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T7 Task Force Climate and Environment

POLICY BRIEF

USING THE SDGS TO REALIZE THE G7'S “GREEN REVOLUTION THAT CREATES JOBS”

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Abstract

G7 leaders have already accepted many important concepts related to the environment and sustainability. The G7 agreed to “protect our planet by supporting a green revolution that creates jobs” in 2021 at the Cornwall Summit. However, the challenge is that the G7 has mostly issued general statements of principle rather than committed to concrete actions, and specific commitments tend to be neither ambitious nor well-implemented. The sustainable development goals (SDGs) also have been insufficiently highlighted by the G7. This policy brief explains how a “green revolution that creates jobs” can be visualized in the SDGs to encourage greater implementation efforts. Among the SDGs, the key is Target 8.2 on decent work. Targets to achieve a “green economic transformation” include those on sustainable consumption and production; decoupling the economy from environmental degradation; renewable energy and energy efficiency; sustainable agriculture, transport, and buildings; integrated water management; sanitation; and regulating unsustainable fishing and fishing subsidies. Efforts to achieve these targets can create a wide range of jobs while contributing to environmental goals and social priorities such as improved health, food security, poverty eradication, and greater equality and inclusiveness. The G7 countries should implement the concept of a “green revolution which creates jobs” by working on the “green economic transformation” targets in the SDGs. G7 countries should also create jobs to implement related SDG targets. A “green revolution” or “green economic transformation” working group should be established to develop concrete implementation measures. To ratchet up the level of ambition, the G7 countries should annually commit to voluntary national actions towards the implementation of their collective commitments. G7 countries should expand the scope of monitoring their commitments to include environment and sustainability commitments, especially focusing on the SDGs. The G7 should incorporate the SDGs into their communiques, especially the environmental dimensions. This will help to create synergies with other related international cooperation processes.

Challenge

G7 leaders have accepted many important concepts related to the environment and sustainability. Both the G7 2021 Cornwall Summit Communique¹ and the German government's 2022 policy priorities² strongly support environmental issues. In 2021, the G7 agreed to "protect our planet by supporting a green revolution that creates jobs" and "build back better for all," recognizing that global challenges are "interconnected," requiring an "integrated approach." The "heart" of the G7's agenda "is a green and digital transformation...that will protect people and the planet." The summit leaders devoted almost 5 pages to "climate and environment," while the Climate and Environment Ministers' Communique³ totaled 21 pages plus a 4-page "G7 2030 Nature Compact."⁴ Germany's 2022 policy priorities begin with "a sustainable planet," supported by the second and fourth priorities, "economic stability and transformation" and investment.

However, the first challenge is that these are mostly general statements of principle, not commitments to concrete action. Often, specific commitments are neither very ambitious nor well-implemented (e.g., phasing out fossil fuel subsidies). Moreover, the Cornwall Summit Communique is much weaker on environmental issues compared to the corresponding Climate and Environment Ministers Communique. Therefore, G7 leaders have been persuaded by the general concepts, but not enough to implement them.

A second challenge is that the G7 countries have not highlighted the SDGs, a globally agreed framework for encouraging concrete action on sustainability issues. In the Cornwall Summit Communique, SDGs were mentioned in only 2 paragraphs (63 and 67), and this was in relation to development cooperation rather than national actions. Similarly, although SDGs are the "central frame of reference for our commitment to sustainable development" in Germany's 2022 policy priorities, they are discussed in only one paragraph.

SDGs promote an integrated approach to sustainable development which fosters synergies between the environment, economic prosperity, and social progress.⁵ However, a third challenge is that "a green revolution that creates jobs," a "green economy," or "green growth," are not immediately visible in the SDGs. Partly, this is due to the SDGs' complexity: 17 goals, 169 targets and even more indicators. Many environmental indicators are very narrow and exclude the broader scope of the goals and targets. Studies on SDG interlinkages and interactions⁶ emphasize the complexity of the SDGs (concluding that most targets are related to most other targets) and recommend maximizing synergies and minimizing tradeoffs, especially between SDG 8.1 (traditional resource-intensive economic growth) and the environmental targets. However, these studies have not suggested a concrete overall strategy to synergize the environment and the economy.

