



GLOBAL CLIMATE  
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CONFERENCE ▶▶

TOKYO  
20-21 JULY  
2022

# CONFERENCE BACKGROUND NOTE

## Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development

*Building the evidence base for synergistic action  
in support of raising climate and SDGs ambition*

TOKYO JAPAN | HYBRID  
20-21 July 2022

### CO-CONVENED BY



**United Nations**

Department of  
Economic and  
Social Affairs



**United Nations**  
Climate Change

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## ACKNOWLEDGEMENTS

This conference background note is jointly developed by the conference coordinating organizations for the Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development, consisting of:

- United Nations Department of Economic and Social Affairs (Co-Convener)
- United Nations Framework Convention on Climate Change secretariat (Co-Convener)
- Ministry of the Environment of Japan (Host)
- United Nations University (Partner)
- Institute for Global Environmental Strategies (Partner)

This document is produced based on the technical contributions from staff and experts from the conference coordinating organizations. Under this arrangement, the Institute for Global Environmental Strategies (IGES) served as the focal point for compiling all technical inputs. The findings, interpretations and conclusions expressed in this document do not necessarily reflect the views of any of the conference coordinating organizations.

Special thanks are due to the following individuals who provided significant contributions and oversaw the development of this document: Eric Zusman, Simon Høiberg Olsen, Shinji Onoda, Miki Fukuda, and Junichi Fujino (IGES); Akio Takemoto, Mei Maruyama, Upalat Korwatanasakul, and Mihoko Sakai (UNU); Minoru Takada, Bahareh Seyedi, Ralph Wahnschafft, Nadine Salame, and Yaryna Shura (DESA); Daniele Violetti, and Ann Joe (UNFCCC), Michihiro Oi, Issei Nakahara, Ryosuke Kando, and Kotaro Kawamata (MoEJ).

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## EXECUTIVE SUMMARY

**The world is not on pace to achieve the Paris Agreement and the Sustainable Development Goals (SDGs).** Strengthening evidence on synergies and trade-offs between climate change and the SDGs can help raise ambition and accelerate progress on these agendas.

**A “big picture” overview shows significant evidence of synergies in urban systems but fragmented evidence elsewhere.**

Energy, transport, industry, food and land use systems exhibit several uncertainties. Links between mitigation and SDGs 4 (education), 5 (gender), 10 (equity), 16 (institutions), and 17 (partnerships) could be clearer. The same applies to interactions between mitigation, adaptation and other SDGs. A closer look at context-specific interrelationships could help build the evidence base and close lingering knowledge gaps.

A “closer look” suggests co-benefits and water-food-energy nexus (WFEN) tools can shed light on interrelationships in specific contexts. These well-established approaches may nonetheless prove more revealing by looking beyond first-order impacts to wider streams of benefits. This more expansive view could illustrate not just the magnitude of benefits but to whom they accrue. It could further highlight links between environmental concerns and decent jobs, educational opportunities, well-being and social justice issues. It is also consistent with emerging spatially-oriented integrated approaches such as the circulating and ecological spheres (CES) that aim to achieve climate, biodiversity and circular economy goals by optimizing materials flows across rural and urban areas.

**To leave no one behind, policymakers should explicitly prioritize the needs of the vulnerable.** This can be achieved by leveraging multiple potential opportunities for synergies and policy coherence.

**Carefully crafted enabling environments can help translate evidence into actions.** Constructing such an environment will involve enhancing multi-level governance, deliberative decision-making, multi-instrument policy mixes, innovative financing and data systems.

The Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development offers a platform to discuss a way forward, among other issues, on the following topics:

- Options for further strengthening the evidence base for synergistic action;
- Ways for advancing holistic integrated approaches that cut across space, systems and stakeholders;
- Existing needs and opportunities for scaling up capacity building, including youth empowerment;
- Opportunities for greater sharing of experiences at all levels;
- Options for enhancing integrated planning; and
- New partnerships for transformation.

**Outcomes of the Conference should inform and shape relevant global processes to strengthen synergistic action,** such as the SDG Summit (in 2023 and 2027), global stocktaking efforts under the Paris Agreement and other relevant global processes related to any of the SDGs.

