Economic and Social Commission for Asia and the Pacific
Tenth Asia-Pacific Forum on Sustainable Development
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Item 2 of the provisional agenda*

Accelerating the recovery from the coronavirus disease (COVID-19) pandemic and the full implementation of the 2030 Agenda for Sustainable Development in Asia and the Pacific

Delivering on the Sustainable Development Goals through the energy, food and finance nexus

Note by the secretariat

Summary

The convergence of multiple global crises has further derailed the Asia-Pacific region’s efforts to achieve the Sustainable Development Goals by 2030. The war in Ukraine has compounded the impact of the coronavirus disease (COVID-19) pandemic, the increasingly severe climate change crisis and countries’ underlying structural challenges on the region’s economies and societies, exacerbating the already substantial challenge of meeting the Goals. It has also raised food and energy prices and the cost of living as a whole. Governments that are still recovering from the pandemic have had to subsidize the poorest and most vulnerable to ensure their energy and food security, which has resulted in those Governments facing further budgetary pressures.

The present document contains an analysis of the impacts of these three interconnected crises on the energy, food and finance sectors in the Asia-Pacific region. In the analysis, consideration is given to the ways in which the linkages between the sectors have exacerbated these impacts, and the implications for the population and the Goals are examined. The document also includes a review of the opportunities to transform the energy and food sectors in a green and inclusive way to improve resilience to future shocks. Opportunities to exploit synergies across the energy, food and finance nexus are also highlighted. These opportunities will require the strengthening of multi-stakeholder partnerships; the building of agile, dynamic institutions that can more effectively weather the impacts of global shocks; investments in and the embracing of innovation to facilitate transformation of energy and food systems; and the aligning finance with and mobilizing it for the Goals related to energy and food.

Member States and other stakeholders may wish to review the document; share their perspectives on opportunities to achieve the Goals through the energy, food and finance nexus; and identify opportunities for regional collaboration to transform the energy, food and finance sectors, with a view to positioning the region for a strong recovery and an enduring resilience that leaves no one behind.
I. Introduction

1. The convergence of multiple global crises has further derailed efforts to achieve the Sustainable Development Goals by 2030. The war in Ukraine has caused enormous disruption to the highly interlinked global energy and food markets and driven the prices of some commodities to historically high levels. The impacts are being felt across the Asia-Pacific region and around the world, especially among vulnerable groups. Compounded by the fragile global economy resulting from the coronavirus disease (COVID-19) pandemic, and against the backdrop of the increasingly severe climate crisis and underlying structural weaknesses in many economies in Asia and the Pacific, the latest events have contributed to the worst cost-of-living crisis in a generation, plunged millions more people into poverty and hindered at least a decade of development progress. Even before the war in Ukraine began, the United Nations had observed that the Asia-Pacific region was off course and would need until 2065 to achieve all 17 Goals. The situation is now significantly more challenging.

2. The economic and social consequences of the combination of crises, or polycrisis, have put further pressure on government budgets and have limited the financial resources available to achieve the Goals. Through a complex web of macroeconomic, trade and financial channels, the latest crisis has had a negative impact on economies and put greater pressure on government budgets following the pandemic. The challenges facing net importers of energy and food — i.e. most countries in the region — have been particularly acute. Faced with higher borrowing costs and deteriorating current account balances, while still trying to balance their budgets after the pandemic, Governments have been left with very limited resources to invest in achieving the Goals — even though such investment is needed more than ever. At the same time, many Governments have been using their limited resources to subsidize vulnerable people who are struggling to meet their basic energy and food needs. Although fiscal deficits have, in general, fallen sharply in many economies in 2021 and 2022, they remain above pre-pandemic levels. While fiscal balances in most parts of the region are expected to continue to improve, there are still risks to fiscal balances if the energy and food crisis is prolonged.

3. The enormous disruption to the energy, food and finance systems has served as a reminder of the critical need to transform them to be resilient to future shocks. These three systems have played a central role in transmitting and perpetuating the impacts of the polycrisis. This disruption highlights the strong interlinkages between the systems and illustrates that the existing silo approach to their development is not well-placed to meet the challenges of the future global economy. Transforming these systems in a green and inclusive way to increase their resilience and exploit synergies across the energy, food and finance nexus can make a significant contribution to achieving the Goals.

4. The present document includes a description of the impact of the polycrisis, which has resulted in a reversal of the progress made through years of investment to reduce hunger, provide access to energy and achieve the Goals. It contains an examination of the opportunities for recovery at the nexus of these sectors. The document also includes an exploration of approaches that are aligned with the Goals and that could transform the sectors to support a green and inclusive transition that builds resilience to future shocks while leaving no one behind. The analysis and policy recommendations contained

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herein serve as an input to the Tenth Asia-Pacific Forum on Sustainable Development, the outcomes of which will inform the 2023 high-level political forum on sustainable development. The thematic focus of the Tenth Forum will be on accelerating the recovery from COVID-19 and the full implementation of the 2030 Agenda for Sustainable Development at all levels.