This policy brief explains how a “green revolution that creates jobs” can be visualized in the SDGs by identifying the SDG targets which can generate jobs while simultaneously achieving environmental objectives. The approach is based on several insights. First, many important environment-related SDG targets are in the so-called “economic” and “social” SDGs and provide economic solutions for environmental sustainability.⁷ Second, many SDGs and targets are not simply goals, but are themselves means of implementation for other goals and targets; the “means of implementation” are not limited to those listed under SDG 17.⁸ Thus, the environment-related targets under the so-called “economic” SDGs, such as energy efficiency (Target 7.2) and sustainable transport (11.2) are key means to achieve the environmental objectives such as those under SDGs 13 (climate), 14 (oceans), and 15 (land). Third, if job creation is a key G7 objective, then SDG Target 8.2 on decent work should be showcased as a priority; it also should be separated from Target 8.1 on traditional resource-intensive economic growth, which has become increasingly disconnected from job creation⁹ and more associated with inequality and pollution.¹⁰

The economic SDG targets related to the green economic transformation are the key means to achieve the SDG targets which identify the goals of a sustainable planet such as climate change mitigation and protection of biodiversity. This is because economic activity is a major cause of greenhouse gas (GHG) emissions, biodiversity loss, and other environmental damage.¹¹

The green economic transformation embedded in the SDGs is illustrated in Figure 1. These SDG targets include economic measures to transform the economy and achieve a sustainable planet while creating jobs. The overall vision is provided by SDG Target 8.4, in which countries agreed to “endeavor to decouple economic growth from environmental degradation.” The core of the economic transformation is SDG 12 on “sustainable consumption and production.” Target 12.2 presents a broad vision to “achieve the sustainable management and efficient use of natural resources” by 2030. The other targets under SDG 12 include various measures to promote resource efficiency, sustainable procurement, recycling, and consumer information/labeling, and rationalizing fossil fuel subsidies, all of which would benefit from greater G7 cooperation. Infrastructure and industrialization (SDG 9) should be “sustainable,” “resilient,” and “inclusive.” Existing industries and infrastructure which are not currently sustainable should be “upgraded” and “retrofitted” with “increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes” (SDG 9.4). Major economic sectors should be made sustainable. These include not only energy - renewable energy and energy efficiency (SDGs 7.2 and 7.3) - but also sustainable transportation (SDG 11.2), sustainable buildings (SDG 11.3), integrated water management (SDG 6.4), sanitation (SDG 6.2), and sustainable agriculture (SDG 2.4). Fishing regulations should be strengthened (SDG 14.4), and harmful fishing subsidies should be eliminated (SDG 14.6). Education to prepare workers for these jobs is the focus of SDG 4.4 (skills for employment).

Figure 1: Green Economic Transformation: Sustainable Planet, Jobs, and Well-being

