2021.pdf)

## **4. Topic B: Sustaining Economic Opportunities in Emerging Markets and Developing Countries**

### **4.1. Introduction**

Emerging and developing economies are essential drivers for developing more significant regions, and they are likely to account for almost 60% of world GDP by 2030. They provide economic and investment opportunities as they grow, industrialise and rapidly urbanise.

However, the world faces currently two pressing challenges – on the one hand, combating climate change and global warming; on the other hand, enabling inclusive and equitable socio-economic development. This is particularly relevant in the context of post-COVID recovery efforts as the COVID-19 pandemic has shown the vulnerability of Emerging Markets and Developing Countries (EMDEs) towards external shocks and widened the gap between investment needs and current flows. The damaging effects of COVID-19 are lasting longer in many parts of the developing world. They limit the capacity to pursue a sustainable recovery compared to developed countries. On top of that, globalisation has contributed to the migration of well-educated youth, reducing innovation potential. Emerging and developing economies are also confronted by the reality of climate crisis causing extreme weather conditions such as desertification, droughts or floods that impact their economic development.

In the light of climate change and green recovery, it is essential to consider what solutions are implemented in the power sector, construction, infrastructure and transportation as the electricity sector is a significant source of greenhouse gas emissions globally. The electricity demand in developing countries is estimated to double shortly due to population growth and industrialisation, and therefore decisions made in EMDEs will play a crucial role. The solution to the sustainable development of EMDEs may depend on the transition towards sustainable and renewable energy systems since most of the remaining green energy potential lies in them. Suppose renewable energy deployment and clean energy investment do not speed up EMDEs. In that case, the world will probably fail in addressing global climate action, and it won't be possible to meet the target of the Paris Agreement to limit global warming to well below two °C neither to reach other sustainable development goals. Therefore, it is of interest to the worldwide community to support emerging and developing economies in clean energy implementation.

This brings a huge economic opportunity to take advantage of accelerating energy transitions across EMDEs. Technology development, falling costs for renewables, innovative approaches and

digitalisation are creating the potential for local small and medium-sized enterprises, multinational corporations, governments and the international community to jump straight to the adoption and use of advanced clean technologies, thus, skip inferior, more polluting technologies. Governments need to ensure that these clean energy transitions are people-centred, inclusive for both genders, and create new employment opportunities that contribute to the social dimension of sustainable growth. If energy transitions are successful, the global investment capital needs to be accumulated and allocated particularly to EMDEs. Sustainable finance frameworks should encourage the shift.

International engagement and support are needed to boost economic opportunities in the clean energy transition of EMDEs and their green post-COVID recovery. Supportive global actions will be essential to catalyse investments in the developing world, significantly to reform the energy sector.

## 4.2. International and Regional Framework

The relationship between energy and sustainable development gained its momentum first in 1992 at the Conference on Environment and Development (UNCED) in Rio de Janeiro, also known as the “Earth Summit”.<sup>55</sup> One of the milestone achievements was the acceptance of the concept of sustainable development by the international community and provision of fundamental principles to achieve it. UNCED adopted *Agenda 21*, placing greater emphasis on renewable energy sources and sustainable energy production and consumption to protect human and environmental well-being.<sup>56</sup> During the World Summit on Sustainable Development (WSSD) in 2002, the focus was on the importance of energy for development in a particular environment and development needs of Africa –such as household energy, water and sanitation.<sup>57</sup> Its action plan, the *Johannesburg Plan of Implementation*, called for diversification of energy sources to increase the share of the energy mix to renewable energies, improve energy efficiency and deploy advanced energy technologies, including cleaner fossil fuel technologies.<sup>58</sup> It also recommended international financial institutions and other agencies to support developing countries in their efforts to establish regulatory frameworks and policies regarding renewable energy and clean energy technologies as well as to provide financial resources via financial instruments and mechanisms to meet the growing global energy demand.<sup>59</sup> The UN Conference on Sustainable Development in 2012 (Rio+20) acknowledged energy as a priority for sustainable development. Member states are committed to implementing renewable energy policies that enable affordable clean energy technologies and services and combat

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<sup>55</sup> <https://www.un.org/en/conferences/environment/rio1992>

<sup>56</sup> UNCED, *Agenda 21*, 1992.

<sup>57</sup> von Schirnding, Y. (2005). The World Summit on Sustainable Development: reaffirming the centrality of health. *Globalization and Health*, [online] 1(1). Available at: <https://globalizationandhealth.biomedcentral.com/articles/10.1186/1744-8603-1-8> [Accessed 10 Nov. 2021].

<sup>58</sup> World Summit on Sustainable Development (2002). *Plan of Implementation of the World Summit on Sustainable Development*. [online] Available at: [https://www.un.org/esa/sustdev/documents/WSSD\\_POI\\_PD/English/WSSD\\_PlanImpl.pdf](https://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf) pp.9

<sup>59</sup> World Summit on Sustainable Development (2002). *Plan of Implementation of the World Summit on Sustainable Development*. [online] Available at: [https://www.un.org/esa/sustdev/documents/WSSD\\_POI\\_PD/English/WSSD\\_PlanImpl.pdf](https://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf) pp.11

climate change and poverty.<sup>60</sup> In 2013, *Agenda 2063* was proposed as Africa's blueprint and plan for continent transformation, and one of its goals is to support environmental sustainability and climate resilience of economies and communities.<sup>61</sup>