II. New shocks and stresses in the energy, food and finance sectors

A. Impact of the polycrisis on the energy, food and finance sectors and on the people and economies of Asia and the Pacific

5. The convergence of multiple global crises has threatened energy and food security and plunged millions of people in the region into poverty. The COVID-19 pandemic, the war in Ukraine and the increasingly frequent and severe climatic events have produced individual and combined effects that have further undermined the region’s ability to meet the Goals. The polycrisis has resulted in a reversal of the progress made through years of investment to reduce hunger, provide access to energy and achieve the Goals. Floods and other climate change-induced natural disasters have destroyed agricultural productivity and livelihoods, while the COVID-19 pandemic and the war in Ukraine have depressed public finances; disrupted supply chains; pushed up key commodity prices and inflation; and created uncertainty among consumers and investors. Governments that were already under substantial budgetary pressure following the pandemic are now, following the impacts of the war in Ukraine, struggling to ensure that people can meet their basic energy and food needs. In the region, 38 countries are severely exposed to at least one of the war’s three global channels: rising food prices, rising energy prices and tightening fiscal conditions. Of these countries, 25 are severely or significantly exposed to all three channels simultaneously. In its preliminary analysis, the Economic and Social Commission for Asia and the Pacific suggests that the war in Ukraine has had notable adverse macroeconomic impacts on the Asia-Pacific region and that up to 2.7 million people in the region could fall into poverty because of higher oil prices.2

6. Increases in the prices of vital commodities, including oil and gas, wheat and sunflower oil have created the greatest cost-of-living crisis in a generation. Ukraine is the world’s largest producer of sunflower oil, usually accounting for half of global exports. In addition, the Russian Federation and Ukraine together accounted for almost 30 per cent of wheat exports in 2020. The Russian Federation also plays a major role in energy production, as the second-largest producer of gas and third-largest producer of oil. Shortages of these and other commodities owing to the war in Ukraine and subsequent sanctions have caused their prices on the international market to soar. The FAO food price index reached a record high in March 2022, and the 2022 price of Brent crude oil was expected to exceed $100 per barrel. While energy and food prices stabilized in the second half of 2022, they remained above their usual levels. Food prices in South Asia increased by more than 20 per cent between January and September 2022, when compared with the same months in 2021. North and Central Asia has experienced high food and energy price inflation, causing average annualized headline inflation to increase to double digits in several countries, while East and North-East Asia has not suffered to the same extent. In South-East Asia, the surge in the price of food, fuel and other goods

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has resulted in a high rate of inflation in the subregion’s least developed countries.

7. High inflation has eroded living standards by reducing real wages. Although average real wage growth remained positive in the Asia-Pacific region in 2022, it was at levels below its historical average, slowing from 3.5 per cent in 2021 to 1.3 per cent in the first half of 2022.

8. The indirect impacts of higher energy prices on food production, processing and distribution have compounded the challenges posed by increases in food prices. The price of nitrogen fertilizers, a core input to agriculture, increased by over 300 per cent between 2020 and the first half of 2022. The price of natural gas, one of the main inputs in fertilizer production, also increased. In addition, trade restrictions and production shortages had an effect, given the fact that Belarus and the Russian Federation together export, on average, around 20 per cent of the world’s fertilizers. Higher oil prices have raised international shipping and road transport costs, with knock-on effects on agriculture and all other industries. The higher price of electricity, used for processing and storing food, has also contributed to rising food prices.

9. The cost-of-living crisis has affected countries and the people living in them differently. Countries that are relatively dependent on imported commodities, especially those from the Russian Federation and Ukraine, have been affected more severely. In the Asia-Pacific region, such countries include Nepal, Pakistan and Palau, owing to their dependence on imported fossil fuels. The Lao People’s Democratic Republic and several countries in North and Central Asia have also been affected since they rely on the Russian Federation and Ukraine to meet more than 50 per cent of their wheat demand. Meanwhile, the impact of the various crises on inflation in countries that are net energy exporters has generally been less severe. At the household and individual levels, those who have been disproportionately affected include the poorest households, which spend a greater proportion of their income on energy and food; small farmers and owners of informal, micro- and small businesses; and women, older persons, children, persons with disabilities, migrants and other vulnerable persons. Poorer households may face pressure from two sides: a higher-than-average increase in the cost of living and a higher-than-average reduction in income. A much higher proportion of poor households were forced to reduce food consumption, compared with their more affluent neighbours. Examples of the disproportionate impact of the food and energy crisis on women include pregnant women who are unable to afford sufficient nutrition; and households that have to switch from increasingly expensive liquefied petroleum gas for cooking back to fuelwood, which is likely to harm women’s health and requires them to spend time collecting wood.