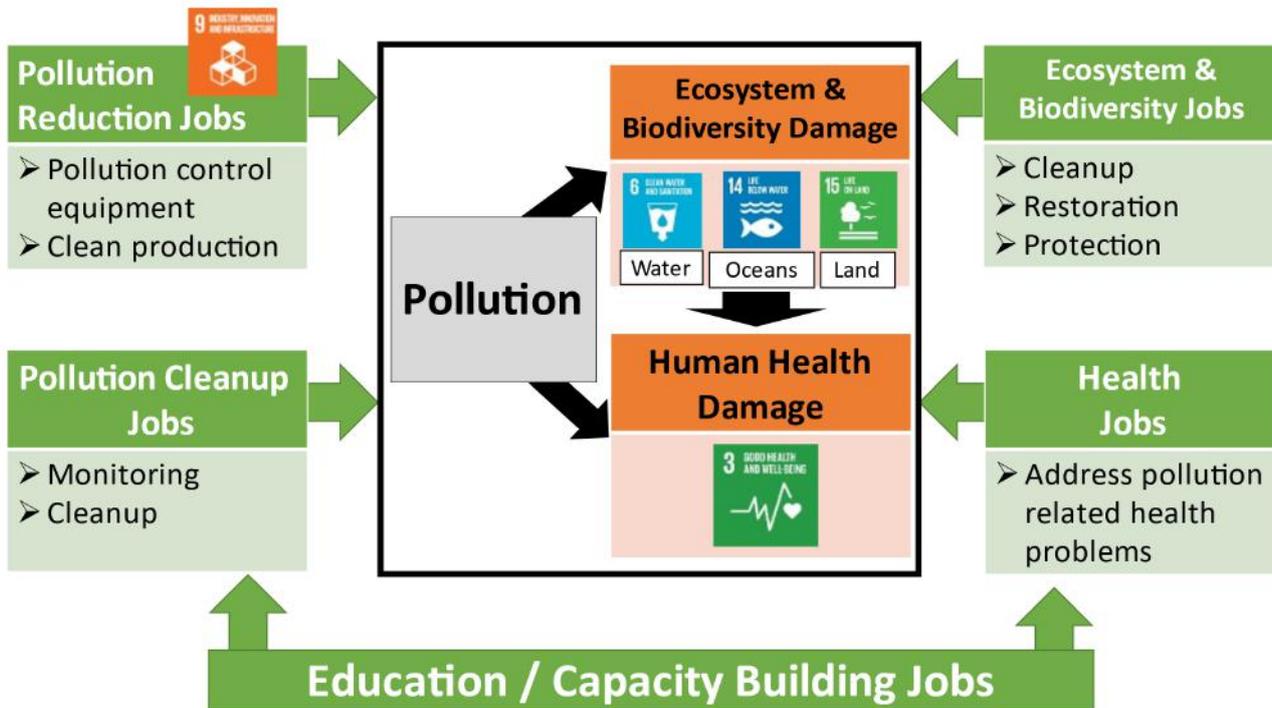


G7 countries should increase funding for jobs and related training in these areas, which are increasingly short of workers.¹² Renewable energy jobs are already increasing rapidly¹³ in the market along with burgeoning investment¹⁴ as renewable energy becomes cost-competitive with fossil energy. The circular economy, along with waste management, also has a large potential for green jobs.¹⁵ Recycling and other aspects of the circular economy are labor intensive, so large numbers of jobs could be created by enabling policies to promote circular economy businesses and markets. Sustainable agriculture may also be more labor intensive than conventional resource and capital-intensive agriculture, and it may provide better support for agricultural employment. Policies to promote sustainable buildings would create jobs in the construction industry. Sustainable transport policies would create new jobs for bus and train drivers as well as green infrastructure construction and maintenance. Ecosystem restoration could also provide large numbers of jobs, especially for displaced fossil fuel workers, since fossil fuel production itself causes significant ecological damage in the production areas. There is an especially great need for pollution cleanup at former fossil fuel production sites where abandoned mines and oil wells continue to pollute the environment. Expanded environmental monitoring could create jobs in all areas, including remote rural areas as well as dense urban areas.

Many jobs for ecosystem and pollution management could also be created by non-economic (or less economic) measures to implement the “sustainable planet” SDG targets, such as establishing protected areas, capacity building, and regulatory policies like pollution standards for land, water, and air pollutants and their enforcement. Some of the different possible kinds of jobs are illustrated in Figure 2. These include jobs for pollution cleanup, ecosystem restoration and

protection, pollution monitoring and enforcement, and operation of pollution control equipment and clean production technologies. Health workers focused on pollution-related diseases are also needed, as well as education and capacity building experts to provide the necessary training for these jobs.

Figure 2: Potential Environment and Ecosystem Related Jobs to Implement SDGs



These could be considered “green jobs,” although the SDGs do not use this phrase. Decision makers may be more interested in “decent” jobs (which are included in the SDGs) than “green” jobs. To gain political support for a “green revolution” it is important to help ordinary people as well as decision-makers to be able to concretely visualize how decent jobs might be realistically created to replace jobs lost in fossil fuel related industries and due to technological advances, such as AI and IOT. Education and training are important, but they do not directly lead to new decent jobs. The potential for environmental sustainability measures to create jobs has been proposed before,¹⁶ including to the G7,¹⁷ but implementation of the concept has been limited. It is hoped that placing the issue in the context of the SDGs could help persuade decision makers about the value of using environmental sustainability to support employment.

