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Promotion and protection of human rights: human rights questions, including alternative approaches for improving the effective enjoyment of human rights and fundamental freedoms

Extreme poverty and human rights

Note by the Secretary-General

The Secretary-General has the honour to transmit to the General Assembly the report of the Special Rapporteur on extreme poverty and human rights, Olivier De Schutter, in accordance with Human Rights Council resolution [35/19](#).

* [A/75/150](#).



Interim report of the Special rapporteur on extreme poverty and human rights, Olivier De Schutter

The “just transition” in the economic recovery: eradicating poverty within planetary boundaries

Summary

As the world faces an unprecedented economic crisis, Governments have adopted various stimulus plans to speed up the recovery. Growth as usual is not an option, however, taking into account the other crisis: the environmental crisis. The present report examines how the fight against poverty can be combined with the search for a development model that mitigates climate change and halts the erosion of biodiversity. The “just transition” requires that the workers and communities affected by the ecological transformation be protected from its impacts. But the transformation required also needs to open up new opportunities and strengthen the rights of people living in poverty. In specific areas, such as energy, buildings, food or mobility, “triple-dividend” actions can be taken that would reduce the ecological footprint while simultaneously creating employment opportunities for people with low levels of qualification and facilitating access to goods and services essential to the enjoyment of human rights. Such actions should be underpinned by a different development model that places the fight against inequalities above the exclusive focus on economic growth and that combats wasteful consumption rather than seeing it an ingredient of growth. “Building back better” does not mean returning to the status quo, but instead taking public action towards the eradication of poverty within planetary boundaries.

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I. Introduction: building back better

1. The present report is presented as the world faces the worst economic downturn since the Great Depression. As a result of the coronavirus disease (COVID-19) pandemic, it is estimated that 176 million more people will fall in extreme poverty, using a baseline of \$3.20 per day in purchasing power parity. Workers in the informal sector or in precarious forms of employment – totalling 1.6 billion and 0.4 billion people globally, respectively – are particularly at risk, since they have no or only weak access to social protection.¹

2. The report examines which kind of economic recovery we need.² Since the start of the COVID-19 pandemic, Governments have injected at least \$11 trillion into the economy in recovery plans. As they desperately seek to address the crisis, Governments may be tempted to try to rescue the economy at all costs, by providing financial support to companies that risk falling into bankruptcy, then presenting the bill to workers and consumers: any significant increase in sovereign debt due to economic recovery plans could lead to the introduction of austerity measures in the form of massive layoffs and wage cuts in the public sector, cuts in pensions or public services or other regressive measures in the field of social protection.

3. The recipe of austerity failed after the 2008–2009 financial and economic crisis and would fail this time if tried again.³ It would also be an obvious defeat for human rights. In previous reports, the mandate holder has described in detail the need to ensure that the tax structure is sufficiently progressive, in order to accelerate progress towards poverty eradication.⁴ The Committee on Economic, Social and Cultural Rights has also expressed its concern at regressive fiscal reforms, such as shifting the tax burden from corporations to families or increasing value added tax (VAT) rates on essential items.⁵ Making poor people pay for the crisis would be both bad policy and a violation of States' international obligations.

4. Adopting pro-poor macroeconomic and fiscal policies and strengthening social protection are vital responses to the crisis. But the equation we face is more complex. Growth as usual cannot be the answer if we want to stay on track with the long-term objective of building sustainable, resilient and inclusive economies that can effectively eradicate poverty. Scientists warn that biodiversity is declining faster than at any time in human history⁶ and that we must decrease greenhouse gas emissions before 2030 if we are to avoid sliding into chaos.⁷ As the Secretary-General observed in his message on International Mother Earth Day, while the impact of the coronavirus is both immediate and dreadful, there is another deep emergency – the planet's

¹ Daniel Gerszon Mahler and others, "Updated estimates of the impact of COVID-19 on global poverty", World Bank blogs, 8 June 2020.

² In a separate contribution, the mandate holder provides an overview of the poverty impacts of the economic recovery plans adopted.

³ Indeed, even if economic growth were the sole benchmark of a successful macroeconomic policy, no less an authority than the International Monetary Fund (IMF) warned that increasing the tax burden of low-income earners would be counter-productive. See, Jonathan D. Ostry and others, "Redistribution, inequality and growth", IMF Staff Discussion Note, SDN/14/02, (Washington, D.C., IMF, 2014); and Christoph Lakner and others, "How much does reducing inequality matter for global poverty?", Global Poverty Monitoring Technical Note, No. 13 (World Bank, 2020).

⁴ [A/HRC/26/28](#), para. 16; and [A/HRC/29/31](#), para. 53.

⁵ See, for example, [E/C.12/GBR/CO/6](#), para. 16.

⁶ IPBES/7/10/Add.1, p. 3.

⁷ Valérie Masson-Delmotte and others, eds., *Global Warming of 1.5°C: an IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* (Intergovernmental Panel on Climate Change, 2018).

unfolding environmental crisis. We therefore need to “build back better”, relying on the integrated approach at the heart of the 2030 Agenda for Sustainable Development, and to reconcile poverty eradication with planetary boundaries.⁸

5. The present report addresses that equation. There is no trade-off between poverty eradication and accelerating the transformation towards low-carbon and biodiverse societies: it is by combining the two that we can maximize our chances of achieving both.

6. The adoption of economic recovery plans provides a once-in-a-lifetime opportunity to make this transformation happen.⁹ In the twentieth century, it was thought that growth was a precondition for reducing inequality, eradicating poverty and reversing environmental damage. But there is an alternative: a development model that takes seriously the interrelated challenges of poverty eradication and environmental sustainability, by incorporating those concerns into the model of growth itself, rather than seeing them as an afterthought or a hoped-for by-product.

7. For people living in poverty, the search for an alternative development model is not a luxury, but often a matter of life and death. People living in poverty are the first victims of air pollution, landslides and flooding because they are forced to live wherever they can afford housing.¹⁰ As noted in the *Chennai Guidance for the Integration of Biodiversity and Poverty Eradication*,¹¹ their livelihoods are often dependent on ecosystems:¹² globally, 1.2 billion jobs (40 per cent of the world’s total), most of which are in Africa and Asia and the Pacific, rely directly on an effectively managed and sustainable healthy environment.¹³ People living in poverty, including 476 million indigenous peoples,¹⁴ are therefore the most affected by climate disruptions.¹⁵

8. The present report examines how the fight against poverty can be combined with the search for a development model that respects planetary boundaries. An essential understanding of the “just transition” is that the workers and communities affected by the ecological transformation should be protected from its impacts. That alone is insufficient, however. The transition also needs to open up new opportunities and strengthen the rights of people living in poverty. In specific areas, such as energy, buildings, food or mobility, “triple-dividend” actions can be taken that reduce the

⁸ General Assembly resolution 70/1.

⁹ An initial assessment of 300 recovery plans presented in April 2020 found that only 4 per cent of the policies adopted to rescue the economy were “green”, with a potential to contribute to climate change mitigation, whereas 4 per cent were “brown”, contributing to the increase of GHG emissions, and 92 per cent maintained the status quo. See, Cameron Hepburn and others, “Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?”, *Oxford Review of Economic Policy*, accepted manuscript, May 2020.

¹⁰ Robert D. Bullard and others, *Toxic Wastes and Race at Twenty 1987–2007* (Cleveland, Ohio, United Church of Christ, 2007); Rachel Morello-Frosch, Manuel Pastor and James Sadd, “Environmental justice and southern California’s ‘riskscape’: the distribution of air toxics exposures and health risks among diverse communities”, *Urban Affairs Review*, vol. 36, No. 4 (2001); Lisa Schweitzer and Jiangping Zhou, “Neighborhood air quality, respiratory health, and vulnerable populations in compact and sprawled regions”, *Journal of the American Planning Association*, vol. 76, No. 3 (2010), pp. 363–371. In the United Kingdom of Great Britain and Northern Ireland, 10 per cent of the people living in the most deprived regions faced 41 per cent higher levels of concentration of nitrous oxide from industrial activity and transport. See Karen Lucas and others, *Environment and Social Justice: Rapid Research and Evidence Review* (Policy Studies Institute, 2004).