Adopted in 2000, the eight Millennium Development Goals (MDGs) committed world leaders to combat poverty, hunger, disease, illiteracy, women discrimination and environmental degradation.<sup>62</sup> As the 2015 deadline for the MDGs approached, Member States adopted 17 new goals covering 163 targets in the UN General Assembly resolution 70/1 of 2015, *Transforming Our World: The 2030 Agenda for Sustainable Development*,<sup>63</sup> also known as Sustainable Development Goals (SDGs). The energy was recognised as a priority and has its own goal devoted – *SDG 7 Affordable and Clean Energy* calling for universal access to sustainable energy by 2030 as well as increasing share of renewable energy in the global mix, doubling the global rate of improvement in energy efficiency, enhancing international cooperation to facilitate access to clean energy research and technology and to promote investment in energy infrastructure and clean energy technology.<sup>64</sup> Clean energy transformation also plays an essential role in achieving *SDG 8 Decent Work and Economic Growth* targeting, among others, improving global resource efficiency in consumption and production as well as decoupling economic growth from environmental degradation and achieving higher levels of economic productivity through diversification, technological upgrading and innovation.<sup>65</sup> Clean energy is vital for *SDG 13 Climate Action* regarding investments accelerating decarbonisation of all aspects of the economy, green jobs, sustainable and inclusive growth; and some targets of *SDG 1 No Poverty*, *SDG 9 Industry, Innovation and Infrastructure* and *SDG 12 Responsible Consumption and Production*. As strong international cooperation is needed for sustainable economic growth and clean energy transition in Emerging Markets and Developing Economies, *SDG 17 Partnerships for the Goals* highlights resource mobilisation and international support to developing countries, investment promotion regimes and enhancing North-South, South-South and triangular regional and international cooperation to strengthen science, technology and innovation.<sup>66</sup>

In 2015, the Third International Conference on Financing for Development achieved in its outcome agreement, the *Addis Ababa Action Agenda* (AAAA), significant support for financing sustainable development and called for increased investment in the field of clean energy technologies and

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<sup>60</sup> UN General Assembly, *The Future We Want* (A/RES/66/288), 2012, pp. 24-25.

<sup>61</sup> African Union (2013). *Agenda 2063: The Africa We Want*. / *African Union*. [online] Au.int. Available at: <https://au.int/en/agenda2063/overview>

<sup>62</sup> United Nations (2015). *United Nations Millennium Development Goals*. [online] Un.org. Available at: <https://www.un.org/millenniumgoals/>

<sup>63</sup> UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development* (A/RES/70/1), 2015.

<sup>64</sup> United Nations (2018b). *Energy - United Nations Sustainable Development*. [online] United Nations Sustainable Development. Available at: <https://www.un.org/sustainabledevelopment/energy/>

<sup>65</sup> United Nations (2018a). *Economic Growth - United Nations Sustainable Development*. [online] United Nations Sustainable Development. Available at: <https://www.un.org/sustainabledevelopment/economic-growth/>

<sup>66</sup> United Nations (2018c). *Global Partnerships - United Nations Sustainable Development*. [online] United Nations Sustainable Development. Available at: <https://www.un.org/sustainabledevelopment/globalpartnerships/>

making them more affordable to be able to gain more environmental and development benefits.<sup>67</sup> The AAAA created a new *Financing for Development Forum* under ECOSOC, which is held on an annual basis and reviews financing for development outcomes and implementation of 2030 Agenda.<sup>68</sup> The AAAA recognised the importance of public-private partnerships as a financing mechanism to support SDG achievement.<sup>69</sup> During the 21<sup>st</sup> Conference of the Parties (COP) to the *United Nations Framework Convention on Climate Change* (UNFCCC) in 2015, the *Paris Agreement* has been adopted to combat climate change and adapt to its effects. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.<sup>70</sup> Integral part of reducing greenhouse gas emissions is to deploy clean energy technologies and provide access to climate finance to developing countries.<sup>71</sup>

### 4.3. Role of International System

Sustainable development is the most urgent priority of the international community addressed by the 2030 Agenda for Sustainable Development.<sup>72</sup> ECOSOC is the unifying platform for integration, action on all three pillars of sustainable development – economic, social and environmental, and follow-up and review of post-2015 development agenda.<sup>73</sup> The General Assembly resolution 67/215 of 2012 declared 2014-2024 as the Decade of Sustainable Energy for All, underscoring the importance of energy issues for sustainable development.<sup>74</sup> Social, economic and environmental benefits were highlighted in the General Assembly resolution 71/233 of 2017 on “Ensuring access to affordable, reliable, sustainable and modern energy for all”, it stressed the importance of empowerment of developing countries through a rapid expansion of affordable, sustainable energy and the need for collaborative efforts to share clean energy technologies and promotion of synergies across the global energy agenda for sustainable development.<sup>75</sup> This was further enhanced in the General Assembly resolution 73/236.

ECOSOC held its 2021 High-level Political Forum on Sustainable Development (HLPF) in July with the theme of “*sustainable and resilient recovery from the COVID-19 pandemic that promotes the*

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<sup>67</sup> UN General Assembly, Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda) (A/RES/69/313), 2015, pp. 37-38.

<sup>68</sup> UN Economic and Social Council (2021). *Financing Sustainable Development / Economic and Social Council*. [online] www.un.org. Available at: <https://www.un.org/ecosoc/en/financing-sustainable-development>

<sup>69</sup> UN General Assembly, Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda) (A/RES/69/313), 2015, pp. 15-16.

<sup>70</sup> UNFCCC (2015). *The Paris Agreement*. [online] UNFCCC. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

<sup>71</sup> United Nations Treaty Collection (2009). *UNTC*. [online] Un.org. Available at: [https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=XXVII-7-d&chapter=27&clang=\\_en](https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en)

<sup>72</sup> UN Economic and Social Council (2018). *Sustainable Development*. [online] Un.org. Available at: <https://www.un.org/ecosoc/en/sustainable-development>

<sup>73</sup> UN Economic and Social Council (2018). *Sustainable Development*. [online] Un.org. Available at: <https://www.un.org/ecosoc/en/sustainable-development>

<sup>74</sup> UN General Assembly. Promotion of new and renewable sources of energy (A/RES/67/215), 2012, pp. 2.