10. Governments have taken urgent, often costly, steps to lessen the socioeconomic impacts of the crises. During the COVID-19 pandemic, large amounts of public funds were diverted to the health sector and to economic support measures, forcing many Governments to increase their borrowing or cut spending in other areas. To cope with the ongoing energy and food crisis, many Governments in the region have provided temporary subsidies for households and food producers. These subsidies have put even more pressure on government budgets that are still struggling to recover from the impact of the pandemic. Public debt levels in developing countries have increased from 55.7 per cent of gross domestic product between 2019 and 2021 to 65.1 per cent in 2022. These countries are estimated to require $311 billion to service public external debt or about 13.6 per cent of government revenues. Many Governments have also enacted temporary bans on the export of key...
Commodities; however, those bans have imposed economic and social costs. For example, the temporary ban by Indonesia on palm oil exports in 2022 might threaten the livelihoods of farmers, who lost the benefit of selling in overseas markets at higher prices amid a general surge in food and energy prices, while having simultaneously incurred losses from selling at lower prices due to abundant domestic supply.

11. Producer and consumer actions to reduce financial pressures have amplified negative side effects. Many farmers in the region have scaled back their use of fertilizers in response to the high prices. The International Rice Research Institute expects such actions to reduce rice yields by 10 per cent or more and to exacerbate food security concerns. Some Pacific islands have seen a reduction in areas given over to growing crops in response to higher fertilizer prices. In addition, some livestock breeders in the Pacific have reduced stock to deal with increasing costs of feed, and some fisherfolk have started to travel less to save on fuel. These actions may have adverse implications for revenues, food security and livelihoods. Many consumers in the region have reduced their food consumption and/or switched to cheaper and often less nutritious foods, putting their health at risk. Energy consumption has also been affected, with many consumers switching back to cheaper, dirtier cooking fuels and countries generating more electricity from coal rather than gas, which is more expensive.

12. Evidence is emerging that the crises have adversely affected progress towards achieving the Goals, including Goal 2 (Zero hunger) and Goal 7 (Affordable and clean energy). Even before the pandemic, the Asia-Pacific region was not on track to meet any of the 17 Goals by 2030, although there had been some reasonable progress on a few Goals, including Goal 7. It was estimated that the pandemic had pushed an additional 7.8 million people in countries in Asia and the Pacific into extreme poverty by the end of 2021. While it is too soon to properly assess the impact of the war in Ukraine on progress towards the Goals and their targets, the data and information that are available suggest that the Goals will now be even harder to reach. The International Energy Agency estimates that the COVID-19 pandemic and the energy and food crisis have together hindered the ability of 75 million people around the world to pay for an extended bundle of electricity services and have also forced 100 million people to switch from liquefied petroleum gas for cooking to traditional stoves. Many of these people live in the Asia-Pacific region. Meanwhile, in June 2022, two and a half times more people in Asia and the Pacific were acutely food insecure or at high risk of food insecurity than had been in February 2020, prior to the pandemic.

13. The pandemic and the ongoing energy and food crises have widened the financing gap to attain the Goals for many countries. The crises have affected countries’ abilities to meet the Goals both directly, by reducing the affordability of energy and food; and indirectly, by reducing the availability of financing for Goal-related investments. The annual global financing gap for achieving the Goals by 2030 is now estimated at $4.3 trillion. This figure is 70 per cent higher than the 2015 estimate, reflecting a reduction in investments in the Goals owing to climate change, the COVID-19 pandemic and the war in Ukraine. Prior to the COVID-19 pandemic, Indonesia needed an estimated $1.1 trillion in total, up to 2030, to meet the Goals. It now needs $4.7 trillion.
B. Need for change

14. While there is considerable uncertainty over the nature, frequency and location of future climatic, economic and political shocks, one thing is certain: such shocks are inevitable and increasingly interconnected. Several indicators of climate change set new records in 2021. In the past two decades, climate change has manifested itself in over 11,000 extreme weather events that have together caused economic losses worth $2.56 trillion and the loss of nearly 475,000 lives. Three quarters of all people affected by natural disasters worldwide live in Asia and the Pacific, with the average annual economic loss from natural disasters at 2.4 per cent of gross domestic product, a figure that is expected to increase as temperatures continue to rise. In 2022 alone, devastating droughts and/or floods in Afghanistan, China and Pakistan jeopardized food security and other issues pertaining to the Goals, including those related to gender and health. For example, nearly 70 per cent of the 33 million people affected by the floods in Pakistan were women and children. Climate change can also cause conflict by displacing people and creating competition for natural resources. Without substantial progress on climate change mitigation in line with international agreements, such climatic shocks and impacts will only become more frequent and extreme. The international community has recognized the inevitable impacts of climate change, with a decision being taken at the twenty-seventh session of the Conference of the Parties to the United Nations Framework Convention on Climate Change to establish a fund to compensate vulnerable countries for loss and damage caused by climate-induced disasters.