¹¹ UNEP/CBD/COP/DEC/XII/5, annex, para. 1.

¹² Helen Suich, Caroline Howe and Georgina Mace, “Ecosystem services and poverty alleviation: a review of the empirical links”, *Ecosystem Services*, vol. 12 (April 2015), pp. 137–147.

¹³ International Labour Organization (ILO), *World Employment and Social Outlook 2018: Greening with Jobs* (Geneva, 2018), p. 7.

¹⁴ ILO, *Indigenous Peoples and Climate Change: from Victims to Change Agents through Decent Work* (Geneva, 2017).

¹⁵ [A/HRC/41/39](#).

ecological footprint, while simultaneously creating employment opportunities for people with low levels of qualification and facilitating access to goods and services essential to the enjoyment of human rights. Such actions should be underpinned by a different development model that places the fight against inequalities above the exclusive focus on economic growth and that combats wasteful consumption rather than seeing it an ingredient of growth.

II. The social impacts of the transformation towards a low-carbon economy

A. Employment: managing the transition

9. As part of the Paris Agreement, States parties pledged to take into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities. Workers and communities affected by the transformation towards low-carbon and biodiverse societies should be covered not only by social protection, including unemployment benefits,¹⁶ but also by broader investments aimed at creating economic opportunities as well as appropriate training and assistance for job seekers.¹⁷

10. In a scenario consistent with the Paris Agreement, some 24 million new jobs could be created – a number well over the 6 million jobs that might be lost, particularly in the fossil energy sector.¹⁸ In other words, the ecological transition can provide opportunities for job creation. However, because the impacts will vary across sectors and regions, investments in emerging sectors, reskilling¹⁹ and strengthening social dialogue are crucial to ensure that the transition does not have a negative impact on workers,²⁰ in accordance with the 2015 International Labour Organization document, entitled *Guidelines for a just transition towards environmentally sustainable economies and societies for all*, and the 2016 guidelines of the United Nations Framework Convention on Climate Change, entitled *Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs*.²¹ Reskilling programmes are also essential, not least since carbon-intensive industries employ mostly low-skilled workers.²² Cross-country comparisons provide an important source of inspiration as to how reskilling programmes can benefit from alliances between workers, employers and Governments.²³ For instance, in the Philippines, the Green Jobs Act aims to identify skills needs, including

¹⁶ ILO, *World Social Protection Report 2017–19: Universal Social Protection to Achieve the Sustainable Development Goals* (Geneva, 2017), pp. 188–189.

¹⁷ For examples of roles played by the Just Transition Mechanism and the Modernization Fund in the European Union, see European Commission, “Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: a strong social Europe for just transitions”, COM (2020) 14 final, 14 January 2020.

¹⁸ ILO, *World Employment and Social Outlook 2018*, p. 43; Guillermo Montt and others, “Does climate action destroy jobs? An assessment of the employment implications of the 2-degree goal”, *International Labour Review*, vol. 157, No. 4 (December 2018), p. 531.

¹⁹ United Nations Framework Convention on Climate Change, *Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs* (2016), p. 53; ILO, *Skills for a Greener Future: A Global View Based on 32 Country Studies* (Geneva, 2019).

²⁰ Antonio Ferrer Márquez, Begoña María-Tomé Gil and Olga López Maeztu, *The Contribution of Social Dialogue to the 2030 Agenda: Promoting a Just Transition towards Sustainable Economies and Societies for All* (Brussels, International Trade Union Confederation, 2019), p. 10.

²¹ [FCCC/TP/2016/7](#).

²² Kees van der Ree, “Promoting green jobs: decent work in the transition to low-carbon, green economies”, *International Development Policy*, vol. 11 (2019), p. 258.

²³ ILO, *Skills for a Greener Future*.

by maintaining a database of “green” careers and encouraging training by offering fiscal incentives to enterprises.²⁴ In Argentina, the construction workers’ trade union provides workers with training in the renewable energy sector.²⁵ While such measures are important in all regions, they are especially crucial for the Middle East and Africa, which rely most heavily on fossil fuels and where the industries that will grow in the ecological transition are currently less developed.

11. Public employment programmes can provide employment and training opportunities for workers affected by the transition and serve to improve the infrastructure for climate mitigation and resilience. Examples include the Mahatma Gandhi National Rural Employment Guarantee Act in India, the “Working for Water” programme in South Africa and the “Productive Safety Net Programme” in Ethiopia. Similarly, systems that offer payments for ecosystem services as rewards for communities that maintain healthy ecosystems can be part of such “just transition” plans, as illustrated by the *bolsa verde* programme in Brazil.²⁶ It should be ensured however that people living in poverty, such as the landless poor or smallholders, are not excluded from such programmes, which may require formal land titles, a given land size or expensive application processes.²⁷ Programmes financed by Governments and non-profit organizations have been shown to be more pro-poor in that regard than privately funded schemes.²⁸

12. Such reskilling and public employment programmes, as well as systems that offer payments for ecosystem services, should adopt a gender-sensitive approach to ensure that women benefit from the transformation of work in the greening of the economy. Women are particularly vulnerable to job loss, owing to their overrepresentation in occupations most affected by climate shocks and in the informal sector. The transition can also represent an opportunity to close the gender gap, however, by focusing training efforts on women, formalizing jobs occupied by women in the agricultural and forestry sectors or advancing the traditional and local knowledge of indigenous women, which already plays a key role in strengthening climate action.²⁹ Similarly, the inclusion of persons with disabilities in the design and decision-making processes of new low-carbon sectors will lead to increased integration of universal access and universal design principles and contribute to designing inclusive societies for all.³⁰ In that sense too, the greening of the economy is a chance to move towards a more inclusive world of work.

B. Consumption: the role of carbon pricing

13. The debate on the proper role of carbon pricing illustrates how poverty eradication and ecological sustainability can and should be mutually supportive. Carbon pricing is an essential tool to accelerate the shift to a low-carbon economy, by incentivizing the changes needed in investment, production and consumption patterns and encouraging technological innovations that can decrease future

²⁴ ILO, *World Employment and Social Outlook 2018*, p. 132

²⁵ International Trade Union Confederation, “Just transition: where are we now and what’s next? A guide to national policies and international climate governance”, ITUC Climate Justice Frontline Brief, 2017, p. 13.

²⁶ Helmut Schwarzer, Clara van Panhuys and Katharina Diekmann, *Protecting People and the Environment: Lessons Learnt from Brazil’s Bolsa Verde, China, Costa Rica, Ecuador, Mexico, South Africa and 56 Other Experiences*, ESS Working Paper, No. 54 (Geneva, ILO, 2016).

²⁷ David M. Lansing, “Understanding smallholder participation in payments for ecosystem services: the case of Costa Rica”, *Human Ecology*, vol. 45, No. 1 (February 2017).

²⁸ ILO, *World Employment and Social Outlook 2018*, p. 117.

²⁹ ILO, “Gender, labour and a just transition towards environmentally sustainable economies and societies for all”, 7 November 2017.

³⁰ ILO, “Persons with disabilities in a just transition to a low-carbon economy”, October 2019.

abatement costs. A growing number of jurisdictions in recent years have adopted carbon pricing schemes in the form of emissions trading systems or carbon taxes or are considering of such adoption. The European Union introduced an emissions trading system in 2005. Japan and the state of California in the United States of America introduced carbon taxes in 2012. A national emissions trading system was put in place in China in 2017. More recently, a number of provinces and territories in Canada adopted carbon pricing policies, prompted by federal initiatives for an emissions trading system scheme applied to power generation and industrial facilities. Singapore applied a carbon tax to all large emitters in 2019. South Africa put in place an economy-wide carbon tax in 2019 covering 80 per cent of the country's emissions, the first such initiative in Africa. By April 2019, a total of 57 jurisdictions had adopted emissions trading system (28) or carbon taxes (29).³¹

14. Despite that progress, however, only about 11 gigatons of carbon dioxide equivalent (20 per cent of global greenhouse gas emissions) are currently covered by carbon pricing, and only a fraction of existing schemes (about 5 per cent of total emissions) put the price of carbon at an adequate level.³² Although that price increased recently in some emissions trading systems,³³ half of the emissions covered still put the price of a ton of carbon dioxide below \$10. That is insufficient to reach the target set by the Paris Agreement: according to the High-level Commission on Carbon Prices, that figure should be \$40 to \$60 in 2020 and increase to \$50 to \$100 by 2030.³⁴ There are remarkable exceptions: in 2019, for its carbon tax, Sweden priced carbon at \$127 per ton, and the carbon taxes imposed in Liechtenstein and Switzerland approximate \$100 per ton. However, the overall picture is clear: countries are moving in the right direction, but not quite as swiftly as they should.