<sup>75</sup> UN General Assembly. Ensuring access to affordable, reliable, sustainable and modern energy for all (A/RES/71/233), 2017

*economic, social and environmental dimensions of sustainable development: building an inclusive and effective path for the achievement of the 2030 Agenda in the context of the decade of action and delivery for sustainable development*”.<sup>76</sup> The Member States, private sector, and civil society actors from around the world discussed in the Forum ways to ensure a sustainable and resilient post-COVID recovery that enables the realisation of the 2030 Agenda. The HLPF 2020 emphasised, among other key messages, that the pandemic presents for many a unique opportunity to remove fossil fuel subsidies and decrease coal dependency with transition strategies and strengthen nature-based solutions, and circular economy approaches.<sup>77</sup> However, the importance of development cooperation is inevitable, mainly to tackle challenges related to sustainable development financing. The Forum also agreed that ensuring access to affordable, reliable, sustainable and modern energy for all by 2030 will bring economic opportunities and jobs, as well as that accelerating the energy transition towards renewables will be essential to achieve climate objectives and arrive at zero net emissions by 2050.<sup>78</sup> ECOSOC’s HLPF highlights, particularly digitalisation, managing modern energy systems and reducing energy demand growth.<sup>79</sup>

The creation of the Development Cooperation Forum (DCF) under ECOSOC was one of the outcomes of the 2005 World Summit to review trends and progress in development cooperation under the 2030 Agenda.<sup>80</sup> The 7<sup>th</sup> High-Level Meeting of the DCF in 2021 acknowledged that recovery spending should be directed towards supporting disaster risk reduction, sustainable infrastructure and decent work by scaling up public and private investment in a transition towards clean energy that also includes investment in renewables and expanded access to clean energy in developing countries and to green jobs.<sup>81</sup> The 2020 report of ECOSOC Forum on Financing for Development follow-up stressed sustainable and inclusive economic recovery taking into account the specific needs and circumstances of developing countries and calls for people-centred, gender-responsive actions

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<sup>76</sup> United Nations (2021). *Sustainable Development Goals*. [online] Available at: <https://sustainabledevelopment.un.org/hlpf/2021>

<sup>77</sup> UN High-level Political Forum (2020). *Summary by the President of the Economic and Social Council of the high-level political forum on sustainable development*. [online] Available at: [https://sustainabledevelopment.un.org/content/documents/269252020\\_HLPF\\_Presidents\\_summary.pdf](https://sustainabledevelopment.un.org/content/documents/269252020_HLPF_Presidents_summary.pdf)

<sup>78</sup> UN High-level Political Forum (2020). *Summary by the President of the Economic and Social Council of the high-level political forum on sustainable development*. [online] Available at: [https://sustainabledevelopment.un.org/content/documents/269252020\\_HLPF\\_Presidents\\_summary.pdf](https://sustainabledevelopment.un.org/content/documents/269252020_HLPF_Presidents_summary.pdf)

<sup>79</sup> UN High-level Political Forum (2020). *Summary by the President of the Economic and Social Council of the high-level political forum on sustainable development*. [online] Available at: [https://sustainabledevelopment.un.org/content/documents/269252020\\_HLPF\\_Presidents\\_summary.pdf](https://sustainabledevelopment.un.org/content/documents/269252020_HLPF_Presidents_summary.pdf)

<sup>80</sup> UN Department of Economic and Social Affairs (2021). *About DCF*. [online] [www.un.org](http://www.un.org). Available at: <https://www.un.org/development/desa/financing/what-we-do/ECOSOC/development-cooperation-forum/about-DCF>

<sup>81</sup> UN Department of Economic and Social Affairs (2021b). *Summary of the seventh high-level meeting of the Development Cooperation Forum*. [online] Available at: <https://www.un.org/development/desa/financing/sites/www.un.org.development.desa.financing/files/2021-09/2021%20DCF%20High-level%20Meeting%20Summary-glossy.pdf>

focused on climate-resilient development as economic downturn caused by COVID-19 – in particular global economic and commodity price shocks – increase risks to financial stability.<sup>82</sup>

The International Energy Agency (IEA) is an international energy forum of 30 member countries and eight association countries providing global dialogue on energy and enhancing secure and sustainable energy development for economic and environmental prosperity.<sup>83</sup> To advise the Member States and major emerging economies in implementing sustainable energy measures, including the advancement of a clean energy transition to their national policies, IEA provides analysis, data, policy recommendations and frameworks. The 2021 IEA Special Report as the world's first comprehensive energy roadmap discusses how government actions boost clean energy, reduce fossil fuel use, create jobs, accelerate economic growth, and enable the global energy sector with net-zero emissions in 2050.<sup>84</sup> This roadmap emphasises priority actions such as the massive deployment of clean and efficient energy technologies and accelerating innovation while providing developing countries with access to financing and technological know-how.<sup>85</sup> Because, according to the 2018 report of the Intergovernmental Panel on Climate Change (IPCC), to meet the 1.5°C global warming target of the Paris Agreement, global carbon emissions need to reach net-zero around mid-century.<sup>86</sup> In IEA's World Energy Investment 2021 Special Report: *Financing Clean Energy Transitions in Emerging and Developing Economies*,<sup>87</sup> the challenge of mobilising investment and finance to support clean energy transitions in EMDEs is addressed in the form of analysis of existing projects and case studies. Another intergovernmental organisation fostering the implementation of sustainable energy is the International Renewable Energy Agency (IRENA), collecting and sharing data on energy progress, frameworks and policy examples in countries.<sup>88</sup>

The UN Climate Change Conference, COP26, held in November 2021 in Glasgow, calls in the outcome document “*Glasgow Climate Pact*” for the acceleration of efforts towards technologies and policies enabling the transition towards low-emission energy systems, including scaled-up

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<sup>82</sup> UN Economic and Social Council (2020). *Report of the Economic and Social Council forum on financing for development follow-up*. [online] Available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N20/174/43/PDF/N2017443.pdf?OpenElement>

<sup>83</sup> International Energy Agency (2021). *Net Zero by 2050 A Roadmap for the Global Energy Sector*. [online] Available at: [https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector\\_CORR.pdf](https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf)

<sup>84</sup> IEA (2021). *Press release: Pathway to critical and formidable goal of net-zero emissions by 2050 is narrow but brings huge benefits, according to IEA special report*. [online] Available at: <https://www.iea.org/news/pathway-to-critical-and-formidable-goal-of-net-zero-emissions-by-2050-is-narrow-but-brings-huge-benefits>

<sup>85</sup> International Energy Agency (2021). *Net Zero by 2050 A Roadmap for the Global Energy Sector*. [online] Available at: [https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector\\_CORR.pdf](https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf)

<sup>86</sup> IPCC (2018). *Special Report: Global Warming of 1.5 °C*. [online] Available at: <https://www.ipcc.ch/sr15/>

<sup>87</sup> IEA (2021a). *Financing Clean Energy Transitions in Emerging and Developing Economies*. [online] Available at: [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf)

<sup>88</sup> IRENA, About IRENA, 2017.

deployment of clean power generation and energy efficiency measures while supporting this transition in particular in vulnerable developing countries.<sup>89</sup>

#### 4.4. Definition of Emerging Markets and Developing Economies

Development is a concept that is difficult to define and has been challenging to construct development taxonomy.<sup>90</sup> There are several approaches to distinguishing countries to understand their social and economic outcomes better, positioning in the world economy, and possible trend developments in upcoming decades. For this background guide, we will use the country classification system of the World Bank and the IMF to define our target country groups – emerging markets and developing countries (EMDEs).