In the process of achieving a more sustainable planet, implementing SDG targets related to the green economic transformation will simultaneously make large contributions to human well-being and inclusiveness as well as prosperity through jobs. Substantial health benefits from reduced pollution benefit everyone.¹⁸ In addition to reduced human suffering, fewer premature deaths, and improved quality of life, better health also saves enormous economic costs, not only from hospitalization and medications, but also from lost work time. The environmental community has

emphasized health benefits of environmental measures for some years,¹⁹ but it has not been sufficient to persuade political leaders to take significantly stronger action. SDG targets on health and pollution have received less attention than others, especially Target 3.3 on deaths and illness from pollution and Target 11.6 which calls for the reduction of the environmental impact of cities.

Benefits of stronger environmental measures, such as food security, become more visible when considering the linkages among SDGs. Climate change and environmental pollution are major threats to food security as well as economic livelihoods of farmers and fishers.²⁰ Climate change will cause increasing crop damage from extreme weather, hotter temperatures, floods, and droughts.²¹ Areas suitable for some crops will shift, forcing farmers to change their farming methods or even shifting to different crops altogether. Fish in the ocean will migrate in and out of countries' economic zones as ocean temperatures change. Ocean acidification and warming seas will disrupt marine ecosystems, especially those associated with coral reefs. Air pollution harms agricultural crops.²² Thus, SDG Target 2.1 to end hunger cannot be achieved by traditional resource-intensive farming, or even "sustainable food production systems" (SDG Target 2.4) by themselves; green transformation of other areas of the economy to reduce pollution and mitigate climate change are also required.

Greater inclusion (SDGs 5 and 10) will also be promoted by the green economic transformation. Women and others "left behind" are most in need of "decent work" and suffer disproportionately from health problems and premature deaths from environmental pollution.²³

Monitoring progress, which is also promoted by SDGs, has also been underdeveloped in the G7. The G7 Accountability Working Group (AWG) was established in 2009, before the SDGs.²⁴ However, the AWG focuses only on development and development-related commitments. While this is a laudable focus, the scope should be expanded to include other areas, especially the environment, sustainability issues, and SDGs. The SDGs apply to all countries, not just developing countries. If the expanded scope of monitoring progress would be too burdensome for the AWG, the work could be delegated to an international organization and/or consortium of think tanks.

Proposals

1. The G7 countries should continue the concept of a “green revolution which creates jobs,” which was adopted in the G7 Cornwall Summit in 2021, and increase the focus on concrete implementation of the “green economic transformation” targets in the SDGs. G7 countries should also put more emphasis on creating jobs to implement related SDG targets. These points should be mentioned in the communique.
2. The G7 countries should create green and decent jobs to implement the environmental SDG targets. These could focus on the circular economy, ecosystem restoration, and monitoring and enforcement of environmental standards and regulations. A “green revolution” or “green economic transformation” working group should be established under the G7 to develop concrete implementation measures.
3. To increase the level of ambition, the G7 should annually commit to voluntary national actions towards the implementation of their commitments. These could also focus on SDG targets.
 - Example - green recovery: G7 countries should report their recovery/economic stimulus spending each year and explain how much of it is green.
 - Example - fossil fuel subsidies: G7 countries should report the list of all their fossil fuel subsidies, and each year commit to eliminating or reducing specific ones.
 - Example - protected areas: each year, G7 countries should designate a specific area under their jurisdiction to be protected, until the target is achieved.
4. In general, the G7 countries should link the discussion in their communiqués with the SDGs. All the German government’s priorities are related to the SDGs, not just the environment-related targets. For example, COVID-19 is a health issue, and therefore related to SDG 3 (health). Many governance-related priorities are related to SDGs 16 (peace, justice, and strong institutions) and 17 (means of implementation), as well as SDG 5 (gender equality) and SDG 10 (reduced inequalities). SDGs are related to core national and subnational policies, not just to development cooperation. SDGs will help to create clearer linkages with existing related multilateral processes.
5. G7 countries should expand the scope of monitoring their commitments to include environment and sustainability commitments, especially focusing on the SDGs. If this is too much for the AWG to manage by itself, the work could be delegated to an international organization and/or a consortia of think tanks.