15. The failure of States to deliver in this area has to do with concerns regarding the affordability of energy for low-income households, the competitiveness of local industry and the profit margins of high-carbon industrial actors, particularly from the fossil energy sector. Political economy obstacles are compounded by the fact that, whereas benefits from reduced greenhouse gas emissions are diffused and spread over the medium and long term, the costs imposed by explicit carbon pricing, as well as the costs of implicit carbon pricing, such as levying taxes or reducing subsidies on fossil fuels, are concentrated on certain actors and are felt in the short term.³⁵

16. Therefore, to overcome resistance to carbon pricing and ensure that strong coalitions emerge in support of such policies, we must emphasize the co-benefits – for instance, the fact that carbon pricing could potentially reduce air pollution – and address any socially regressive impacts. The key issue is how the revenues from carbon pricing – estimated at \$33 billion globally in 2017 and \$40 billion in 2019³⁶ – should be used. Taxing fossil-fuel energy sources while cutting labour taxes can create jobs, increase energy efficiency and incentivize renewables.³⁷ Recycling revenues from carbon pricing into public investments or social programmes that support low-

³¹ World Bank, *State and Trends of Carbon Pricing 2019* (Washington, D.C., 2019), p. 9.

³² Ibid.

³³ Such as in the European Union in 2019, following the introduction of the market stability reserve mechanism.

³⁴ Carbon Pricing Leadership Coalition, *Report of the High-Level Commission on Carbon Prices* (Washington, D.C., World Bank, 2017). This situation led the IMF to push for establishing a voluntary carbon price floor among large emitters. See Christine Lagarde and Vitor Gaspar, "Getting real on meeting Paris climate change commitments", IMF, blog, 3 May 2019.

³⁵ David Klenert and others, "Making carbon pricing work for citizens", *Nature Climate Change*, vol. 8, No. 8 (August 2018).

³⁶ World Bank, *State and Trends of Carbon Pricing 2019*, p. 22.

³⁷ Guillermo Montt, Federico Fraga and Marek Harsdorff, *The Future of Work in a Changing Natural Environment: Climate Change, Degradation and Sustainability* (Geneva, ILO, 2018).

income households, including their access to energy, may make the benefits particularly salient to the population concerned.³⁸

17. Regarding the phasing-out of fossil fuel subsidies, the requirement to link climate mitigation policies to the fight against poverty is already explicit in target 12.C of the Sustainable Development Goals.³⁹ The implementation of fossil fuel subsidy reforms in the Islamic Republic of Iran in 2010 and in Jordan in 2012 illustrate how revenues from reduced subsidies could finance social protection and reduce inequality.⁴⁰ Similar examples exist concerning explicit carbon pricing initiatives. In Sweden, the carbon tax has led to a significant fall in carbon reliance since it was introduced in 1991,⁴¹ in large part because it was combined with the lowering of corporate and labour taxes. As a result, the carbon tax was perceived as an opportunity to focus taxation on “bad goods” rather than on labour or non-polluting sources.⁴²

18. In the Canadian province of Alberta, revenues from the carbon pricing mechanisms, including both an emissions trading system and a carbon tax, served not only to finance mitigation and adaptation projects but also to provide for tax rebates to low- and middle-income households, covering in total 60 per cent of households. In 2019, the rebate was set at \$337 for the first adult, \$169 for the second adult and \$51 per child, while low-income individuals or families were guaranteed a full rebate.⁴³ The carbon tax introduced in British Columbia enjoyed broad political support,⁴⁴ in particular because, like in Sweden, the carbon price was raised gradually from \$26 per ton of carbon dioxide equivalent in 2018 to \$38 per ton in 2021, and was combined with tax credits for households to protect affordability.⁴⁵

19. A clear lesson emerges from these examples. Governments seeking to adopt carbon pricing should ensure political legitimacy by shielding low-income households from regressive impacts through subsidies, grants and tax reforms, or by making public investments, such as in public transportation infrastructure, that facilitate lifestyle changes and make adaptation affordable.⁴⁶ Thus conceived, carbon pricing can contribute to fighting poverty and to reducing inequalities.

III. Triple-dividend actions: reducing poverty within planetary boundaries

20. The compensatory measures outlined above support workers affected by the transformation to a low-carbon economy, or ensure that carbon pricing does not

³⁸ David Kenert and Cameron Hepburn, “Making carbon pricing work for citizens”, Vox and CEPR Policy Portal, 31 July 2018.

³⁹ See <https://sdgs.un.org/goals/goal12>.

⁴⁰ World Bank, *State and Trends of Carbon Pricing 2019*, p. 78. See also Christophe de Gouvello, Dominique Finon and Pierre Guigon, *Reconciling Carbon Pricing and Energy Policies in Developing Countries: Integrating Policies for a Clean Energy Transition* (World Bank, Washington, D.C., 2020).

⁴¹ H. Scharin and J. Wallström, *The Swedish CO₂ tax – an overview*, Anthesis Enveco AB (2018), p. 23. While the economy grew by 69 per cent in the period 1990–2015, the emissions declined by 26 per cent over the same period. This is based, however, on a territorial accounting of emissions.

⁴² Gouvello, Finon and Guigon, *Reconciling Carbon Pricing and Energy Policies*, pp. 121 and 189; and Henrik Hammar and Susanne Åkerfeldt, “CO₂ taxation in Sweden: 20 years of experience and looking ahead”, 2011.

⁴³ World Bank, *State and Trends of Carbon Pricing 2019*, p. 81.

⁴⁴ Opposition to carbon pricing decreased from 60 per cent in 2009 to less than 45 per cent in 2015. See Brian C. Murray and Nicholas Rivers, “British Columbia’s revenue-neutral carbon tax: a review of the latest ‘grand experiment’ in environmental policy”, *Energy Policy*, vol. 86 (November 2015).

⁴⁵ World Bank, *State and Trends of Carbon Pricing 2019*, p. 81.

⁴⁶ Henrik Scharin and Jenny Wallström, “The Swedish CO₂ tax: an overview”, 2018, p. 26.

negatively affect low-income households. However, reconciling poverty eradication with the ecological transformation demands more: it requires that, in the design of the ecological transformation itself, we explore the synergies between that aim and poverty eradication in key sectors, such as energy, buildings, food and mobility. The sections below identify a range of “triple dividend” actions that contribute to the transformation towards low-carbon and biodiverse societies while simultaneously creating employment opportunities for people living in poverty and improving their access to the goods and services essential to the enjoyment of human rights.

A. Energy

21. Energy production and use is the largest source of global greenhouse gas emissions,⁴⁷ and energy-related carbon dioxide emissions have increased by an average of 1.3 per cent annually over the past five years, widening the gap between actual emissions and the reductions required.⁴⁸

22. We have witnessed a gradual shift from fossil energy to renewable sources. Globally, the share of renewables has increased from 16.6 per cent in 2010 to 17.5 per cent in 2016, and the share of modern renewables – excluding the traditional use of biomass, e.g. for cooking – has increased from 8.6 per cent to 10.2 per cent in the same period. But progress is uneven. The use of renewables grew faster with respect to electricity production, driven by the rapid expansion of wind and solar technologies, a development driven by China and its record growth levels in wind capacity and by the rapid expansion of solar capacity in China and the United States. Regarding heat production, while 24 per cent of heat generated in 2016 was sourced from renewable energy, more than half of that total comes from traditional uses of biomass. Finally, in transportation, the share of renewable energy remains extremely low, at 3.3 per cent in 2016,⁴⁹ and its sustainability remains questionable given its reliance on biofuels, known to lead to unsustainable indirect changes in land use.