The classification of the World Bank is based on estimates of gross national income (GNI) per capita converted to international dollars using purchasing power parity rates. It classifies the world's economies as *low income*, *lower-middle income*, *upper-middle income* and *high income*.<sup>91</sup> Based on the country's per capita income level, export diversification and degree of integration into the global financial system, the IMF's *World Economic Outlook* classifies countries into two groups: *Advanced economies*, and *Emerging markets and developing economies*.<sup>92</sup>

In this background guide, the terms “developing countries” or “emerging markets and developing economies” refer to the nations classified as low- to middle-income countries by the World Bank of the fiscal year 2022<sup>93</sup> and as Emerging markets and developing economies by the IMF<sup>94</sup> as described above. There is a subcategory of emerging markets with common characteristics different from developing countries in developing countries. Emerging market – as a group – can be defined as a subcategory of developing economy with lower-middle to upper-middle-income that satisfies two criteria: a rapid pace of economic development and government policies favouring economic

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<sup>89</sup> UNFCCC (2021). *Glasgow Climate Pact*. [online] Available at:

[https://unfccc.int/sites/default/files/resource/cop26\\_auv\\_2f\\_cover\\_decision.pdf](https://unfccc.int/sites/default/files/resource/cop26_auv_2f_cover_decision.pdf)

<sup>90</sup> Advocates for International Development (2022). *Understanding the Developed/Developing Country Taxonomy*. [online] Available at: <https://www.a4id.org/policy/understanding-the-developeddeveloping-country-taxonomy/>

<sup>91</sup> World Bank (2021). *World Bank Country and Lending Groups – World Bank Data Help Desk*. [online] Worldbank.org. Available at: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

<sup>92</sup> International Monetary Fund (2021). *Miles to Go*. [online] Available at: <https://www.imf.org/external/pubs/ft/fandd/2021/06/the-future-of-emerging-markets-dutttagupta-and-pazarbasioglu.htm>

<sup>93</sup> World Bank (2021). *World Bank Country and Lending Groups – World Bank Data Help Desk*. [online] Worldbank.org. Available at: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

<sup>94</sup> 20 Emerging markets alphabetically (IMF, June 2021): Argentina, Brazil, Chile, China, Colombia, Egypt, Hungary, India, Indonesia, Iran, Malaysia, Mexico, the Philippines, Poland, Russia, Saudi Arabia, South Africa, Thailand, Turkey, and the United Arab Emirates.

liberalisation and the adoption of a free-market system.<sup>95,96</sup> Degree of globalisation and real GDP per capita in remaining low-income developing countries are shallow and below most emerging markets. Low-income developing countries represent the rest of the group of EMDEs defined by the World Bank and the IMF. They are characterised by low income per capita and poverty, low productivity rate, poor healthcare and education, shortage of capital, the predominance of agriculture and high levels of unemployment.

#### **4.5. Economic, Social and Environmental Dimension of Sustainable Growth in EMDEs**

Sustainable growth is the international community's most urgent priority and lies at the core of the 2030 Development Agenda for sustainable development. ECOSOC's activities comprise all three dimensions of sustainable development—economic, social and environmental.<sup>97</sup> Achieving sustainable growth in EMDEs according to the Agenda 2030 requires the overall integration of these three dimensions simultaneously and balanced investment inflows in various forms of capital.<sup>98</sup>

*The environmental dimension of sustainability* implies that ecological resources are utilised to make it possible for civilisations to support themselves indefinitely.<sup>99</sup> Climate change over the last few decades due to environmental degradation will continue increasing global temperatures, changing rainfall patterns if no measures are taken, resulting in more frequent and severe extreme events such as floods and droughts. EMDEs are the most vulnerable to climate change because they aggravate population growth, poverty, and rapid urbanisation.<sup>100</sup> Besides, the difference in climate conditions is likely to reduce economic growth in developing countries, and without adaptation and mitigation, the losses are estimated to be up to 20% of GDP.<sup>101</sup> As a response to reduce, there has been an eco-innovation perspective emerging that deploys various new technologies to combat climate change and reduce the emission of greenhouse gases to help EMDEs grow sustainably.

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<sup>95</sup> Bruton, G.D., Filatotchev, I., Si, S. and Wright, M. (2013). Entrepreneurship and Strategy in Emerging Economies. *Strategic Entrepreneurship Journal*, [online] 7(3), pp.169–180. Available at: <https://onlinelibrary.wiley.com/doi/full/10.1002/sej.1159>

<sup>96</sup> Arnold DJ, Quelch JA. 1998. New strategies in emerging markets. *Sloan Management Review* 40: 7–21.

<sup>97</sup> UN ECOSOC (2021). *Promoting sustainable development*. [online] Available at: <https://www.un.org/ecosoc/en/content/promoting-sustainable-development>

<sup>98</sup> United Nations (2015a). *Integrating the three dimensions of sustainable development: A framework and tools*. [online] Available at: <https://www.unescap.org/sites/default/files/Integrating%20the%20three%20dimensions%20of%20sustainable%20development%20A%20framework.pdf>

<sup>99</sup> Daly, H.E. (1990). Toward some operational principles of sustainable development. *Ecological Economics*, 2(1), pp.1–6

<sup>100</sup> European Parliament (2007). *Climate change impacts on Developing Countries - EU Accountability*. [online] Available at: [https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/393511/IPOL-ENVI\\_ET\(2007\)393511\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/393511/IPOL-ENVI_ET(2007)393511_EN.pdf)

<sup>101</sup> European Parliament (2007). *Climate change impacts on Developing Countries - EU Accountability*. [online] Available at: [https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/393511/IPOL-ENVI\\_ET\(2007\)393511\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/393511/IPOL-ENVI_ET(2007)393511_EN.pdf)

*The social dimension of sustainability* occurs when the formal and informal norms and processes are ensured; systems, structures, and relationships actively support the capacity of current and future generations to create healthy communities, including democracy and increased quality of life.<sup>102</sup> Welfare means, on the one hand, economic power for an increasing population. Still, on the other hand, it means also improving health, educational and cultural levels, and an overall standard of living. Green growth needs to be fostered via integrating social dimensions into country strategies and individual business models. This dimension about energy refers to the equal right of having access to power for each member of the international community. In addition to that, the development of new energy technologies positively affects employment as a social effect.