# 1. INTRODUCTION

The SDGs and the Paris Agreement established a firm foundation for integrating the climate and sustainable development agendas.<sup>1</sup> That integration could raise ambitions and accelerate progress on climate change and the SDGs.<sup>2</sup> The Conference Co-organizing Committee\* prepared this Background Note to guide discussions on how the *Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development* can substantively enrich that integrative process.

The Background Note draws from the first Climate and SDGs Synergy Conference held in April 2019 in Copenhagen, Denmark. Following that milestone meeting, the United Nations Department of Economic and Social Affairs (UNDESA) and United Nations Framework Convention on Climate Change (UNFCCC) Secretariats began building a platform to disseminate knowledge and good practice on climate and SDGs synergies. A webinar series on Harnessing Climate and SDGs Synergies was organized between December 2020 and February 2021 to offer policymakers and others guidance on these issues.<sup>3</sup>

Intergovernmental discussions have affirmed the transformative potential of synergies. Illustrating that strong support, the SDG Summit held in 2019 declared, “We recognize the synergies between the implementation of the 2030 Agenda and the Paris Agreement.” At 26<sup>th</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26), the Glasgow Climate Pact sought to accelerate climate action “in the context of sustainable development.” The 50th anniversary of the UN Conference on the Human Environment (UNCHE) offered recommendations that integration can “accelerate system-wide transformations...” The upcoming COP15 on the Convention on Biological Diversity (CBD) will likely promote synergies between biodiversity, climate and sustainable development in the Post-2020 Global Biodiversity Framework (GBF) with similar transformative ends in mind.

The Conference Background Note builds off the above momentum to address two questions: 1) What is known about synergies and trade-offs? and 2) What can be done to consolidate existing and emerging knowledge to raise ambitions and accelerate progress on climate change and the SDGs?

**Answering these questions is an important step in reversing worrying trends on the Paris Agreement and SDGs.** Some of those trends suggest the world is on pace to achieve the SDGs in the 2060s or 2070s. Others project a 2.7°C temperature rise this century that has dimmed hopes of achieving Paris 1.5°C goals.<sup>4</sup> Disruptions from pandemics (COVID-19), conflicts (Ukraine) or other exogenous shocks could slow progress further. The tendency to prioritize business-as-usual development over a healthy environment has also led to the expansion of material and ecological footprints in wealthy countries that augurs poorly for a sustainable future globally.<sup>5</sup>

**Many reasons exist why recognizing synergies and trade-offs can accelerate progress—and thereby lower the costs of inaction.**<sup>6</sup> Those reasons begin with clearly demonstrating desirable and undesirable interrelationships—such as how short-sighted growth strategies give rise to climate-induced mass migration, overtaxed ecosystems and political unrest. The failure to mitigate climate change and address basic human development needs enshrined in the SDGs is itself a trade-off. A related reason for integration is that achieving larger sustainability objectives in the context of climate change can reduce mitigation/adaptation costs while bringing climate finance to core development needs. This could include, for instance, resources targeting multiple wins from the Green Climate Fund (GCF), the Global Environment Facility (GEF) and numerous other channels. Other reasons include the apparent recognition among G20 countries of the advantages of adopting climate-related measures with more synergies.<sup>7</sup> Finally, efforts to capture complementarities and limit conflicts can overcome vested interests that prevent transitions to sustainable energy, urban, industry and land use systems. Policymakers can potentially draw upon these arguments to move from one-off incremental shifts to self-sustaining multi-level transformations.