23. In the future, the most significant potential for the reduction of greenhouse gas emissions resides in electrified forms of transport and heat, combined with increases in renewable power generation. Together, these could represent a reduction of up to 60 per cent of the energy-related carbon dioxide emissions needed to meet the objectives of the Paris Agreement. While this will require significant additional investment (from the anticipated \$95 trillion in the period 2020–2050 to \$110 trillion, or a 16 per cent increase), the savings made by avoiding subsidies and by reduced environmental and health damages are about three to seven times larger than the additional energy system costs. In other words, for each \$1 spent, the payoff would be between \$3 and \$7.⁵⁰

24. The transition to renewables can be designed to contribute to poverty eradication and combat social exclusion. The renewable energy sector is more labour-intensive than the fossil energy sector. Solar electricity, for example, requires 0.87 total person years for each gigawatt-hour of electricity generated, while electricity generated from coal or natural gas requires 0.11 total person years,⁵¹ and net employment gains from a sustainable scenario in the electricity sector are estimated

⁴⁷ International Energy Agency, *World Energy Outlook 2019* (Paris, 2019).

⁴⁸ International Renewable Energy Agency, *Global Energy Transformation: A Road Map to 2050* (Abu Dhabi, 2018), p. 10.

⁴⁹ International Energy Agency and others, *Tracking SDG 7: The Energy Progress Report 2019* (Washington, D.C., World Bank, 2019), pp. 8, 65 and 69.

⁵⁰ International Renewable Energy Agency, *Global Energy Transformation*.

⁵¹ See Max Wei, Shana Patadia and Daniel M. Kammen, “Putting renewables and energy efficiency to work: how many jobs can the clean energy industry generate in the US?”, *Energy Policy*, vol. 38, No. 2 (February 2010).

at some 2.5 million jobs, offsetting the losses of around 400,000 jobs in the fossil fuel-based electricity generation sector.⁵² Training programmes could target in particular low-skilled workers or skilled workers from industries that experience job losses resulting from the energy transition.⁵³ Long-term commitments by States to electrify transport and heating systems, combining taxes and subsidies to favour the switch, can make access to such systems affordable for low-income households. The greening of energy can also lead to provide additional income to rural households, as in “solar double cropping”,⁵⁴ where solar panels are spaced out and placed at a height allowing the land underneath to be used for agricultural purposes while also reducing irrigation needs.⁵⁵

25. Decentralized energy production has particular potential where large-scale on-grid energy production is not cost effective, especially in rural areas. It not only creates employment, but also allows for greater participation of local communities, ensuring that the needs of low-income households are better taken into account.⁵⁶ Such decentralized solutions, while promoted, for instance, in the Least Developed Countries Renewable Energy and Energy Efficiency Initiative for Sustainable Development initiative,⁵⁷ may be adapted to the situation of countries at different levels of development. In France, a network of local organizations was created to foster renewable energies by involving citizens, communities and local businesses.⁵⁸ In India, a social business group distributes solar lights to poor households, allowing them to achieve significant financial savings and move away from highly polluting kerosene-based equipment.⁵⁹

26. Nonetheless, progress remains too slow on energy efficiency, even when assessed against target 7.3 of the Sustainable Development Goals, to achieve a 2.6 per cent rate of improvement. A major accelerator of this transformation would be to ensure that energy efficient solutions are more affordable and thus more widely adopted by low-income households. In the United Kingdom of Great Britain and Northern Ireland, for instance, the Energy Company Obligation programme combats energy poverty and supports energy efficiency by subsidizing insulation projects for vulnerable households, reducing their energy expenses.⁶⁰ In Poland, the “clean air” programme gives low-income households more favourable access than higher-income households to co-financing to invest in improved energy efficiency. Where energy efficient solutions allow savings to be made in the long term but impose higher upfront investment costs, providing consumers with information about energy performance, the use of performance rating tools or “third-party investor” systems – in which an investor meets the initial costs and is compensated by receiving a portion of the savings on the energy bill – may also be explored.

⁵² ILO, *World Employment and Social Outlook 2018*, p. 42.

⁵³ United Nations, Department of Economic and Social Affairs, *Accelerating SDG7 Achievement: Policy Briefs in Support of the First SDG7 Review at the United Nations High-Level Political Forum 2018* (2018), pp. 104–109.

⁵⁴ Christian Dupraz and others, “Combining solar photovoltaic panels and food crops for optimizing land use: towards new agrivoltaic schemes”, *Renewable Energy*, vol. 36, No. 10 (October 2011).

⁵⁵ United Nations Research Institute for Social Development, *Policy Innovations for Transformative Change: Implementing the 2030 Agenda for Sustainable Development* (Geneva, 2016), p. 152.

⁵⁶ Africa-Europe High-Level Platform for Sustainable Energy Investments in Africa, “Scaling-up energy investments in Africa for inclusive and sustainable growth: report of the Africa-Europe High-Level Platform for Sustainable Energy Investments in Africa – executive summary”, 2019, category F.

⁵⁷ Tosi Mpanu Mpanu, Youba Sokona and Yacob Mulugetta, “Clean energy is vital to the COVID-19 response in the world’s poorest countries”, *Climate Home News*, 28 May 2020.

⁵⁸ See www.centralesvillageoises.fr.

⁵⁹ See <https://pollinategroup.org/>.

⁶⁰ International Trade Union Confederation, “The role of social protection in a just transition”, 2018, p. 5.

27. The energy transition outlined above can be an important source of employment creation. Although the energy sector is a relatively small employer,⁶¹ the transition has a strong job-creation potential. Between 2012 and 2016, the number of people directly and indirectly employed in the renewable energy sector (excluding large hydropower) rose from 5.7 million to 8.3 million,⁶² a figure that could increase to 25 million by 2030 with proper policy support. It is also estimated that spending on renewable energy will produce nearly 70 per cent more jobs than spending on fossil fuels, per dollar of expenditure.⁶³ The pursuit of sustainability in the energy sector would create around 18 million more jobs globally by 2030 compared with the business-as-usual approach.⁶⁴ Similarly, measures to improve energy efficiency have high job-creation potential: each \$1 million spent on energy efficiency supports 7.72 jobs, while similar expenditure in the renewable and fossil fuel sectors creates 7.49 and 2.65 jobs, respectively.⁶⁵ Jobs in the renewable energy industry are of better quality than those in the fossil fuel industry,⁶⁶ and offer women better representation.⁶⁷

28. Efforts to move towards sustainable energy should coalesce with efforts to ensure universal access to affordable, reliable and modern energy services, in accordance with target 7.1 of the Sustainable Development Goals. A large number of households still do not have access to affordable modern energy services, especially in rural communities.⁶⁸ In 2017, 840 million people did not have access to electricity (compared with 1.2 billion in 2010),⁶⁹ and 3 billion people still lack access to clean cooking solutions and are exposed to dangerous levels of air pollution, causing millions of deaths each year, mostly among women and children.⁷⁰ People living in the sub-Saharan Africa have the lowest rates of access to affordable modern energy: 573 million people – more than one in two – lack access to electricity.⁷¹ A projected 650 million people are likely to remain without access to electricity by 2030, of whom 9 out of 10 will be in sub-Saharan Africa.⁷²

29. Measures to promote energy efficiency can lower energy bills, thus decreasing the environmental footprint of households while reducing energy poverty. The prices of electricity from renewable sources are now dropping owing to the reduction of production costs of solar and wind power technologies, as well as the economies of scale achieved.⁷³ All 34 countries of the Organization for Economic Cooperation and

⁶¹ ILO, *Working towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy* (Geneva, 2012), p. 75.

⁶² United Nations, Department of Economic and Social Affairs, *Accelerating SDG7 Achievement*, p. 104.

⁶³ Ying Chen, “Renewable energy investment and employment in China”, PERI Working Paper Series, No. 439 (2017).

⁶⁴ ILO, *World Employment and Social Outlook 2018*, p. 43.