*The economic dimension* of sustainability refers to the ability of an economy to consistently maintain a respectable level of increasing gross domestic productivity (or maintenance of capital stock) over a long period.<sup>103</sup> This dimension with relation to energy considers whether investments into renewable energy are economically viable in terms of return on investment vs initial investment and costs.

#### **4.6. Role of EMDEs' Clean Energy Transition in the Global Economy**

Emerging markets and low-income developing economies in Africa, Latin America, the Middle East, Asia, and Europe represent a heterogeneous group of diverse countries regarding national circumstances, average income levels, and starting points. According to the Policy Brief from Maurice Obstfeld, a senior fellow at the Peterson Institute for International Economics, EMDEs are likely to account for almost 60% of world GDP by 2030.<sup>104</sup> According to the estimations of BP Energy Outlook 2035, global energy demand is expected to rise by 41% by 2035, with around 95% of the growth will be accounted for in EMDEs.<sup>105</sup> This increasing energy demand cannot be met permanently by fossil fuels alone. Therefore, they are also expected to play an essential role in the energy transition as they hold most of the remaining renewable potential. Their electricity demand is estimated to double soon.<sup>106</sup> The size of the economies and their energy systems create an opportunity to implement transformation faster and more manageable than in developed countries. However, despite accounting for two-thirds of the world's population, only one-third of global

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<sup>102</sup> Partridge, M.D. (2005). Does Income Distribution Affect U.S. State Economic Growth?\*. *Journal of Regional Science*, 45(2), pp.363–394

<sup>103</sup> Daly, H.E. (1996). *Beyond Growth: The Economics of Sustainable Development*. [online] Available at: <http://pinguet.free.fr/daly1996.pdf>

<sup>104</sup> Obstfeld, M. (2021). *An uneven global rebound will challenge emerging-market and developing economies*. [online] The Peterson Institute for International Economics. Available at: <https://www.piie.com/publications/policy-briefs/uneven-global-rebound-will-challenge-emerging-market-and-developing>

<sup>105</sup> BP (2014). *BP Energy Outlook 2035*. [online] Available at: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2014.pdf>

<sup>106</sup> IEA (2019). *World Energy Outlook: Technical Report*. Paris

general energy investment is directed towards EMDEs, and a 20% share is represented by clean energy investment.<sup>107</sup>

On the one hand, there is a climate and economic crisis that requires a rapid shift to low-carbon energy systems. Energy has a cross-cutting input into many economic segments, and its sustainable use is a core part of the climate change mitigation approach. Around 60% of total global greenhouse gas emissions come from energy use.<sup>108</sup> According to the International Panel on Climate Change (IPCC), for the world to be able to meet the goal of limiting temperature increase to 1.5°C, renewable energy must supply 70-85% of electricity in 2050<sup>109</sup> and annual investments in low-emission energy technologies must be multiplied by a factor of 4-10 compared to 2015. However, this transition is happening slower than needed, and current decarbonisation and mitigation strategies will result in approximately a global warming of approx. 3°C by 2100 and further after that as reported by an IPCC Special Report.<sup>110</sup> By increasing energy efficiency and deploying renewable technologies, a decisive part of the climate-damaging emissions can be avoided.

On the other hand, energy is a powerful engine of growth and development worldwide. It plays a crucial role in ending poverty and improving economic outcomes, achieving better health and education, reducing inequalities, helping to build cities and advance industries, ensuring access to clean water and sanitation, and tackling environmental issues.<sup>111</sup> Solving the challenge of avoiding a high-carbon path that has been deployed for generations in developed economies also depends on varied circumstances and concerns in individual EMDEs that are pretty different from those prevailing in developed economies.

#### **4.7. Economic Impact of COVID-19 Shock in EMDEs and its Effect on Investment Inflow**

EMDEs are expected to represent the most significant global energy demand growth source in the future. The deployment of clean energy technologies needs to be accelerated as the pace of energy investment in many EMDEs has slowed down recently 58 after being hit harder the pandemic than advanced economies. They differ from developed economies in their structure and tools available to implement macroeconomic policies to reduce the amplitude and economic costs of recession.<sup>112</sup> Global economic downturn is impacting emerging, and low-income economies in a disproportionate

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<sup>107</sup> IEA (2021a). *Financing Clean Energy Transitions in Emerging and Developing Economies*. [online] Available at: [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf) pp.28

<sup>108</sup> United Nations (2018b). *Energy - United Nations Sustainable Development*. [online] United Nations Sustainable Development. Available at: <https://www.un.org/sustainabledevelopment/energy/>

<sup>109</sup> IPCC (2018). *Special Report: Global Warming of 1.5 °C*. [online] Available at: <https://www.ipcc.ch/sr15/>

<sup>110</sup> IPCC (2018). *Special Report: Global Warming of 1.5 °C*. [online] Available at: <https://www.ipcc.ch/sr15/>

<sup>111</sup> IEA (2021a). *Financing Clean Energy Transitions in Emerging and Developing Economies*. [online] Available at: [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf)

<sup>112</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies>

manner<sup>113</sup> and social and economic consequence of the crisis is likely to be significant in the poorest parts of the world, especially in sub-Saharan Africa and in the region of South Asia.<sup>114</sup>

From an economic perspective, there are two COVID-19 shock transmission channels. The first channel shows the domestic impact of the illness and preventive measures such as closed borders and economies on output, government revenue, employment and productivity.<sup>115</sup> The second channel includes external shocks to cross-border physical, trade and financial flows,<sup>116</sup> e.g. shocks to manufacturing, decreased demand for commodities or wonder to the tourism sector.