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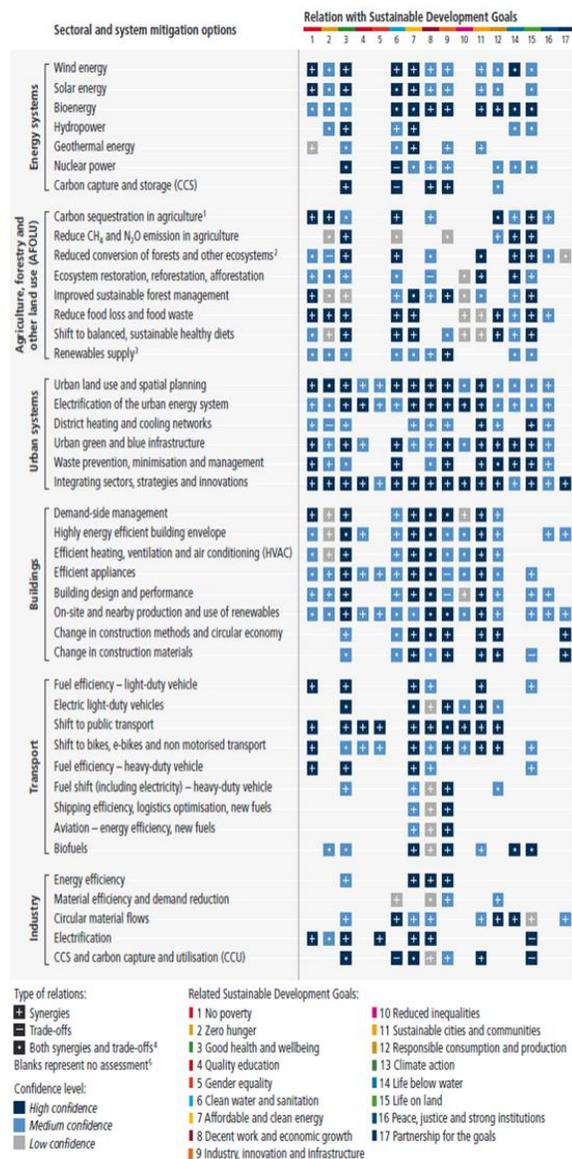
\* UNDESA, UNFCCC, the Ministry of the Environment of Japan (MoEJ), the United Nations University (UNU) and the Institute for Global Environmental Strategies (IGES).

## 2. MAPPING EVIDENCE

### 2.1 The Big Picture

**Research underlines the importance of synergies—but knowledge gaps remain.** The Global Sustainable Development Report called for integrated actions across its six key “entry points,” noting that recognizing interlinkages can “offer the most efficient – or sometimes the only – way to make progress [in these areas].”<sup>8</sup> Figure 1, from the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, also shows strong synergies—particularly for urban systems—across key mitigation options and the SDGs.<sup>9</sup> At the same time, assessments are absent or not definitive for more than half of the surveyed mitigation options and SDGs. Some of the mitigation options with the greatest knowledge gaps include transport, energy, industry and agriculture. Meanwhile, strengthening evidence on relationships between mitigation and SDGs 4, 5, 10, 16 and 17 is also a need.

**Figure 1. An Overview of Synergies and Trade-offs<sup>9</sup>**



Effective harnessing of climate and SDG synergies must not be limited to mitigation alone, but should also include assessing adaptation action. Adaptation includes measures and projects that are meant to cope with perceived or expected impacts of

climate change and the associated risks. Some adaptation projects may well be costly. Specific adaptation options may benefit some, but negatively affect the interests of others. Some adaptation measures also may have unintended external effects, if not based on sufficient scientific research and evidence. Therefore, in order to ensure a just, inclusive and effective adaptation programme, all options should be reviewed in a synergistic manner.