15. Preparing the Asia-Pacific region to weather these storms, both literally and figuratively, will require coordinated transformations of the energy, food and finance systems. The energy and food systems in Asia and the Pacific are not well-positioned to provide reliable, sustainable and affordable supplies of energy and food in the face of major global shocks. The crisis in 2022, which was the fourth global food system crisis in 15 years, has revealed structural weaknesses that need to be addressed. Such weaknesses include an overreliance by many countries on imported fossil fuels; production methods, consumption patterns and subsidy structures that engender inefficient use of agricultural inputs and energy; and insufficient understanding of the interlinkages between energy and food. Addressing these weaknesses can facilitate green and inclusive transformations of the sectors to improve resilience, mitigate climate change and deliver employment and economic benefits. To enable these transformations, the finance sector will itself need to be transformed by scaling up the use of new financing sources and models and by more effectively channelling resources to the sustainable energy and food sectors. The three sectoral transformations must be closely coordinated to minimize conflicts between sectors and exploit synergies across the energy, food and finance nexus.

III. Energy, food and finance strategies and solutions for the Sustainable Development Goals

16. The polycrisis has highlighted the need for new models of energy and food production that can consistently, sustainably and affordably meet the energy and food needs of all people in Asia and the Pacific in an uncertain and potentially volatile future world. In the present section, two key pathways to these new models will be discussed. One involves diversifying the types and geographical sources of energy and food; the other entails using land, water, energy and other resources more efficiently to produce the same energy and food outputs. Many actions in these areas are already under way, such as
increasing electricity-generation capacity based on renewable energy, and improving agricultural efficiency. However, they are not progressing quickly enough to meet the Goals by 2030. In order to do so, Governments and other stakeholders need:

(a) To accelerate existing efforts to implement technical solutions, supported by funding, necessary policy and regulatory frameworks, and behavioural interventions;

(b) To place a stronger emphasis on ensuring the more equitable distribution of energy and food so that all people in the region, including the most vulnerable, can meet their needs;

(c) To address a significant gap in efforts to date – that is, the lack of attention paid to the strong interlinkages between the energy, food and finance systems, and the potential conflicts and synergies across the energy, food and finance nexus.

A. Strategies and solutions in the energy, food and finance sectors

1. Ensuring energy is produced and consumed efficiently, sustainably and equitably

17. Significantly scaling up investment in renewable energy can reduce reliance on imported fossil fuels, reduce emissions and, in many cases, save money. The region has vast opportunities to use renewable energy for electricity generation, heating and cooling, industry and transport. Countries can harness emerging technologies, such as clean hydrogen, battery and other energy-storage systems, electric vehicles, smart grids and blockchains (see table 1), to facilitate the switch to renewables and improve the efficiency and sustainability of energy production, distribution and consumption. In parallel with promoting the use of renewables, it is imperative to reduce coal's dominance of the region’s energy sector, including by accelerating the retirement of existing coal-fired power stations and adhering to commitments not to build new ones, both of which will deliver resilience and environmental benefits. However, phasing down coal will require international financial and technical support to ensure that the economic and social impacts on coal-producing communities are effectively managed. Moreover, initiatives to improve energy efficiency, especially in the region’s vast industrial and transport sectors, and to reduce wasteful flaring of gas in producing countries remain critical to increasing resilience to energy price shocks, reducing emissions and delivering monetary savings that can be reinvested in the energy transition. Numerous decentralized technologies that are increasingly cost-effective are available to support the expansion of energy access to unserved or underserved households, farms and other consumers in an inclusive, affordable and sustainable way.
Table 1
Emerging technologies with potential to support transformation of the energy sector

<table>
<thead>
<tr>
<th>Innovation/approach</th>
<th>Description and benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean hydrogen</td>
<td>• Has the potential to replace fossil fuels in heavy industry and transport&lt;br&gt;• Green hydrogen is made using zero- or low-carbon renewable energy resources&lt;br&gt;• Blue hydrogen is made from natural gas. The carbon dioxide generated during the manufacturing process is captured and stored permanently underground. However, the challenge of methane emissions from natural gas use has yet to be addressed</td>
</tr>
<tr>
<td>Battery and other energy storage systems</td>
<td>• Can facilitate the integration of increasing amounts of intermittent renewable generation into the electricity system without compromising reliability</td>
</tr>
<tr>
<td>Electric vehicles</td>
<td>• Can reduce reliance on imported liquid fossil fuels&lt;br&gt;• Can reduce carbon dioxide emissions in electricity systems with high penetration of low-carbon energy sources</td>
</tr>
<tr>
<td>Smart grids (advanced electricity grids)</td>
<td>• Smart grids incorporate various digital controls, automation and new technologies&lt;br&gt;• Can improve the efficiency and reliability of grid operations, help integrate renewable generation and electric vehicles and facilitate energy efficiency and conservation</td>
</tr>
<tr>
<td>Blockchains</td>
<td>• Can facilitate grid management and peer-to-peer electricity trading, among other functions</td>
</tr>
</tbody>
</table>

2. **Ensuring food is produced and consumed efficiently, sustainably and equitably**