The *Centre for Economic Policy Research* identifies 5 main factors related to external shock that intensify the economic effects of COVID-19 in EMDEs and may slow down the recovery.

1) *Social distancing measures, the smaller scope for working remotely and a large share of the labour force employed in micro-firms*

Fall in economic activity and the persistence of social distancing are reshaping supply chains, and new forms of working reduce efficiency in EMDEs as a large share of workers is employed in tiny firms. They have a relatively low level of education.<sup>117</sup> A share of jobs that can be done remotely is much smaller than in developed countries. Therefore, the effect on employment and GDP might be more significant in EMDEs. For example, “in India, urban employment fell 31% between March and April 2020; in Peru, employment fell 25% in the quarter February-April 2020 compared to the previous year; in Colombia, employment in April 2020 was 24.5% lower than in April 2019” as reported by Centre for Economic Policy.<sup>118</sup>

2) *Reduced immigrant remittances*

Unemployment in developed economies has reduced immigrant remittances to their home countries. For many developing countries, remittances obtained from abroad account for more than 10% GDP<sup>119</sup>, and they influence the recipients’ liquid assets in EMDEs.

3) *Sharp fall in commodity prices*

Many commodity-dependent EMDEs in Africa and Latin America need to face a sharp fall in the prices of commodity exports. UN Department of Economic and Social Affairs reported in Policy Brief from April 2020 that oil prices have declined by more than 50%, and most metal and mineral

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<sup>113</sup> Lee, S. (2021). *COVID-19 Brief: Impact on the Economies of Developing Countries*. [online] USGLC. Available at: <https://www.usglc.org/coronavirus/economies-of-developing-countries/>

<sup>114</sup> The World Bank (2020). *Projected poverty impacts of COVID-19 (coronavirus)*. [online] World Bank. Available at: <https://www.worldbank.org/en/topic/poverty/brief/projected-poverty-impacts-of-COVID-19>

<sup>115</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.113

<sup>116</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.113

<sup>117</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.29

<sup>118</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.29

<sup>119</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.31

prices fell by 20% or more at the beginning of 2020.<sup>120</sup> This occurs as restrictions in economic activities and job losses have sharply influenced travel, transportation and demand for consumer goods. The decline in manufacturing means less demand for base metals (e.g. copper, iron, zinc, and aluminium). Falling commodity prices matter for more than two countries in sub-Saharan Africa (e.g. Algeria, Angola, Nigeria) and nearly one-third of Latin American economies that are highly dependent on commodities to finance their budgets because more than 80% of their export revenues come from them.<sup>121</sup>

Falling commodity prices have also weakened external balances and triggered a significant outflow of portfolio capital (exit of foreign investors) and exchange rate depreciation.<sup>122</sup> The Brazilian real, the Mexican peso, and the South African rand have, for example, depreciated by about 30% against the dollar since January 2020.<sup>123</sup>

#### 4) *Difficulties for sovereigns to borrow abroad*

EMDEs have smaller financial markets, and their governments have less access to credit; therefore, in many countries, sovereign borrowing abroad to smooth the shock is not feasible because they find it more difficult to credibly commit future tax revenues to pay for a fiscal expansion today.<sup>124</sup>

#### 5) *Travel restrictions and fall in tourism demand*

The COVID-19 shock has implications on tourism-dependent economies such as Latin American and Caribbean countries. Travel restrictions and fall in tourism demand cause damage to the output, employment and the balance of international payments across the region.<sup>125</sup>

Besides slowing down the post-pandemic recovery, the COVID-19 shock impacts global energy investment and a decrease in the flow of climate finance and clean energy technology projects. IEA

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<sup>120</sup> UN Department of Economic and Social Affairs (2020). *Policy Brief #60: Commodity exporters face mounting economic challenges as pandemic spreads*. [online] www.un.org. Available at: <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-60-commodity-exporters-face-mounting-economic-challenges-as-pandemic-spreads/>

<sup>121</sup> UN Department of Economic and Social Affairs (2020). *Policy Brief #60: Commodity exporters face mounting economic challenges as pandemic spreads*. [online] www.un.org. Available at: <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-60-commodity-exporters-face-mounting-economic-challenges-as-pandemic-spreads/>

<sup>122</sup> UN Department of Economic and Social Affairs (2020). *Policy Brief #60: Commodity exporters face mounting economic challenges as pandemic spreads*. [online] www.un.org. Available at: <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-60-commodity-exporters-face-mounting-economic-challenges-as-pandemic-spreads/>

<sup>123</sup> UN Department of Economic and Social Affairs (2020). *Policy Brief #60: Commodity exporters face mounting economic challenges as pandemic spreads*. [online] www.un.org. Available at: <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-60-commodity-exporters-face-mounting-economic-challenges-as-pandemic-spreads/>

<sup>124</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.30

<sup>125</sup> Djankov, S. and Panizza, U. (2020). *COVID-19 in Developing Economies*. [online] Available at: <https://voxeu.org/content/covid-19-developing-economies> pp.112

reports that annual energy investments have decreased by 20% since 2016, and around 70% of this fall is due to lower spending on oil and gas supplies, mostly in hydrocarbon-rich countries.<sup>126</sup>

#### 4.8. Renewable Energy Deployment in EMDEs – Clean Power, Efficiency and Electrification

Renewable energy has been used in developing countries for a long time, biomass as firewood for cooking and hydropower to generate electricity. According to the 2019 IEA's report, renewable energy accounted for approx. 13,5% of the total global primary energy in 2017 and non-OECD countries were responsible for approx. 72% of that share.<sup>127</sup> Venegas Cantanero (2020) in the *Journal of Energy Research & Social Science* argues that even though more than a half of final energy consumption in some developing countries come from renewables, the use of modern renewable energy is less widespread with a firm reliance on traditional usage of biomass because on average only approx. 9,8% of the final energy consumed originates in modern renewable sources.<sup>128</sup> To successfully implement SDG 7's targets 7.1 and 7.2 and ensure access to affordable, reliable, and current energy services by 2030 and increase the share of renewable energy sources,<sup>129</sup> modern renewable energy has emerged. Developing countries take part in this ongoing transition. UNCTAD defines contemporary energy sources as improved and advanced in mainstream renewable energy sources (solar, wind, biomass, hydro and geothermal energy) such as photovoltaic advancement of solar energy, new wind power technologies incl. floating offshore turbines, low-carbon hydrogen, microbial fuel cells etc.,<sup>130</sup> EMDEs have been surpassing developed economies since 2015 in their total investment in modern renewable energy. As a result, the electricity mix has become more diversified in 2019.<sup>131</sup>