⁶⁵ Heidi Garrett-Peltier, “Green versus brown: comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model”, *Economic Modelling*, vol. 61 (February 2017).

⁶⁶ ILO, *Working towards Sustainable Development*, p. 75.

⁶⁷ International Renewable Energy Agency, *Renewable Energy and Jobs: Annual Review 2016* (Abu Dhabi, 2016), p. 13.

⁶⁸ The access rate in rural areas was 79 per cent in 2017, much lower than the urban access rate of 97 per cent. See United Nations, Department of Economic and Social Affairs, *Accelerating SDG7 Achievement*.

⁶⁹ International Energy Agency and others, *Tracking SDG 7*, p. 15.

⁷⁰ United Nations, Department of Economic and Social Affairs, *Accelerating SDG7 Achievement*, p. 79.

⁷¹ Jan Corfee-Morlot and others, *Achieving Clean Energy Access in Sub-Saharan Africa* (Organization for Economic Cooperation and Development (OECD), United Nations Environment Programme (UNEP) and World Bank, 2019).

⁷² International Energy Agency and others, *Tracking SDG 7*, p. 8.

⁷³ International Renewable Energy Agency, “Renewable power generation costs in 2017: key findings and executive summary”, 2018, p. 4; and Cristina Ballester and Dolores Furió, “Effects of renewables on the stylized facts of electricity prices”, *Renewable and Sustainable Energy Reviews*, vol. 52 (December 2015).

Development (OECD) have seen that increasing the share of renewables in the energy mix has a positive impact on the retail price of electricity.⁷⁴ Moreover, social tariff schemes – whereby households that consume the least energy pay the least per kilowatt consumed or even where the minimum amounts of energy per person are guaranteed free of charge – can offset any short-term price impacts of the switch to renewables and protect low-income households from excessive price volatility and energy poverty.

B. Buildings

30. The built environment accounts for 40 per cent of global energy use and 30 per cent of energy-related greenhouse gas emissions.⁷⁵ The sector provides enormous opportunities for energy savings, given the generally poor energy performance of existing buildings and the speed of urbanization in developing countries. With the right policies and technologies, energy consumption in both new and existing buildings could be cut by 30 to 80 per cent.⁷⁶ At the same time, for much of the world's population, access to decent and safe housing remains a dream,⁷⁷ with over 1 billion people living in slums in 2016.⁷⁸ Promoting access to decent, well-insulated and energy-efficient housing can thus serve both to reduce greenhouse gas emissions and energy use and to ensure access to adequate housing, while combating energy poverty.

31. In the building sector, the greatest proportion of energy consumption occurs during the operational phase, primarily through heating, ventilation and air conditioning.⁷⁹ Such energy use is highly dependent on residents' behaviour.⁸⁰ Thus, a crucial role is played by the various tools to influence such behaviour, such as appliance and building energy efficiency labelling, information campaigns, "smart" metering systems or energy training programmes,⁸¹ and by more efficient household appliances and consumer electronics, responsible for over 40 per cent of residential energy demand in wealthy countries.⁸² The greatest potential, however, resides in improving the energy efficiency of buildings: imposing performance-based energy efficiency standards⁸³ can ensure that a building's market value includes its energy performance, thus helping to offset the cost barriers of energy efficiency measures.

32. Smart taxation, loans and subsidy policies can help. While taxing household emissions in order to discourage energy consumption would have regressive impacts

⁷⁴ A.M. Oosthuizen, R. Inglesi-Lotz and G.A. Thopil, "The relationship between renewable energy and retail electricity prices: panel evidence from OECD countries", ESRA Working Paper, No. 797 (2019).

⁷⁵ UNEP, *Buildings and Climate Change: Summary for Decision-Makers* (Paris, 2009).

⁷⁶ UNEP, *Buildings and Climate Change*, p. 9.

⁷⁷ United Nations Human Settlements Programme (UN-Habitat), *Sustainable Housing for Sustainable Cities: A Policy Framework for Developing Countries* (Nairobi, 2012).

⁷⁸ See <https://sustainabledevelopment.un.org/index.html>.

⁷⁹ UN-Habitat, *Global Report on Human Settlements 2011: Cities and Climate Change* (London and Washington, D.C., Earthscan, 2011).

⁸⁰ One study found a variation of 40 per cent in gas consumption and 54 per cent in energy consumption in otherwise identical homes: Mark Levine and others, "Residential and commercial buildings", in Bert Metz and others, eds., *Climate Change 2007: Mitigation – Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, United Kingdom, and New York, Cambridge University Press, 2007).

⁸¹ UNEP, *Buildings and Climate Change*.

⁸² Levine and others, "Residential and commercial buildings".

⁸³ As done in the European Union under directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

and increase energy poverty,⁸⁴ other tools can play a role. Thus, in France, zero-interest “eco-loans” were introduced in 2009 to help owners and landlords to finance energy-saving renovations of properties built before 1990.⁸⁵ However, specific efforts should be made to ensure that such incentives benefit low-income households the most.⁸⁶ Projects such as the “*habiter mieux*” programme in France⁸⁷ or the “Better Energy Warmer Homes” initiative in Ireland provide grants and loans to improve the energy efficiency of low-income households. In Ireland, more than 130,000 homeowners have benefited from the initiative since 2001,⁸⁸ and in France, 83 per cent of participating households reported that they could not have invested in the energy efficiency improvements without the programme.⁸⁹ Other similar programmes fund renovations of inferior-quality buildings purchased by low-income households as emergency housing.⁹⁰

33. Although the operational phase of buildings accounts for over 80 per cent of their greenhouse gas emissions, the remaining 20 per cent includes the “embodied energy consumption” required for the manufacturing and transportation of construction materials, the construction process itself and the maintenance and demolition of buildings. States can regulate the use of materials to avoid deforestation, reduce pollution and toxicity, protect human health and decrease the “embodied” energy of buildings, while encouraging the use of locally available traditional materials, which often have a smaller ecological footprint in comparison with materials such as brick, concrete, aluminium, iron and steel.⁹¹ Recycled construction materials also provide a number of environmental and social advantages, as was the case in the “World Hands Project” in Juarez, Mexico, to build low-cost sustainable homes.⁹² Cities and municipalities can lead by example, by building social housing and publicly owned buildings using low-emissions materials and by incorporating such requirements in public contracts.⁹³

34. Transforming the construction sector in order to mitigate climate change can contribute to reducing poverty. Approximately 111 million people – or 7 per cent of the global workforce – work in the construction sector,⁹⁴ of whom three quarters are

⁸⁴ Arunas Poviliunas and Laima Zalimiene, “Changes in taxation could increase the risk of energy poverty in Lithuania”, ESPN Flash Report, No. 2017/51 (European Commission, 2017); Council of Europe Development Bank, “Energy poverty in Europe: how energy efficiency and renewables can help”, March 2019.

⁸⁵ See www.service-public.fr/particuliers/vosdroits/F19905.

⁸⁶ In Flanders, Belgium, where fiscal incentives encourage individuals to improve the energy efficiency of their homes, an estimated 97 per cent of energy premiums were attributed to non-vulnerable households. See, Belgium, Service de lutte contre la pauvreté, la précarité et l’exclusion sociale, *Durabilité et pauvreté: contribution au débat et à l’action politiques – rapport bisannuel 2018–19* (Brussels, 2019).

⁸⁷ European Union Energy Poverty Observatory, “‘Living Better’ Programme”. See www.energypoverty.eu/measure-policy/living-better-programme (available in French only).

⁸⁸ European Union Energy Poverty Observatory, “Better Energy Warmer Homes”. See www.energypoverty.eu/measure-policy/better-energy-warmer-homes.

⁸⁹ France, Agence Nationale de l’Habitat, “Rénovation énergétique: faites des travaux chez vous grâce au programme – habiter mieux”, 2007.

⁹⁰ See Belgium, Service de lutte contre la pauvreté, la précarité et l’exclusion sociale, *Durabilité et pauvreté*.

⁹¹ UN-Habitat, *Sustainable Housing for Sustainable Cities*; Márton Herczeg and others, *Resource Efficiency in the Building Sector*, final report (Rotterdam, Ecorys and Copenhagen Resource Institute, 2014).