Implementation

The recommendations in this policy brief aim to promote and accelerate the implementation of concepts and commitments that the G7 has already agreed to, including the SDGs and the statements in the 2021 Cornwall Summit communiqués. These are not new commitments, but implementation has been limited. A monitoring and review process has already been established in the G7, and this policy brief recommends the next step in advancing it.

Over time, the G7 has expanded the scope of its agenda as well as the range of civil society participation, and it has become more institutionalized. The establishment of working groups helps to maintain continuity as the meeting rotates between countries. The G7 can use the assistance of engagement groups such as T7 to help them to manage this expanding agenda and encourage greater implementation efforts. The SDGs are a useful internationally agreed framework to help manage this complexity.

It is hoped that the visualization of a “green revolution that creates jobs” through SDGs will help encourage the G7 countries to strengthen the level of their ambition and put more emphasis on implementation.

Geopolitics, SDGs, and a “Green Revolution that Creates Jobs”

Achieving the SDGs and a “Green Revolution that Creates Jobs” are also essential responses to the new geopolitical environment after Russia’s invasion of Ukraine. To reduce dependence on energy imports, climate action (SDG 13) needs to be accelerated, especially the energy transition from fossil fuels to renewable energy and energy efficiency (SDG 7), expanded public transport (SDG 11.2), and sustainable buildings (11.c). Energy conservation would produce the quickest results. These climate measures will substantially enhance energy security as well as reduce costs. Renewable energy already is already cheaper than fossil fuels in many cases, especially coal,²⁵ and its cost advantage has widened as fossil fuel prices have increased. Resource security will be enhanced by rapid acceleration of resource efficiency and recycling (SDGs 9, 12). Food security can be increased by expanding sustainable agriculture (SDG 2), reducing food waste (SDG 12.3), and reducing meat consumption. Nevertheless, concerns about jobs will continue, and ensuring decent green jobs will remain important.

The human suffering and environmental destruction resulting from the Ukraine invasion²⁶ highlight the importance of SDG 16 on peace, justice, and strong institutions as a foundation stone for human well-being and prosperity, as well as the SDG targets related to environmental sustainability. More broadly, geopolitical stability and SDG 16 itself are particularly threatened by environmental damage such as climate change, resource scarcity, desertification, water pollution and security, land degradation, ecosystem damage, damage to nuclear facilities, etc. These problems also create environmental refugees, undermining political stability. In sum, geopolitical challenges are increasing the urgency of implementing the SDGs and improving environmental sustainability.

Endnotes

¹ (G7, 2021a)

² (Government of Germany, 2022)

³ (G7, 2021d)

⁴ (G7, 2021b)

⁵ (Biermann et al., 2017; Elder & King, 2018; Independent Group of Scientists, 2019; Weitz et al., 2018)

⁶ (Allen et al., 2017; Barbier & Burgess, 2019; Bennich et al., 2020; Mainali et al., 2018; Nilsson et al., 2016; Pradhan et al., 2017; Santika et al., 2019; Zhou & Moinuddin, 2017)

⁷ (Elder & Olsen, 2019)

⁸ (Elder et al., 2016)

⁹ (Josifidis & Supic, 2018; Magnani, 2022; Schmitt-Grohé & Uribe, 2017)

¹⁰ (Jackson, 2017; Raworth, 2017)

¹¹ (IPCC, 2022a; UNEP, 2019)

¹² (Elbein, 2022)

¹³ (IRENA and ILO, 2021)

¹⁴ (Mathis, 2022; REN21, 2021)

¹⁵ (Chateau & Mavroeidi, 2020)

¹⁶ (ILO, 2019a, 2019b; Sierra Club, 2020; UNEP, 2011)

¹⁷ (OECD, 2017)

¹⁸ (UNEP, 2019)

¹⁹ (Landrigan et al., 2018; Nawahda et al., 2012; UNEP, 2019; WHO, 2014a, 2014b)

²⁰ (IPCC, 2019)

²¹ (IPCC, 2022b)