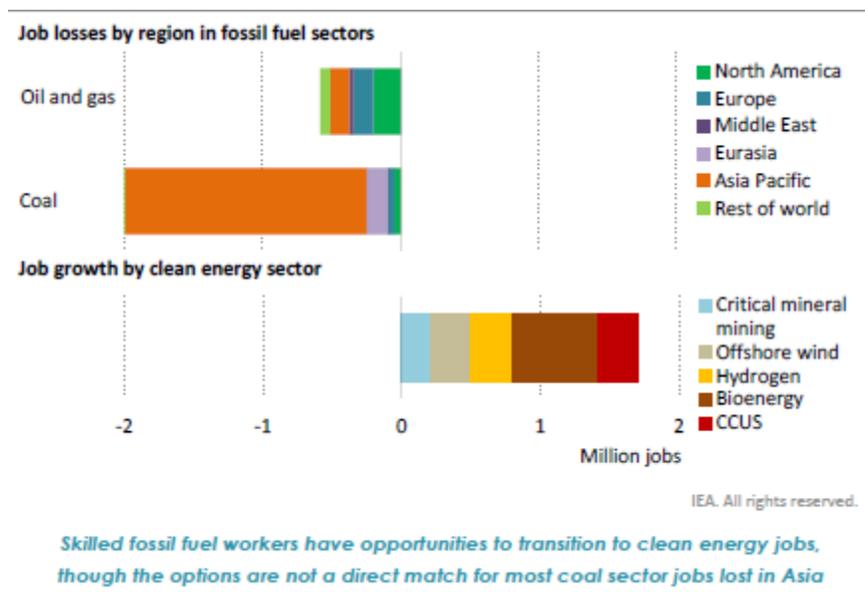
The IPCC points out several climate responses deliver both mitigation, adaptation and other SDG benefits.<sup>9</sup> These include, for instance, nature-based solutions (NbS) and the restoration of mangroves and coastal wetlands to increase its capacity as a carbon sink while reducing coastal erosion and protecting against storm surges. However, trade-offs also need to be considered when prioritising mitigation at the cost of adaptation or basic human needs such as food security.<sup>10</sup>

## 2.2. A Closer Look

### ENERGY AND URBAN SYSTEMS

The area with the longest history of work on these themes is co-benefits from climate-related interventions in energy, urban and related systems. Some of the early work on co-benefits focused on differences in estimates between developed and developing countries. For instance, a review of more than 30 studies has shown that air quality and health co-benefits of climate related interventions tend to be higher in developing countries and their cities, if compared with developed countries.<sup>11</sup> Other studies in China reveal a 1.5 °C target scenario could avoid anywhere between an estimated “118,000 and 614,000 PM<sub>2.5</sub> attributable deaths...in 2030 and 2050.”<sup>12</sup> Similar findings have demonstrated that the benefits of California’s pledge to achieve net-zero emissions by 2050 are more than double the annual costs.<sup>13</sup> While this evidence is needed, extending the use of co-benefits tools to look beyond first-order impacts to wider streams of cost and benefits could enrich understandings of opportunities and constraints on integration. For instance, the World Energy Outlook demonstrated that investments in clean energy and infrastructure (estimated at USD 4 trillion USD by 2030) needed to meet the Paris Agreement 1.5°C goal would create decent jobs and drive social transformation, impacting efforts to achieve just and inclusive societies.<sup>14</sup>

Figure 2. Job Creation and Net Zero Carbon Pathways<sup>14</sup>



**Reducing emissions in heavy industry and transport sectors has significant health benefits and related cost savings.** In recent years, a complementary line of work on co-benefits has emerged from interventions in key sectors in urban or industrializing areas. Studies have shown significant improvements in air quality, health and climate stability from gains in energy efficiency in cement, steel and other heavy industries.<sup>15,16</sup> In addition, improvements in vehicle technologies, shifting to public transport and changes in urban design can bring about marked reductions in multiple pollutants (PM<sub>2.5</sub> and NO<sub>x</sub>), premature death and illnesses and greenhouse gas (GHG) emissions.<sup>17-19</sup> Meanwhile, 3R (reduce, reuse, recycle) and circular economy policies can

ameliorate the harmful environmental and social impacts of untreated waste streams while also leading to reductions in methane and other GHGs.<sup>20,21</sup> The building sector further offers a wide variety of benefits that can contribute to climate and other SDGs. Perhaps most importantly in this policy area, carefully planned interventions can help poorer pockets of the urban population in slums move to more sustainable habitats.