⁹² UN-Habitat, *Sustainable Housing for Sustainable Cities*.

⁹³ Food and Agriculture Organization of the United Nations (FAO), *Promoting Sustainable Building Materials and the Implications on the Use of Wood in Buildings: a Review of Leading Public Policies in Europe and North America* (United Nations publications, Sales No. 16.II.E.10).

⁹⁴ ILO, “Green jobs in construction: small changes – big effect”, in Hans von Rohland, ed., *World of Work*, vol. 70 (December 2010).

in developing countries, where residential construction employs up to 10 per cent of the total labour force.⁹⁵ For low-skilled workers, there are real opportunities in the retrofitting of buildings, as well as in the building of affordable housing.⁹⁶ However, the construction sector remains largely male-dominated, requiring specific efforts to improve the gender balance.⁹⁷ Furthermore, green jobs are not necessarily decent jobs: construction workers are three to four times more likely than other workers to die from accidents at work in the developed world.⁹⁸

35. Improving the energy efficiency of low-income household dwellings helps to reduce energy consumption and thus energy expenditure.⁹⁹ However, most low-income households do not own their home, and since homeowners do not reap the benefits from improved energy performance of the dwellings, they may underinvest in energy measures.¹⁰⁰ Alternatively, if they do invest, they may increase rents to repay the additional investments, making access to housing less affordable for people living in poverty. This “split incentives” problem should be addressed by imposing on homeowners the requirement to improve the energy performance of buildings, in combination with rental cap laws.¹⁰¹

C. Food

36. The agribusiness sector is a major driver of biodiversity loss and climate change. Almost one quarter of the world’s land area is degraded, reducing productivity, and pollinator loss costs between \$235 billion and \$577 billion in reduced crop output.¹⁰² While farming itself contributes around 10–12 per cent of global greenhouse gas emissions, mainly from methane and nitrous oxide emissions,¹⁰³ agriculture-driven deforestation adds a further 6–17 per cent, and the food system as a whole contributes between 15 and 28 per cent to overall greenhouse gas emissions in developed countries, taking into account all stages in the supply chain.¹⁰⁴ Green revolution technologies and industrial food production have allowed impressive increases in food production per capita globally, but with high costs to the environment and to public health.¹⁰⁵

37. The mechanization of production, the development of global supply chains and economies of scale have increased both produced and traded agricultural commodities and the supply of processed foods, allowing the wealthiest parts of the population to have access to more diversified diets. This dominant approach, however, has not benefited people living in poverty. In many developing countries, poor rural households that practice small-scale farming have been particularly affected by pressures on land and on farmers’ incomes resulting from the green revolution. While competition for land and the costs of farming have increased, farm gate prices have

⁹⁵ UN-Habitat, *Sustainable Housing for Sustainable Cities*.

⁹⁶ Ibid.; Ramin Keivani and others, *Green Jobs Creation through Sustainable Refurbishment in Developing Countries*, Working Paper, No. 275 (Geneva, ILO, 2010).

⁹⁷ ILO, *World Employment Social Outlook 2018: Greening with Jobs* (Geneva, 2018).

⁹⁸ ILO, “Green jobs in construction”.

⁹⁹ Council of Europe Development Bank, “Energy Poverty in Europe”.

¹⁰⁰ Jesse Melvin, “The split incentives energy efficiency problem: evidence of underinvestment by landlords”, *Energy Policy*, vol. 115 (April 2018).

¹⁰¹ Wenke Christoph, “The Berlin rent cap: an inspiration for housing struggles around the world”, Rosa Luxembourg Stiftung, 27 March 2020.

¹⁰² Ibid.

¹⁰³ Pete Smith and others, “Agriculture”, in Metz and others, eds., *Climate Change 2007*.

¹⁰⁴ Tara Garnett, “Food sustainability: problems, perspectives and solutions”, *Proceedings of the Nutrition Society*, vol. 72, No. 1 (February 2013).

¹⁰⁵ Attempts are made to assess the “true costs” of food production, in projects such as TEEBAgriFood (housed at UNEP and led by the Economics of the Ecosystems and Biodiversity Office).

generally declined, squeezing out the least competitive and land-poor farming households or relegating them to subsistence farming. Furthermore, at the consumer end of the food chain, low-income families living in high-income countries, as well as in most countries in Latin America and the Caribbean, eastern Europe and Central and East Asia (specifically China and Indonesia), are disproportionately affected by obesity and by the non-communicable diseases linked to the increased consumption of heavily processed foods and to the lack of dietary diversity associated with industrial food systems.¹⁰⁶ This is one source of the intergenerational transmission of poverty in these countries, since children born from women with obesity are at greater risk of obesity, higher health-care costs and discrimination in access to employment.¹⁰⁷

38. This too is an area in which triple dividends can be achieved, as more sustainable agricultural practices can also contribute to poverty reduction or to improving access of low-income households to adequate diets. Agroecology can contribute to climate change mitigation both by reducing the use of external inputs that depend on fossil energy and result in sizeable nitrous oxide emissions, and by preserving and enhancing soil health and agrobiodiversity, allowing soils to function as carbon sinks.¹⁰⁸ Furthermore, it can guarantee that local communities have access to adequate nutrition through the provision of diversified, safe and balanced diets, and can improve the incomes of small-scale farmers by lowering production costs and improving the resilience of farming systems to weather-related events, including those linked to climate change. The challenge today is to accelerate the agroecological transition by providing the right set of incentives to farmers, while at the same time taking measures, including fiscal measures, to ensure that all households, including low-income households, have access to adequate diets – not simply diets that provide enough calories and are safe to consume, but that are also healthy and diversified, mostly plant-based and relying on fresh, local and seasonal foods with minimal processing.

D. Mobility

39. Motorized transport, still heavily reliant on fossil fuels, is the second largest source of carbon dioxide emissions after non-industrial electricity and heat production,¹⁰⁹ and has severe health consequences through air pollution and traffic congestion.¹¹⁰ Overall, mobility represents between 20 and 30 per cent of the environmental impact linked to household consumption, and that impact is growing.¹¹¹ Even taking into account technological improvements, such as more fuel-efficient cars, growth in demand for passenger transport, in particular for extra-urban journeys (i.e. international, between cities, within rural areas, between rural and urban

¹⁰⁶ Barry M. Popkin, Camila Corvalan and Laurence M. Grummer-Strawn, “Dynamics of the double burden of malnutrition and the changing nutrition reality”, *The Lancet*, vol. 395, No. 10217 (January 2020); and Adam Drewnowski, “The economics of food choice behavior: why poverty and obesity are linked”, in Adam Drewnowski and Barbara J. Rolls, eds., *Obesity Treatment and Prevention: New Directions* (Basel, Nestec, Vevey/S. Karger, 2012). By contrast, obesity increases are largest among wealthier households in countries in sub-Saharan Africa and south Asia which are still undergoing a nutrition transition. See also, Boyd A. Swinburn and others, “The global syndemic of obesity, undernutrition, and climate change: the Lancet Commission report”, *The Lancet*, vol. 393, No. 10173 (February 2019).

¹⁰⁷ Franco Sassi, *L'obésité et l'économie de la prévention: objectif santé* (Paris, OECD, 2010), pp. 83–84.

¹⁰⁸ [A/HRC/16/49](#).

¹⁰⁹ International Energy Agency, “CO₂ emissions by product and flow”, CO₂ Emissions from Fuel Combustion Statistics database, ed. 2019. Available at www.oecd-ilibrary.org/energy/data/iea-co2-emissions-from-fuel-combustion-statistics_co2-data-en.

¹¹⁰ Economic Commission for Europe and others, *From Transition to Transformation: Sustainable and Inclusive Development in Europe and Central Asia* (Geneva, 2012).