18. To ensure food security in an increasingly resource-constrained and volatile world, a greater amount of food must be produced with the same amount of land, water and other inputs. Efficient use of fuel, electricity and fertilizers as agricultural inputs can promote both food and energy security. Several approaches can improve resource efficiency. For example, large-scale drip irrigation is a resource-efficient measure to improve the food system in resource-scarce regions, and agrivoltaics offer potential for land-scarce and sun-drenched areas. Since a few food crops (wheat, rice and maize) account for most of the land under cultivation, diversifying agriculture towards more vegetables, legumes and fruits would benefit both the environment and the people, as these crops provide important nutrients. Where possible, Governments could shift public support away from monocultural production systems while rewarding the multiple positive outcomes of diversified agroecological systems. In addition, reducing food loss and waste in line with
target 12.3 of the Goals, including by improving harvesting and storage methods, would improve resource efficiency; increase food security at a relatively low cost; and yield benefits related to nutrition, methane emissions and livelihoods. Nevertheless, although transforming the food sector to deliver an adequate supply of nutritious food in a sustainable and efficient way is crucial, it is not sufficient to achieve Goal 2. Affordability and distribution challenges often result in insufficient nutritious food reaching those who need it. Wasting and stunting in children pose significant problems in many countries and communities in the region. At the other end of the spectrum, the prevalence of obesity among children and adults is increasing. These problems and discrepancies highlight the inequality of food access and affordability challenges. In order to achieve Goal 2, it is not enough for a country to improve its overall supply of food, such as by increasing agricultural productivity; it must also address existing inequalities in food distribution, access and affordability.

### 3. Unlocking new sources and types of finance to transform the energy and food sectors and support access to energy and food by the most vulnerable

19. Traditional sources of finance – such as taxes, government non-tax revenues, domestic and foreign borrowing, official development assistance and other official flows – will continue to play a major role in financing energy and food sector investments and in progress towards the Goals. Strengthening these sources remains essential, but it will not be enough. Meeting the energy-and food-related Goals in an uncertain world in which government budgets may be under increasing pressure will require the mobilization of substantial amounts of private finance from diverse sources. Types of alternative finance that have the potential to make increasingly important contributions include blended finance, remittances, crowdfunding, green and blue bonds and Islamic financing (see table 2). Innovative financing models including the pay-as-you-go system and mobile banking can facilitate energy access by consumers who cannot afford the upfront costs of solar photovoltaic systems, clean cookstoves and small-scale technologies for food production. Harnessing these models will require addressing the digital divide between young and old, male and female, and rural and urban users. As the global financial system and financial technology continue to grow and change, legal and regulatory reforms in the financial sector should be treated as a continuous process. Governments must provide policy and regulatory environments that permit and incentivize the use of new financial models, and regulate them effectively; address overlapping or contradicting laws and regulations; enhance consumer protection laws; educate consumers about their rights; and close legal loopholes that allow bad practices and enable the commission of crimes in the financial industry. In addition, financial and academic institutions must collaborate to build human capital in the financial sector, including an understanding of the opportunities and risks within, and other characteristics of, the energy and food sectors.

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3 This target seeks to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
Table 2
Alternative financing sources and mechanisms that can help achieve the Sustainable Development Goals

<table>
<thead>
<tr>
<th>Innovation/Approach</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Blended finance</td>
<td>• The use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development</td>
</tr>
<tr>
<td></td>
<td>• Allows organizations with different objectives to invest alongside each other while achieving their own objectives, which can comprise financial return, social impact or a mix of both</td>
</tr>
<tr>
<td>Remittances</td>
<td>• Money sent by migrants to their home countries, usually to support their families</td>
</tr>
<tr>
<td></td>
<td>• Can help cover household living expenses and support small-scale investments, including in rural communities</td>
</tr>
<tr>
<td>Crowdfunding</td>
<td>• Small amounts of capital gathered from a large number of people, via social media and the Internet, to finance a project or business venture</td>
</tr>
<tr>
<td>Green and blue bonds</td>
<td>• Green bonds are debt instruments designed to support objectives or projects that focus on climate change or other environmental concerns</td>
</tr>
<tr>
<td></td>
<td>• Blue bonds support investment in sustainable ocean-related projects</td>
</tr>
<tr>
<td></td>
<td>• Can be issued by Governments, multilateral banks or private parties</td>
</tr>
<tr>
<td>Islamic financing</td>
<td>• Financing instruments that comply with Islamic religious law (sharia)</td>
</tr>
<tr>
<td></td>
<td>• The most common Islamic financing instrument is the sukuk, an Islamic financial certificate similar to a bond, but which provides investors with partial ownership of an issuer’s assets until the date of maturity is reached</td>
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B. Strategies and solutions across the energy-food-finance nexus