²² (Avnery et al., 2011; Nawahda et al., 2013; Sillmann et al., 2021)

²³ (UNEP, 2019)

²⁴ (G7, 2021c)

²⁵ (Gearino, 2020; IRENA, 2021; Mathis, 2021)

²⁶ (Matsushita, 2022; Subbaraman, 2022)

References

- Allen, C., Nejdawi, R., El-Baba, J., Hamati, K., Metternicht, G., & Wiedmann, T. (2017). Indicator-based assessments of progress towards the sustainable development goals (SDGs): a case study from the Arab region. *Sustainability Science*, 12(6), 975–989. <https://doi.org/10.1007/s11625-017-0437-1>
- Avnery, S., Mauzerall, D. L., Liu, J., & Horowitz, L. W. (2011). Global Crop Yield Reductions Due to Surface Ozone Exposure: Year 2000 Crop Production Losses and Economic Damage. *Atmospheric Environment*, 45(13), 2284–2296.
- Barbier, E., & Burgess, J. (2019). Sustainable development goal indicators: Analyzing trade-offs and complementarities. *World Development*, 122. <https://doi.org/10.1016/j.worlddev.2019.05.026>
- Bennich, T., Weitz, N., & Carlsen, H. (2020). Deciphering the scientific literature on SDG interactions: A review and reading guide. *Science of the Total Environment*, 728. <https://doi.org/10.1016/j.scitotenv.2020.138405>
- Biermann, F., Kanie, N., & Kim, R. E. (2017). Global Governance by Goal-setting: The Novel Approach of the UN Sustainable Development Goals. *Current Opinion in Environmental Sustainability*, 26–27, 26–31. <https://doi.org/10.1016/j.cosust.2017.01.010>
- Chateau, J., & Mavroeydi, E. (2020). The jobs potential of a transition towards a resource efficient and circular economy. *OECD Environment Working Papers*, 167. <https://doi.org/https://doi.org/https://doi.org/10.1787/28e768df-en>
- Elbein, S. (2022, February 22). LinkedIn: Green jobs soaring beyond available labor force. *Thehill.Com*. <https://thehill.com/policy/equilibrium-sustainability/595368-linked-in-green-jobs-soaring-beyond-available-labor-force>
- Elder, M., Bengtsson, M., & Akenji, L. (2016). An Optimistic Analysis of the Means of Implementation for Sustainable Development Goals: Thinking about Goals as Means. *Sustainability*, 8(9), 962–986. <https://doi.org/10.3390/su8090962>
- Elder, M., & King, P. (Eds.). (2018). *Realising the Transformative Potential of the SDGs*. Institute for Global Environmental Strategies. <https://pub.iges.or.jp/pub/realising-transformative-potential-sdgs>
- Elder, M., & Olsen, S. H. (2019). The Design of Environmental Priorities in the SDGs. *Global Policy*, 10, 70–82. <https://doi.org/https://doi.org/10.1111/1758-5899.12596>
- G7. (2021a). *Carbis Bay Summit Communique*. G7 Cornwall UK 2021. <https://www.g7uk.org/wp-content/uploads/2021/06/Carbis-Bay-G7-Summit-Communique-PDF-430KB-25-pages-3.pdf>
- G7. (2021b). *G7 2030 Nature Compact*. G7 Cornwall UK 2021. <https://www.g7uk.org/wp-content/uploads/2021/06/G7-2030-Nature-Compact-PDF-120KB-4-pages.pdf>
- G7. (2021c). *G7 Carbis Bay Progress Report*. G7 Accountability Working Group. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/990319/G7_Carbis_Bay_Report.pdf
- G7. (2021d). *G7 Climate and Environment Ministers' Communiqué*. G7 Cornwall UK 2021. <https://www.g7uk.org/g7-climate-and-environment-ministers-communique/>
- Gearino, D. (2020, March 9). Coal-Fired Power Plants Hit a Milestone in Reduced Operation. *Inside Climate News*. <https://insideclimatenews.org/news/09032020/coal-plant-closings-eia-clean-energy-transition/>
- Government of Germany. (2022). *Policy Priorities for Germany's G7 Presidency in 2022*. <https://www.g7germany.de/resource/blob/998352/2000328/6cb78b73c9f000183e69738c255d9cc9/2022-01-21-g7-programm-en-data.pdf?download=1>
- ILO. (2019a). *Skills for a greener future: Challenges and enabling factors to achieve a just transition*. ILO.