¹¹¹ *Ibid.*

areas), is expected to lead to a 60 per cent increase in carbon dioxide emissions from worldwide transport by 2050.¹¹²

40. People living in low-income neighbourhoods are the main victims, and are the least to blame. People living in poverty suffer the most from the impacts of traffic pollution,¹¹³ yet they generally contribute the least to carbon dioxide emissions, as the distance travelled increases with disposable income,¹¹⁴ whether we consider the distance travelled by plane¹¹⁵ or by car,¹¹⁶ respectively the first and second most greenhouse gas-emitting modes of transport.¹¹⁷ The only exception to that rule is where people from poor households live a long distance from work or in locations with poor public transportation connections, obliging them to travel to work by private vehicles.¹¹⁸

41. Three priority triple-dividend actions emerge. The first is territorial planning that reduces distances between home, work and education reduces the need for motorized transport and prevents segregation.¹¹⁹ The second is promoting collective modes of transportation, a mix of public transport and shared mobility, which, combined with restricting the access of or prohibiting cars in dense urban areas where public transport is available¹²⁰ (a fairer measure than, for example, congestion charges)¹²¹ can both reduce reliance on individual vehicles and ensure a right to mobility, and thus to education, employment and health services for all. Finally, since battery-powered electric cars emit less greenhouse gases over their life cycle than cars with internal combustion engines using gasoline,¹²² electric vehicles could be promoted as a last resort, at least where electricity can be sourced from renewable sources and where strict environmental safeguards apply to battery production.¹²³ However, electric vehicles are not a solution for people living in poverty, at least in the predictable future. Moreover, there is a risk that the promotion of electric vehicles could perpetuate car-centric mobility at the expense of public transportation and additional urban green spaces, thereby disproportionately affecting the livelihoods and well-being of those living in poverty.¹²⁴

¹¹² OECD and International Transport Forum, *ITF Transport Outlook 2019* (Paris, OECD Publishing, 2019).

¹¹³ Gordon Mitchell and Danny Dorling, "An environmental justice analysis of British air quality", *Environment and Planning A: Economy and Space*, vol. 35, No. 5 (May 2003), pp. 909–929.

¹¹⁴ OECD and International Transport Forum, *ITF Transport Outlook 2019*.

¹¹⁵ Heidi Bruderer Enzler, "Air travel for private purposes: an analysis of airport access, income and environmental concern in Switzerland", *Journal of Transport Geography*, vol. 61 (May 2017), pp. 1–8.

¹¹⁶ Helena Titheridge and others, *Transport and Poverty: A Review of the Evidence* (London, University College London, 2014).

¹¹⁷ See the greenhouse gas reporting conversion factors for company reporting for 2019, published by the United Kingdom, Department for Business, Energy and Industrial Strategy. Available at www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019.

¹¹⁸ Noel Smith, Donald Hirsch and Abigail Davis, "Accessibility and capability: the minimum transport needs and costs of rural households", *Journal of Transport Geography*, vol. 21 (March 2012), pp. 93–101.

¹¹⁹ Tim Cresswell and others, "Living in the mobility transition: project report", 2017.

¹²⁰ Mark J. Nieuwenhuijsen and Haneen Khreis, "Car free cities: pathway to healthy urban living", *Environment International*, vol. 94 (September 2016), pp. 251–262.

¹²¹ Qiyang Liu and others, "Egalitarianism and public perception of social inequities: a case study of Beijing congestion charge", *Transport Policy*, vol. 74 (February 2019), pp. 47–62.

¹²² International Energy Agency, *Global EV Outlook 2019* (2019).

¹²³ Rachana Vidhi and Prasanna Shrivastava, "A review of electric vehicle lifecycle emissions and policy recommendations to increase EV penetration in India", *Energies*, vol. 11, No. 3 (March 2018), pp. 1–15. The use of rechargeable lithium-ion batteries to power electric vehicles and energy storage units requires the mining of battery metals, which has led to the contamination of water bodies and other forms of pollution, dam disasters, the forced eviction of communities. This calls for a strict regulation of the mining industry to avoid such harms in the future.

¹²⁴ Jason Henderson, "EVs are not the answer: a mobility justice critique of electric vehicle transitions", *Annals of the American Association of Geographers* (May 2020), pp. 1–18.

42. In addition to improving access to services for people living in poverty, a measure often relegated to neighbourhoods far removed from the better-connected urban centres, investing in the above measures can be an important source of green jobs. The net gain from doubling investments in public transport is estimated to include the creation of at least 5 million jobs worldwide, and between 8.5 and 10 million additional jobs could be created by investing in electric vehicles.¹²⁵

IV. From consumption-driven growth to inclusive societies

43. The measures outlined above can help solve the triple challenges of environmental sustainability, employment opportunities and the fight against poverty. Societal transformation, however, also requires that we move from unsustainable consumption-driven growth and the extractive and waste economy towards wealth redistribution and the fight against the accelerated obsolescence of consumer goods.

A. The bridging role of equality

44. Target 10.1 of the Sustainable Development Goals is to increase income growth of the bottom 40 per cent of the population at a rate higher than the national average, and target 10.4 is to adopt policies, especially fiscal, wage, and social protection policies, to achieve greater equality. Those objectives provide an essential bridge between Goal 1 (no poverty) and Goals 12 and 13 (responsible consumption and production and climate action). Indeed, the more equally that wealth is distributed across the population, the easier it is to reconcile economic growth with poverty-reduction objectives. If the benefits of increased prosperity trickle down to the worse off in society, less growth will be required for the basic needs of all to be met. Thus, where the economy still needs to grow – where poverty reduction depends on the further creation of wealth – it should do so in ways that will maximize poverty alleviation while minimizing its ecological impacts.

45. This is even more essential since economic growth (measured as the increase in gross domestic product per capita) mechanically leads to an increase in the ecological footprint, taking into account both resource depletion and the production of waste, including greenhouse gas emissions. “Relative decoupling” of growth from environmental degradation is of course common, as growth becomes less resource- and carbon-intensive and as a larger portion of waste is recycled; by contrast, “absolute decoupling”, where efficiency gains increase faster than total output, occurs only exceptionally.

46. The evolution of the pattern of greenhouse gas emissions is typical. Except for rare periods of economic downturn, a reduction in the volumes of such emissions in certain jurisdictions is explained by the fact that the accounting of emissions is territorial, based on what is produced and consumed within the territory, without taking into account emissions embedded in goods or services imported from abroad. In other words, where it is claimed that absolute decoupling of growth from emissions has occurred, it is most often due to the accounting method used under the United Nations Framework Convention on Climate Change, and the apparent gains in high-income jurisdictions have been paired with the outsourcing of pollution to other countries (generally resource-rich and poorer countries).¹²⁶

¹²⁵ ILO, *Jobs in Green and Healthy Transport: Making the Green Shift* (United Nations publication, Sales No. E.20.II.E.18).

¹²⁶ See Olivier De Schutter, *Trade in the Service of Sustainable Development* (London, Hart Publishing, 2016); Tim Jackson, “The myth of decoupling”, in Tim Jackson, *Prosperity Without Growth: Foundations for the Economy of Tomorrow* (London, Routledge, 2017).

47. A second reason why equality matters to environmental sustainability is because more equal societies use resources more efficiently. The allocation of resources through market mechanisms serves to satisfy demand, as expressed by the purchasing power of the wealthiest parts of the population, rather than to respond to the needs of the poorest. As a result, the frivolous desires of the most affluent, however unsustainable they may be, may take precedence over the satisfaction of basic needs of the least affluent. This is the environmental cost of inequality:¹²⁷ globally, the top 10 per cent of emitters contribute about 45 per cent of global carbon dioxide emissions, while the bottom 50 per cent of emitters contribute 13 per cent of global emissions.¹²⁸

48. Finally, tackling inequality matters because policies to reduce the ecological footprint can only succeed if they are perceived as legitimate by the population and if they are not obstructed by elites that benefit the most from existing patterns of distribution. More equal societies are therefore better equipped to drive transformational change, both because such obstruction is less likely to occur, thanks to the improved participation of low-income groups in civic and political life,¹²⁹ and because such societies can develop the “public ethos” necessary to address such society-wide challenges.¹³⁰

B. The fight against premature obsolescence of consumer items

49. Because it encourages status competition and thus conspicuous consumption,¹³¹ inequality also fuels the consumption-driven model of our current global economic system, which relies on the ever-increasing production and purchase of consumer goods to sustain economic growth. While technological innovation and fashion-driven consumption patterns explain the rise in consumption of consumer goods, planned or “built-in” obsolescence of products – manufacturers’ profit-motivated practice of deliberately designing products to fail prematurely or become out-of-date in order to sell another product or an upgrade thereof – or more generally the shortening of the lifetime of consumer products, also play a major role in that regard. The proportion of large household appliances replaced within less than five years owing to the presence of a defect increased from 3.5 to 8.3 per cent between 2004 and 2013, leading to higher volumes of waste and to increased resource use and greenhouse gas emissions.¹³²

¹²⁷ James K. Boyce, “The environmental cost of inequality”, *Scientific American*, vol. 319, No. 5 (November 2018). See also Lara Cushing and others, “The haves, the have-nots, and the health of everyone: the relationship between social inequality and environmental quality”, *Annual Review of Public Health*, vol. 36 (March 2015).