The use of modern energy significantly differs among EMDEs. Firstly, there are cases of China, Brazil and India, countries positioned among the top 5 largest renewable electricity markets globally and accounted for in 2018 approx. 40% of global renewable capacity and 70% of the renewable power among EMDEs.<sup>132</sup> Out of global clean energy investment in 2019, they have received a share of 65%.<sup>133</sup> Secondly, there are developing countries that have successfully diversified their electricity mix, produced more than two-thirds of their energy from clean energy sources and decreased the carbon

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<sup>126</sup> IEA (2021a). *Financing Clean Energy Transitions in Emerging and Developing Economies*. [online] Available at: [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf)

<sup>127</sup> IEA, Renewables Information: Overview, 2019.

<sup>128</sup> Vanegas Cantarero, M.M. (2020). Of renewable energy, energy democracy, and sustainable development: A roadmap to accelerate the energy transition in developing countries. *Energy Research & Social Science*, [online] 70. Available at: <https://www.sciencedirect.com/science/article/pii/S2214629620302917#b0130>

<sup>129</sup> UN-Energy, Energy: A Brief Discussion on Goals, Targets and Indicators, 2014, p. 3

<sup>130</sup> [https://unctad.org/system/files/official-document/dtlstict2019d2\\_en.pdf](https://unctad.org/system/files/official-document/dtlstict2019d2_en.pdf) p.7

<sup>131</sup> Vanegas Cantarero, M.M. (2020). Of renewable energy, energy democracy, and sustainable development: A roadmap to accelerate the energy transition in developing countries. *Energy Research & Social Science*, [online] 70. Available at: <https://www.sciencedirect.com/science/article/pii/S2214629620302917#b0130>

<sup>132</sup> IRENA (2020). *Renewable Electricity Capacity and Generation Statistics*. [online] Available at: <https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Statistics-Time-Series>.

<sup>133</sup> Frankfurt School-UNEP Centre/BNEF, Global Trends in Renewable Energy Investment, 2020.

footprint of their power system – Albania, Nepal, Paraguay, Ethiopia, Costa Rica, Namibia, Tajikistan, Kyrgyzstan, and Togo<sup>134</sup> as mentioned by Venegas Cantanero (2020). Lastly, there are developing countries, in particular in Africa, with the small size of their electricity networks also implying limited access to electricity, e.g. less than one-fourth of the population in Burundi, Chad, Malawi, Democratic Republic of Congo, Niger, Liberia, Uganda, Sierra Leone, or Madagascar had access to any electricity in 2017.<sup>135</sup>

Transformation of the power sector and boosting efficient use of renewable energy are essential drivers of sustainable development. Rising living standards and economic growth in EMDEs is increasingly powered by electricity, and its consumption continually grows at the rate of approx. 3-4% annually – more than twice the growth rate in developed economies.<sup>136</sup> However, based on studies of Seetharaman et al. (2019), Venegas Cantanero (2020) and UNCTAD (2019), there are four leading groups of factors affecting clean energy penetration and deployment in EMDEs negatively – barriers of technological maturity and existing electricity network, economic and regulatory barriers.<sup>137,138,139</sup>

<p><u>Barriers of technological maturity</u></p> <ul style="list-style-type: none"> <li>• Lack of research and development capability, “brain drain”</li> <li>• Inefficient knowledge of operations and maintenance</li> <li>• Limited availability of infrastructure and facilities</li> </ul>	<p><u>Regulatory barriers</u></p> <ul style="list-style-type: none"> <li>• Ineffective policies by the government</li> <li>• Lack of fiscal incentives, grants, and subsidies</li> <li>• Weak democracy and low citizen participation</li> </ul>
<p><u>Economic barriers</u></p> <ul style="list-style-type: none"> <li>• High reliance on coal-fired power and influence of fossil fuel corporations</li> <li>• High initial cost</li> <li>• Low access to financing</li> </ul>	<p><u>Existing electricity network barriers</u></p> <ul style="list-style-type: none"> <li>• Integration issue into electricity systems</li> <li>• Energy poverty – lack of reliable access to energy</li> </ul>

<sup>134</sup> Vanegas Cantarero, M.M. (2020). Of renewable energy, energy democracy, and sustainable development: A roadmap to accelerate the energy transition in developing countries. *Energy Research & Social Science*, [online] 70. Available at: <https://www.sciencedirect.com/science/article/pii/S2214629620302917#b0130>

<sup>135</sup> Vanegas Cantarero, M.M. (2020). Of renewable energy, energy democracy, and sustainable development: A roadmap to accelerate the energy transition in developing countries. *Energy Research & Social Science*, [online] 70. Available at: <https://www.sciencedirect.com/science/article/pii/S2214629620302917#b0130>

<sup>136</sup> IEA (2021a). *Financing Clean Energy Transitions in Emerging and Developing Economies*. [online] Available at: [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf) pp.101

<sup>137</sup> Seetharaman, Moorthy, K., Patwa, N., Saravanan and Gupta, Y. (2019). Breaking barriers in deployment of renewable energy. *Heliyon*, [online] 5(1). Available at: <https://www.sciencedirect.com/science/article/pii/S2405844018354240>

<sup>138</sup> Vanegas Cantarero, M.M. (2020). Of renewable energy, energy democracy, and sustainable development: A roadmap to accelerate the energy transition in developing countries. *Energy Research & Social Science*, [online] 70. Available at: <https://www.sciencedirect.com/science/article/pii/S2214629620302917#b0130>