- ILO. (2019b). *Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity*. International Labour Organization. https://www.ilo.org/global/publications/books/WCMS_712685/lang-en/index.htm
- Independent Group of Scientists. (2019). *Global Sustainable Development Report 2019*. United Nations. https://sustainabledevelopment.un.org/content/documents/24797GSDR_report_2019.pdf
- IPCC. (2019). *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. <https://www.ipcc.ch/srccl/>
- IPCC. (2022a). *Climate Change 2022: Mitigation of Climate Change - Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. <https://doi.org/10.1017/9781009157926>
- IPCC. (2022b). Summary for Policymakers. In *Climate Change 2022: Impacts, Adaptation, and Vulnerability (Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change)*. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf
- IRENA. (2021). *Renewable Power Generation Costs in 2020*. International Renewable Energy Agency. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/Jun/IRENA_Power_Generation_Costs_2020.pdf
- IRENA and ILO. (2021). *Renewable Energy and Jobs - Annual Review 2021*. International Renewable Energy Agency, International Labor Organization. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_823807.pdf
- Jackson, T. (2017). *Prosperity Without Growth: Economics for the Economy of Tomorrow* (2nd ed). Routledge.
- Josifidis, K., & Supic, N. (2018). Income Polarization of the U.S. Working Class: An Institutional View. *Journal of Economic Issues*, 52(2), 498–508. <https://doi.org/10.1080/00213624.2018.1469929>
- Landrigan, P. J., Fuller, R., Acosta, N. J. R., Adeyi, O., Arnold, R., Basu, N. (Nil), Baldé, A. B., Bertollini, R., Bose-O'Reilly, S., Boufford, J. I., Breyse, P. N., Chiles, T., Mahidol, C., Coll-Seck, A. M., Cropper, M. L., Fobil, J., Fuster, V., Greenstone, M., Haines, A., ... Zhong, M. (2018). The Lancet Commission on pollution and health. *The Lancet*, 391(10119), 462–512. [https://doi.org/10.1016/S0140-6736\(17\)32345-0](https://doi.org/10.1016/S0140-6736(17)32345-0)
- Magnani, M. (2022). *Making the Global Economy Work for Everyone: Lessons of Sustainability from the Tech Revolution and the Pandemic*. Palgrave Macmillan.
- Mainali, B., Luukkanen, J., Silveira, S., & Kaivo-Oja, J. (2018). Evaluating synergies and trade-offs among Sustainable Development Goals (SDGs): Explorative analyses of development paths in South Asia and Sub-Saharan Africa. *Sustainability (Switzerland)*, 10(3). <https://doi.org/10.3390/su10030815>
- Mathis, W. (2021, June 23). Building New Renewables Is Cheaper Than Burning Fossil Fuels. *Bloomberg.Com*. <https://www.bloomberg.com/news/articles/2021-06-23/building-new-renewables-cheaper-than-running-fossil-fuel-plants?sref=R0y3izZe>
- Mathis, W. (2022, January 27). Energy Transition Drew Record \$755 Billion of Investment in 2021. *Bloomberg.Com*. <https://www.bloomberg.com/news/articles/2022-01-27/energy-transition-drew-record-755-billion-of-investment-in-2021?sref=R0y3izZe>
- Matsushita, K. (2022, April 22). Grave Concern for Environmental and Climate Damage Caused by Russian Invasion of Ukraine. *Toda Peace Institute*. <https://toda.org/global-outlook/grave-concern-for-environmental-and-climate-damage-caused-by-russian-invasion-of-ukraine.html>
- Nawahda, A., Yamashita, K., Toshimasa, O., Kurokawa, J., & Yamaji, K. (2012). Evaluation of Premature Mortality Caused by Exposure to PM2.5 and Ozone in East Asia: 2000, 2005, 2020. *Water, Air & Soil Pollution*, 223(6), 3445–3459. <https://doi.org/https://doi.org/10.1007/s11270-012-1123-7>
- Nawahda, A., Yamashita, K., Toshimasa, O., Kurokawa, J., & Yamaji, K. (2013). Evaluation of the Effect of Surface Ozone

on Main Crops in East Asia: 2000, 2005, and 2020. *Water, Air & Soil Pollution*, 224(5), 1537.