¹²⁸ Independent Group of Scientists appointed by the Secretary-General, *The Future is Now: Science for Achieving Sustainable Development – Global Sustainable Development Report 2019*, p. 17 (referring to L. Chancel and Th. Picketty, *Carbon and Inequality: From Kyoto to Paris* (Paris School of Economics, November 2015)).

¹²⁹ Bo Rothstein and Eric M. Uslaner, “All for all: equality, corruption, and social trust”, *World Politics*, vol. 58, No. 1 (October 2005), pp. 41–72; Eric M. Uslaner and Mitchell Brown, “Inequality, trust, and civic engagement”, *American Politics Research*, vol. 33, No. 6 (2005), pp. 868–894.

¹³⁰ Richard G. Wilkinson and Kate Pickett, *The Spirit Level: Why Greater Equality Makes Societies Stronger* (New York, Bloomsbury Press, 2009), p. 233.

¹³¹ *Ibid.*, p. 226.

¹³² Siddharth Prakash and others, *Influence of the Service Life of Products in Terms of Their Environmental Impact: Establishing an Information Base and Developing Strategies against “Obsolescence”* (Freiburg, Germany, Umweltbundesamt, 2020); Eric Vidalenc and Meunier Laurent, “Another perspective on environmental impacts of planned obsolescence”, paper presented at the European Council for an Energy Efficient Economy – Panel 9, Hyères, France, June 2015.

50. Again, people living in poverty lose. They are disproportionately affected by the dumping of avoidable waste, particularly from electronic products. Only 20 per cent of the total volume of global e-waste is recycled. The remainder is traded or deposited in dump sites,¹³³ causing environmental pollution and health hazards for the most marginalized populations, which is a major source of environmental injustice domestically and globally:¹³⁴ 80 per cent of electrical and electronic waste is sent to China and several African countries.¹³⁵ Premature obsolescence also has an impact on people living in poverty. Despite efforts towards encouraging responsible purchasing through labelling,¹³⁶ their limited disposable income available at the time of the purchase of a consumer item may make it difficult for poor consumers to buy long-life products, which are generally more expensive but have a lower annual total cost.¹³⁷ Thus, the poor end up paying more.

51. Although the reduction of premature obsolescence may lead to employment losses in waste management and recycling, primarily in the global South,¹³⁸ the net employment impacts are positive, since the repair, maintenance and rental industries have a considerable job creation potential.¹³⁹ Globally, moving away from the model of “extract, make, use and dispose” would lead to the creation of 6 million additional jobs by 2030, a 0.1 per cent increase in employment compared with the business-as-usual scenario.¹⁴⁰

52. Regulation may counter planned obsolescence. Banning manufacturers’ intentional limitation of product lifetimes, introducing longer guarantees, reducing VAT for repair companies, regulating spare parts and manuals to increase accessibility for consumers and repair shops or obliging producers to take back parts of their products for recycling are examples of what can be done. Circular economy initiatives may also help to recover used items or material to recycle and reuse them. In Brazil, organizations collect, repair and refurbish electric and electronic equipment that would otherwise go to landfills in order to resell them at advantageous prices to low-income populations.¹⁴¹ Functional economy and collaborative consumption initiatives, such as the sharing of tools, cars or tractors, sometimes encouraged by fiscal incentives, facilitate the exchange or sharing of underutilized assets, enlarging access to goods and services whilst reducing environmental impact.¹⁴²

¹³³ C.P. Balde and others, *The Global E-Waste Monitor: Quantities 2017: Quantities, Flows, and Resources* (Bonn, Geneva and Vienna, United Nations University, International Telecommunication Union and International Solid Waste Association, 2018).

¹³⁴ Michelle Heacock and others, “E-Waste and harm to vulnerable populations: a growing global problem”, *Environmental Health Perspectives*, vol. 124, No. 5 (2016), pp. 550–555.

¹³⁵ Karin Lundgren, *The Global Impact of E-Waste: Addressing the Challenge* (Geneva, ILO, 2012).

¹³⁶ William Young and others, “Sustainable consumption: green consumer behavior when purchasing products”, *Sustainable Development*, vol. 18, No. 1 (January/February 2010), pp. 20–31.

¹³⁷ Yatish Joshi and Zillur Rahman, “Factors affecting green purchase behavior and future research directions”, *International Strategic Management Review*, vol. 3, Nos. 1–2 (June–December 2015), pp. 128–143.

¹³⁸ Heacock and others, “E-Waste and harm to vulnerable populations”.

¹³⁹ European Union, Opinion of the European Economic and Social Committee on “Towards more sustainable consumption: industrial product lifetimes and restoring trust through consumer information” (own initiative opinion), No. 2014/C 67/05, 6 March 2014, p. 23.

¹⁴⁰ ILO, *World Employment and Social Outlook 2018*, p. 52.

¹⁴¹ See www.ellenmacarthurfoundation.org/case-studies/pre-consumer-waste-a-gbp-1-9-billion-opportunity-awaits.

¹⁴² Steven Kane Curtis and Matthias Lehner, “Defining the sharing economy for sustainability”, *Sustainability*, vol. 11, No. 3 (February 2019), pp. 567–594.

V. Conclusions and recommendations

53. The COVID-19 pandemic presents States with a reality test. The worst scenario is one in which people living in poverty would be paying three times – as sufferers of the economic crisis, as victims of an ecological transformation that has direct impacts on them, and finally as taxpayers, consumers or public service users financing the recovery.

54. The more virtuous scenario is one in which low-income groups are helped out of the economic crisis by the strengthening of rights-based established social protection floors; in which people living in poverty benefit from the greening of the economy that economic stimulus packages allow; and in which the recovery is financed by progressive tax reforms, including by ensuring that transnational corporations pay their taxes where they make their profits.¹⁴³ This is the only scenario compatible both with the requirements of human rights and with the 2030 Sustainable Development Agenda.

55. The crisis thus provides a once-in-a-generation opportunity to redefine development trajectories in accordance with the Sustainable Development Goals. The economic recovery plans can help transition to low-carbon and biodiverse economies, while at the same time creating employment opportunities for people with low levels of qualification and ensuring access to goods and services essential to the enjoyment of human rights.

56. This requires: (a) financing the economic recovery through progressive taxation schemes; (b) protecting workers and communities affected by the ecological transformation from the impacts on their livelihoods; and (c) investing in areas such as energy, buildings, food and mobility, to capture the “triple dividend” of a cleaner environment, decent jobs and affordable goods and services; as well as (d) moving away from unsustainable consumption-driven growth and the extractive and waste economy; (e) towards prioritizing the reduction of inequalities over the unsustainable quest for economic growth; and (f) fighting against the premature obsolescence of consumer goods; and finally (g) ensuring that the design and implementation of national action plans are based on social dialogue and the participation of people living in poverty.

57. The above six components of a human rights-compliant “just transition” should guide post-COVID-19 economic recovery plans. They should also be incorporated into the nationally determined contributions submitted by the States parties to the Paris Agreement, under its article 4, paragraph 2, as well as under the national biodiversity strategies and action plans submitted under article 6 of the Convention on Biological Diversity. “Building back better” does not mean a return to the status quo. It means the opposite: putting public action at the service of the eradication of poverty within planetary boundaries.

¹⁴³ A/HRC/44/40, paras. 67–71.