1. Balancing the impacts of biofuels production on energy and food security

20. Biofuels are expected to play an increasingly important role in the region. China and Indonesia, among some other Asia-Pacific countries, are already significant biofuel producers, and the region’s demand for biofuels is growing. In 2021, the region accounted for about 20 per cent of global production of biofuels. South-East Asia has considerable resources to produce liquid biofuels sustainably, using biomass feedstocks that would not cause carbon dioxide emissions or interfere with food supply. Maximizing the potential of biofuels as part of a diversified, low-carbon energy mix while minimizing adverse impacts on food security will require strategies that reflect the interlinkages and potential conflicts between the food and energy sectors.
Such conflicts are particularly acute when food and energy markets are under pressure. Biofuels production has opportunity costs: many of the same agricultural commodities that are used to produce biofuels could be consumed as food, or the same land could be used to grow other crops. Policymakers should thus weigh the benefits of using biofuels to mitigate high and/or volatile fossil fuel prices against the risks of high and volatile feedstock prices or crop failure in a world increasingly subject to economic and climatic shocks.

2. Turning agricultural waste into energy

Turning agricultural waste into energy does not involve deliberately using resources that could be used to produce food, nor does it use the food crops themselves. As a result, the use of crop residues as an energy source avoids many of the challenges of biofuel production. The region generates large quantities of residues from rice, wheat, sugar cane and other crops, as well as livestock. A portion of the region’s crop residues is used as animal feed, or for cooking or other purposes. However, much of it is currently burned, with adverse implications for human health, the soil and the air. There is potential to use crop residues to generate electricity through the use of several technologies, from capturing biogas and using it in turbines, to simpler options, including the co-firing of residues in existing thermal plants. As a by-product, the ability to produce energy will depend on the level of agricultural production; hence, encouraging energy production strengthens the link between the energy and food sectors. Other challenges are logistical, such as developing a reliable supply chain and storing residues that are produced infrequently (i.e. seasonally). To exploit the potential, each country needs to assess its bioenergy potential and develop a tailored, specific bioenergy strategy and plan, complete with an assessment of the economic, environmental and social benefits of the plan, including various scenarios.

3. Expanding the use of renewable energy in food production and processing

Energy helps to increase agricultural yields at every stage of the value chain. From primary production through post-harvest processing, storage, transport and the retail stage, energy improves value addition, reduces losses and improves market access. The use of agroprocessing based on renewable energy presents an enormous opportunity to exploit the synergies between the energy and food sectors and turn the vicious circles being experienced during the existing crisis into virtuous circles. Technologies already exist to enable the cost-effective use of renewable energy in food production on the farm and in post-harvest handling and processing. Examples are solar-assisted irrigation; the use of green cooling to reduce food loss and maintain food standards, thereby generating higher incomes for farmers; solar drying; and agrivoltaics. When compared with their traditional diesel-powered equivalents, electric farm vehicles, machinery and equipment also offer the potential to reshape the agricultural industry by avoiding carbon emissions, creating less noise, increasing safety and efficiency, lowering costs in the long run and promoting greener farming. At the consumption end of the food value chain, cookstoves that are solar-powered or that use agricultural waste or biogas are often cheaper than traditional cookstoves and can improve health, environmental and gender outcomes. Expanding the use of such technologies in the region will need to be part of a whole value-chain approach, complemented by financing models that allow vulnerable households and small-scale farmers to access and pay for the technologies and by capacity-building to enable effective installation, operation and maintenance.
4. Using fertilizers more efficiently and sustainably

23. The energy and food sectors are intimately connected through the agricultural sector’s reliance on fertilizers made from natural gas. High gas prices can push up the price of fertilizer, resulting in higher food prices; they can also encourage farmers to scale down their usage, which reduces yields. At the same time, fertilizers remain critical to food security, so fertilizer use may need to be scaled up to deliver the yields needed to meet Goal 2. A key strategy to weaken the link between food security and volatile energy markets is improving the efficiency of fertilizer use in line with the Colombo Declaration on Sustainable Nitrogen Management. A large proportion of the fertilizers used on farms in the region is currently wasted, undermining food security. Addressing this issue will enable an increase in agricultural yields without a corresponding increase in vulnerability to high energy prices. Possible actions to improve the efficiency of fertilizer use include reforming subsidies; setting legally enforceable targets for fertilizer use; investing in technologies that help increase output per unit of fertilizer used; and educating farmers on good practices for fertilizer management. Alongside efficiency, there is also a need for the responsible, sustainable use of fertilizers. Farming has long been dominated by the use of synthetic fertilizers, and their overuse is resulting in excessive emissions of nitrous oxide, which pollute the land, the water and the environment and are harmful to biodiversity. Despite the significant advantages of synthetic fertilizers in supporting the growing demand for food resulting from rapid population growth, it is critical for long-term sustainability to shift gradually from synthetic to organic fertilizers and/or to explore alternative fertilizers that cause minimal harm to the environment.