- Nilsson, M., Griggs, D., & Visback, M. (2016). Map the interactions between Sustainable Development Goals. *Nature*, 534(15), 320–322. <https://doi.org/10.1038/534320a>
- OECD. (2017, June). Employment Implications of Green Growth: Linking Jobs, Growth, and Green Policies. *OECD Report for the G7 Environment Ministers*. <https://www.oecd.org/environment/employment-implications-of-green-growth-oecd-report-g7-environment-ministers.pdf>
- Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J. P. (2017). A Systematic Study of Sustainable Development Goal (SDG) Interactions. *Earth's Future*, 5(11), 1169–1179. <https://doi.org/10.1002/2017EF000632>
- Raworth, K. (2017). *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. Random House.
- REN21. (2021). *Renewables 2021 Global Status Report*. REN21 Secretariat. https://www.ren21.net/wp-content/uploads/2019/05/GSR2021_Full_Report.pdf
- Santika, W., Anisuzzaman, M., Bahri, P., Shafiullah, G., Rupf, G., & Urme, T. (2019). From goals to joules: A quantitative approach of interlinkages between energy and the Sustainable Development Goals. *Energy Research and Social Science*, 50. <https://doi.org/10.1016/j.erss.2018.11.016>
- Schmitt-Grohé, S., & Uribe, M. (2017). Liquidity traps and jobless recoveries. *American Economic Journal: Macroeconomics*, 9(1), 165–204. <https://doi.org/10.1257/mac.20150220>
- Sierra Club. (2020). *Millions of Good Jobs: A Plan for Economic Renewal*. Sierra Club. <https://www.sierraclub.org/trade/millions-good-jobs-plan-for-economic-renewal>
- Sillmann, J., Aunan, K., Emberson, L., Buker, P., Van Oort, B., O'Neill, C., Otero, N., Pandey, D., & Brisebois, A. (2021). Combined impacts of climate and air pollution on human health and agricultural productivity. *Environmental Research Letters*, 16(9). <https://iopscience.iop.org/article/10.1088/1748-9326/ac1df8/meta>
- Subbaraman, N. (2022, April 24). Russia's War in Ukraine Could Have Environmental Impact That Lasts Decades. *Wall Street Journal*. <https://www.wsj.com/articles/russias-war-in-ukraine-could-have-environmental-impact-that-lasts-decades-11650801603>
- UNEP. (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. United Nations Environment Programme. <http://web.unep.org/greeneconomy/>
- UNEP. (2019). Global Environment Outlook – GEO-6: Healthy Planet, Healthy People. In *Global Environment Outlook – GEO-6: Healthy Planet, Healthy People*. United Nations Environment Programme (UNEP). <https://doi.org/10.1017/9781108627146>
- Weitz, N., Carlsen, H., Nilsson, M., & Skånberg, K. (2018). Towards systemic and contextual priority setting for implementing the 2030 agenda. *Sustainability Science*, 13(2). <https://doi.org/10.1007/s11625-017-0470-0>
- WHO. (2014a). *Burden of Disease from Ambient Air Pollution for 2012*. http://www.who.int/phe/health_topics/outdoorair/databases/FINAL_HAP_AAP_BoD_24March2014.pdf?ua=1
- WHO. (2014b). *Burden of disease from Household Air Pollution for 2012*. 35(February), 17. [https://doi.org/10.1016/S0140-6736\(12\)61766-8](https://doi.org/10.1016/S0140-6736(12)61766-8).Smith
- Zhou, X., & Moinuddin, M. (Eds.). (2017). *Sustainable Development Goals Interlinkages and Network Analysis: A Practical Tool for SDG Integration and Policy Coherence*. Institute for Global Environmental Strategies. <https://pub.iges.or.jp/pub/sustainable-development-goals-interlinkages>

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