<sup>139</sup> [https://unctad.org/system/files/official-document/dtlstict2019d2\\_en.pdf](https://unctad.org/system/files/official-document/dtlstict2019d2_en.pdf) pp.5

*Scheme 1* Technological and non-technological barriers and challenges in clean energy deployment in developing countries

## 4.9. Financing Energy Transition

The cost and accessibility of capital for investing in the clean energy transition will determine the overall ability of EMDEs to meet SDGs in the upcoming future and grow sustainably. The public financing required to meet SDG 7 is estimated by the United Nations Development Programme (UNDP) Policy Brief at \$1.3 to 1.4 trillion per year until 2030.<sup>140</sup> The *Global Trends in Renewable Energy Investment 2020* report found that renewable energy capacity investment in developing countries was \$152.2 billion in 2019, equal to 54% of the total global investment that outweighed EMDEs for the 5<sup>th</sup> year running.<sup>141</sup> It is essential to mention significant differences regarding the level of individual economies. Therefore, a different preference of the world's investors to allocate capital causes the unequal spread of investment. While investment fell back in China (8% drop) and India (14% drop), renewables increased significantly in Brazil, Chile, Taiwan and the United Arab Emirates.<sup>142</sup>

While countries are mainly responsible for their economic and social development, they need to have an enabling economic environment. Sources of investment for clean energy technologies and projects include commercial banks, multilateral development banks, companies and other private investors. Increasing commitments is possible through public-private partnerships (PPPs) that play an essential role in financing clean energy. While energy investments heavily rely on public sources of finance, over 70% of clean energy spending comes from private capital.<sup>143</sup> To ensure that PPPs are successful, IEA recommended that the Member States implement good institutional and legislative policies and enable creating mutually beneficial mechanisms also for the private sector.<sup>144</sup> The use of economic instruments such as energy and fuel subsidy reform or carbon pricing also plays a vital role in achieving the financing needs for SDG 7 and the global transition to a low-carbon economy.

## 4.10. Conclusion

The pressing need to limit the temperature increase to 1.5°C while addressing post-COVID recovery creates new economic opportunities in the clean energy transition. Energy has a cross-cutting input into many segments of the economy and is a powerful engine of growth and development

<sup>140</sup> UN Development Programme (2019). *Policy Brief #3: Financing SDG 7*. [online] Available at:

[https://sustainabledevelopment.un.org/content/documents/24090pb3\\_cover.pdf](https://sustainabledevelopment.un.org/content/documents/24090pb3_cover.pdf)

<sup>141</sup> FS-UNEP Collaborating Centre (2020). *Global Trends in Renewable Energy Investment 2020*. [online] Available at: [https://www.fs-unep-centre.org/wp-content/uploads/2020/06/GTR\\_2020.pdf](https://www.fs-unep-centre.org/wp-content/uploads/2020/06/GTR_2020.pdf) pp.42

<sup>142</sup> FS-UNEP Collaborating Centre (2020). *Global Trends in Renewable Energy Investment 2020*. [online] Available at: [https://www.fs-unep-centre.org/wp-content/uploads/2020/06/GTR\\_2020.pdf](https://www.fs-unep-centre.org/wp-content/uploads/2020/06/GTR_2020.pdf) pp.42

<sup>143</sup> IEA (2021a). *Financing Clean Energy Transitions in Emerging and Developing Economies*. [online] Available at: [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf) pp.50

<sup>144</sup> IEA (2011). *Joint Public-Private Approaches for Energy Efficiency Finance*. pp.14–15

worldwide. However, global energy demand is expected to rise by 41% by 2035, with around 95% of the growth will be accounted for in EMDEs. This increase cannot be met permanently by fossil fuels alone, so renewables must be deployed. The economies' size and energy systems create an opportunity to implement transformation faster and more manageable than developed countries. Sustainable energy sources play a crucial role in all three dimensions of sustainable growth and may contribute to ending poverty, tackling environmental issues and improving economic outcomes.

As the platform for integration and action on sustainable development agenda, ECOSOC acknowledges the importance of empowerment of developing countries through a rapid expansion of affordable, sustainable energy and the need for collaborative efforts and global synergies, especially in the light of sustainable development and resilient recovery from the COVID-19 pandemic. The post-pandemic recovery efforts bring a unique opportunity to remove fossil fuel subsidies and decrease coal dependency with clean energy transition strategies. This creates sustaining economic opportunities for EMDEs to achieve climate objectives, create new jobs, reduce energy demand growth, and bring new business models.

However, the importance of development cooperation is inevitable, mainly to tackle challenges related to the financing of sustainable development and barriers to clean energy deployment in EMDEs such as technological maturity, regulation, economic barriers. While countries are mainly responsible for their economic and social development, they need to have an enabling economic environment. Sources of investment for clean energy technologies and projects include commercial banks, multilateral development banks, companies and other private investors. At the same time, their commitment can be increased through partnerships such as public-private partnerships and implementation of good institutional and legislative policies on a local, regional and global level.

Strengthening local and medium-sized enterprises, harmonising framework and enabling access to capital via financial instruments are examples of how to approach seizing economic opportunities that are coming with clean energy. Solving the challenge of avoiding a high-carbon path also depends on varied circumstances and concerns in individual EMDEs that are pretty different from those prevailing in developed economies. Sustainable growth will require giant leaps in technological development and can only be achieved by global cooperation.

#### **4.11. Points of Discussion**

The international community must collaborate to accelerate technological investment and adopt measures to support the clean energy transition in electricity supply and demand, aiming to achieve SDGs. Delegates can consider the following:

- What more can be done at the global level to support the clean energy transition efforts of EMDEs and create economic opportunities?
- What can the international community do to accelerate clean energy investment inflows into EMDEs?

- How can be common risks and barriers of investing in EMDEs overcome (e.g. policy/regulations, market and currency stability, infrastructure)?
- What can the international community do to foster science, innovation and technology in the clean energy transition?
- How can the international community contribute towards overcoming technological and non-technological barriers to clean energy deployment to attract SMEs, multinational corporations and banks?
- How can Member States incorporate effectively sustainable energy into COVID-19 economic recovery packages?
- How can ECOSOC support the process of clean energy transition and take a more significant role in implementing SDG 7?

#### 4.12. Further Readings

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