5. Rationalizing inefficient subsidies to unlock finance to transform the energy and food systems in a green, inclusive and efficient way

24. Many countries in the region provide costly and inequitable fossil fuel subsidies that incentivize wasteful consumption and are often regressive. Globally, the value of fossil fuel subsidies is greater than the investment needed to reach net-zero emissions by 2050. In 2020, countries in East Asia, the Pacific and South Asia provided explicit fossil fuel subsidies worth $83.7 billion and implicit ones worth over $3 trillion. The global support provided to agricultural producers is almost $540 billion per year; over two thirds of that amount is considered to contribute to price distortions and to actions that are environmentally damaging. Fertilizer subsidies in Asia have encouraged overuse, with their fiscal and environmental costs generally outweighing the benefits. Rationalizing agricultural and fossil fuel subsidies, in line with Goal targets 2.b and 12.4, can incentivize more sustainable production methods and consumption patterns, reduce emissions and create fiscal space for investment in more effective ways to support energy and food security for those who need it most. However, experience of previous reforms of fossil fuel subsidies highlights the importance of a gradual, collaborative approach, as scaling back existing subsidies while energy prices are high could pose risks of social unrest. Therefore, this is a long-term objective.
IV. Reclaiming the decade of action on the Sustainable Development Goals

25. The present section includes a discussion on four cross-cutting policy areas that have the potential to reinvigorate progress towards the energy and food-related Goals in Asia and the Pacific in the face of global shocks. Contained in the discussion are an analysis of the channels through which the polycrisis has affected the energy, food and finance sectors; strategies to transform those sectors to be more resilient, green and inclusive; and opportunities to capitalize on synergies across the energy, food and finance nexus. These policy areas are intended to be relevant to all member States, but actions in each area need to be tailored to reflect specific country and sector contexts.

A. Strengthening multi-stakeholder partnerships across the energy, food and finance nexus

26. Responding to challenges that are cross-border in nature requires cross-border solutions. Regional and global economic cooperation and integration provide an invaluable opportunity to generate economic, social and environmental benefits for the people of the region. At a time when countries in the region are susceptible to the adverse impacts of shocks including climate change, the COVID-19 pandemic and the war in Ukraine, and given that such shocks are rarely confined to an individual country or sector, strengthening multilateral and cross-sectoral partnerships is even more critical and urgent. It is essential that Governments, participants in the energy, food and finance sectors and other stakeholders in the Asia-Pacific region, down to the community level, work together to design and implement collective solutions to common challenges and to achieve the Goals by transforming the region’s energy, food and finance sectors and capitalizing on the energy, food and finance nexus.

27. Proposed priorities for action in this area include:

(a) Strengthening and actively participating in the Global Crisis Response Group on Food, Energy and Finance and existing multilateral partnerships that focus on topics including mitigating climate change, phasing down the use of coal and reducing gas flaring. Member States may wish to create new partnerships to lead the region’s efforts to integrate policymaking across the energy, food and finance nexus and transform the energy, food and finance systems to build resilience to shocks. Such partnerships can play key roles in facilitating the sharing of ideas and experiences, raising awareness and garnering policy and financial commitments;

(b) Engaging stakeholders across the energy, food and finance nexus to carry out cross-disciplinary modelling and analysis and develop cross-cutting strategies that exploit synergies between the sectors, while acknowledging potential conflicts and taking a broader view of potential impacts;

(c) Enhancing partnerships with communities to harness and apply local knowledge in the design of innovative, small-scale interventions, tailored to local conditions, and to implement more effective solutions to energy and food security that prioritize the needs and acknowledge the realities of the most vulnerable people.
**B. Building agile, dynamic institutions**

28. Traditional approaches to governance and policymaking are not well-suited to today’s uncertain world. In order to respond to increasingly frequent shocks and achieve the Goals in a potentially volatile future world, it will be necessary for Governments, energy and food companies, and other institutions to take a new approach. They may wish to consider the so-called “triple A” (anticipatory, agile and adaptive) governance approach, which is designed to be more people- and outcome-focused, inclusive, flexible and innovative than traditional approaches. The approach can be tailored to address the specific challenges posed by the existing and expected future contexts, and it can enable rapid, effective crisis responses and a redirection of strategies as circumstances change. Implementing this new approach involves reviewing and, if necessary, implementing significant changes to institutional structures, systems, processes and cultures that are aimed at improving the ability of institutions to implement green and inclusive transitions and operate effectively in the face of global shocks.

29. Proposed priorities for action in this area include:

   (a) Adopting data-driven foresight approaches to risk management and intervention design, including by carrying out in-depth assessments of the impact of the polycrisis on the region’s energy and food sectors and on the Goals, and by developing more effective ways to gather extensive, recent and reliable data on the informal sector and on rural areas that provide livelihoods and homes to the most vulnerable people;

   (b) Enhancing approaches to policy evaluation to reflect a multitude of possible future scenarios in the energy, food and finance sectors and in the global economy, and to inform the design of “no regrets” actions that are worthwhile regardless of which scenario prevails;

   (c) Building adaptive social protection systems that improve the ability of vulnerable households to plan for, cope with and adapt to energy- and food-related shocks.