Many of the strongest synergies require redesign of systems in urban areas that are likely to be home to over 70 per cent of the population by 2050. Cities generate around 70 per cent of global carbon dioxide (CO<sub>2</sub>) emissions and 80 per cent of global GDP; they therefore present a dynamic locus for action on climate and SDGs. One of the reasons they exhibit those qualities is they frequently possess the authority to redesign infrastructures and urban forms that otherwise lock in unsustainable development patterns. There are potential streams of synergies flowing from redesigning unsustainable systems. For instance, planning for more green spaces can promote sustainable lifestyles, build social capital, and increase carbon uptake and storage. Some of the efforts cities make to achieve net-zero emissions do not stop at their boundaries but have ripple effects on supply chains and other sectors beyond their jurisdiction.<sup>22</sup>

**The analytical tools used to estimate co-benefits may nonetheless be more revealing by looking at wider streams of benefits.**

This wider view could illustrate not just the magnitude of benefits but to whom they accrue. It could further highlight links between a range of environmental concerns and decent jobs, educational opportunities and well-being.

While synergies are often visible and desirable, they may come with less visible and undesirable trade-offs; both need to be anticipated and addressed. Some trade-offs result from end-of-the-pipe technologies that limit pollution but increase CO<sub>2</sub>.<sup>23</sup> Others stem from shifting from fossil fuels to utility-scale bioenergy that, in turn, increases health-damaging air pollution.<sup>24</sup> A third set of conflicts involves socioeconomic impacts such as job losses or widening equity gaps from energy transitions.<sup>25</sup> An overly narrow focus on large-scale renewable energy may overlook the three billion people (40 per cent of the world) lacking access to clean, reliable energy, suggesting trade-offs may depend upon where one draws their system boundaries.

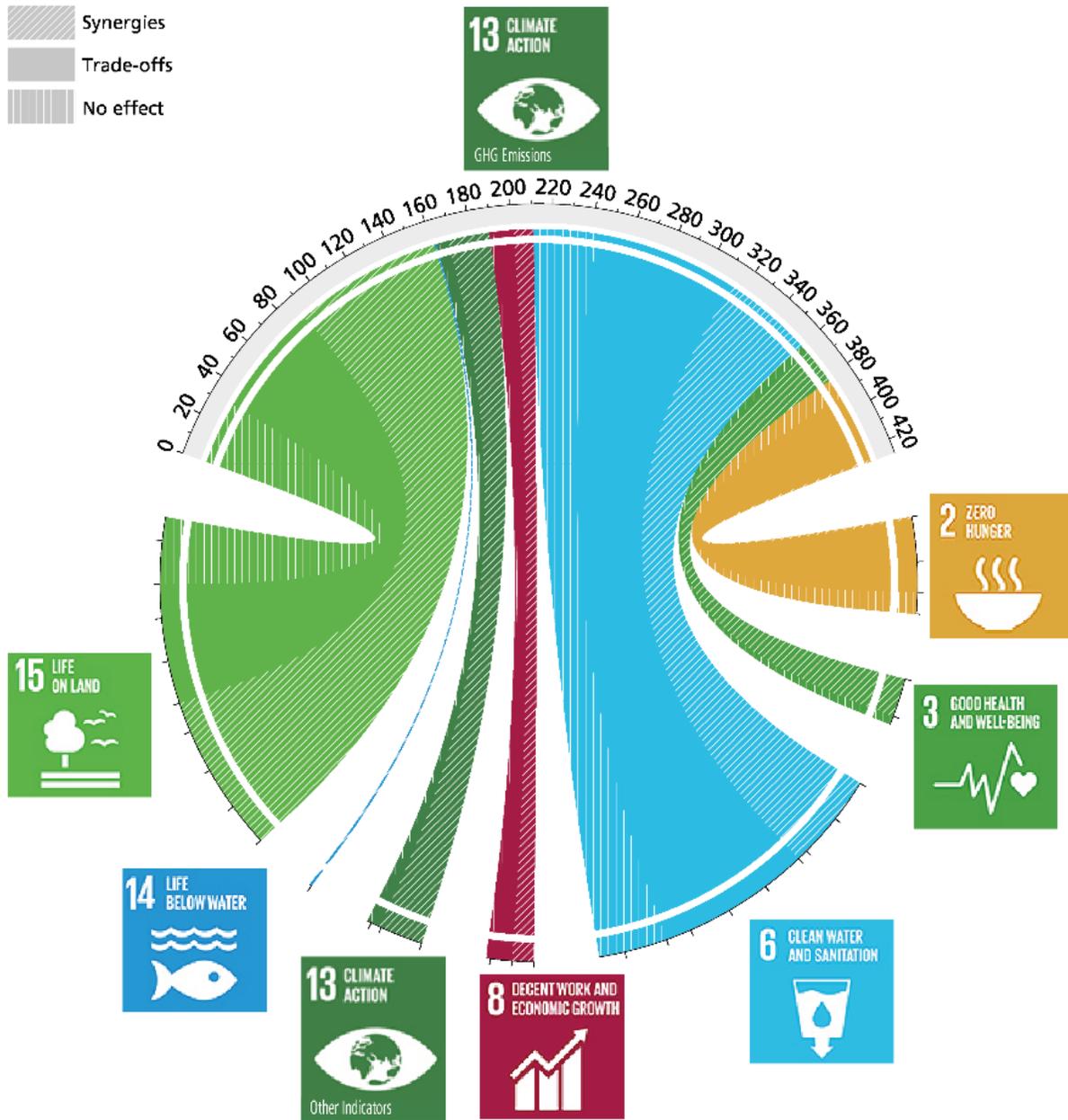
## **FOOD, WATER, FORESTS AND LAND USE SYSTEMS**