**C. Investing in and embracing innovation**

30. Countries should take advantage of new technologies, processes, financial models, and approaches to facilitate diversification and make more efficient use of natural resources in the energy and food sectors and to exploit the energy and food nexus. Technological developments have rapidly reduced the costs of alternative energy technologies, and promising new technologies are continually emerging. Mobile applications and mobile banking will play critical roles in reaching the most vulnerable people. Transitioning to more efficient and sustainable energy and food systems will require changing ingrained production methods and consumption patterns. The role that behavioural science can play in catalysing such changes is increasingly being recognized. Innovative interventions informed by behavioural science can help overcome barriers that prevent economic actors from producing and consuming energy and food more efficiently and sustainably. Engaging actively with regional and international partnerships on research, innovation and the transfer and commercialization of technologies will allow countries to access the latest innovations and capitalize on the region’s strong potential in the production of emerging green technologies. Governments will also need to develop policy and regulatory frameworks that encourage innovation and facilitate the piloting of new technologies, processes and financial models across the region.
31. Proposed priorities for action in this area include:

   (a) Supporting vulnerable households and small-scale farmers in using decentralized, small-scale infrastructure, digital technologies and innovative financial models to access energy and food. Such support may include building awareness and capacity to use such innovations, bridging the digital divide and allowing farmers to access market information;

   (b) Exploiting insights from behavioural science to kick-start the mindset and behavioural changes needed to transition to more sustainable energy and food production methods and consumption patterns.

D. Aligning finance with and mobilizing it for the Sustainable Development Goals related to energy and food

32. Raising and mobilizing new sources of financing for the 2030 Agenda and aligning public and private financial flows with the Goals are huge untapped opportunities. Countries may wish to explore opportunities to expand the use of financing models such as crowdfunding, diaspora bonds and Islamic financing, and to target them to support the necessary interlinked transformations of the region’s energy and food systems.

33. Proposed priorities for action in this area include:

   (a) Encouraging the financial sector to use the Goals as a sustainability framework for investment by designing a common framework, developing regulations and providing incentives that will improve the alignment of private sector incentives and practices with the Goals. Each of these elements should be aimed at covering a wide range of financing institutions and financial models. Regular monitoring needs to be in place to ensure that financial institutions comply with the regulations;

   (b) Extending to local governments the practice of tagging government budgets to specific Goals, in order to promote adherent practices of budget tagging across all levels of government, thereby ensuring optimal policy implementation of the Goals at subnational levels. This initiative will require laws and/or regulations to be established that necessitate both the central and local governments to tag specific spending in their budgets to the Goals, including spending aimed at developing energy and food security;

   (c) Expanding the use of mechanisms to ensure against energy and food market shocks, including hedging against price volatility, developing agriculture insurance markets to protect farmers against the risk of crop failures and facilitating access to disaster risk insurance for the most vulnerable people.

V. Conclusions and recommendations

34. The war in Ukraine, following close on the heels of the COVID-19 pandemic and against the backdrop of ongoing climatic shocks, has created turmoil in the region. The increases in energy and food prices resulting from these compounded crises, along with profound macroeconomic and financial impacts, have further derailed progress towards the Sustainable Development Goals and pushed millions more people in the region into poverty. To achieve the targets of ending hunger and ensuring access to affordable, reliable, sustainable and modern energy for all, member States must take urgent action to address the weaknesses in energy, food and financial systems and improve the resilience of those systems in the face of future shocks.
35. There are two key pathways for transforming the energy and food sectors in a green and inclusive way. One involves diversifying the types and geographical sources of energy and food, for example, by expanding the role of renewable energy and promoting local food production. The other entails improving the efficiency of resource use, for example, by promoting energy efficiency and conservation and by reducing food waste. Countries should not only accelerate efforts in these areas. They should also turn their attention to exploiting synergies across the energy, food and finance nexus, such as those related to biofuels, the use of renewable energy in food production, and food and fossil fuel subsidies.

36. Major cross-cutting opportunities for making progress in these areas include strengthening multi-stakeholder partnerships across the energy, food and finance nexus to facilitate the development of integrated strategies; building agile, dynamic institutions and processes that will render the region and its energy, food and finance systems better placed to manage future shocks; investing in and embracing technological, process and financial innovations that can support green and inclusive transitions in the energy and food sectors; and aligning finance with and mobilizing it for the Goals related to energy and food.

37. Member States, major groups and other stakeholders may wish to take the following actions:

(a) Review the present document with a view to sharing national and stakeholder perspectives on how to achieve the Goals by transforming the energy, food and finance systems and exploiting the synergies of the energy, food and finance nexus;

(b) Discuss the proposed priority policy areas and cross-cutting actions and reflect on opportunities to enable a green and inclusive transition that positions Asia and the Pacific for a strong recovery and enduring resilience that benefits all people in the region.