A useful starting point for assessing synergies and trade-offs outside of energy and urban systems is the water-food-energy nexus (WFEN).<sup>26,27</sup> As relevant models quantifying the impacts of WFEN have grown in number and sophistication, the approach has broadened its appeal to a diversity of stakeholders and offered useful insights into policy designs.<sup>28,29</sup> For example, the WFEN has helped demonstrate in India that shifting USD five billion for subsidised pumping of irrigation water to water-use efficiency would save 102 billion m<sup>3</sup> of water and 82,000 GWh of energy while reducing 72 million tonnes CO<sub>2</sub> emissions.<sup>30</sup> Meanwhile, in South Africa (Mpumalanga) the approach has been used to illustrate that shifting away from mining would help improve air and water quality.<sup>31</sup> While this evidence is needed, similar to co-benefits, extending the use of WFEN analytical tools to wider streams of ecological and socioeconomic benefits could prove illuminating.

**Synergies and trade-offs with climate change and food systems warrant more attention.** In this case, research suggests reducing food waste and changing diet patterns could lower agricultural GHG emissions, while preserving land and water, and curbing nitrogen and phosphorous levels.<sup>32</sup> Apart from being morally desirable, a 'no food waste' scenario could reduce crop and livestock production by 490 and 190 Mt; lower agricultural land use by 57 Mha; fertilizers and water requirements by 10 Mt and 110 km<sup>3</sup>; and GHG emissions by 410 MtCO<sub>2</sub>e year relative to a 2030 baseline.<sup>33</sup> Other illustrations suggest possible links between food and sustainable waste reclamation.

**An integrated approach to climate and biodiversity is sorely needed.** It is well established that climate changes can degrade natural system capacities to sustain diverse life forms. For instance, a study of more than 100,000 species revealed that 1.5°C scenarios could lead to "6% of insects, 8% of plants and 4% of vertebrates...to lose over half of their climatically determined geographic range."<sup>34</sup> To be sure, keeping 1.5°C within reach and achieving the SDGs requires steep investments, but preserving ecosystem services provided by insect species and other ecosystems can save an estimated value of USD 33 trillion globally per year.<sup>35</sup> Given this savings, the cost of achieving ambitious SDG targets (including SDG 13 on climate action) has been estimated at significantly less—around USD 5 to 7 trillion per year.<sup>36</sup> It is clear that action now is going to be less costly than damage control later.

**Figure 3: Synergies and Trade-offs between Energy Crops, GHGs and other SDGs<sup>37</sup>**



**Land use and climate may also present troubling trade-offs.** As suggested in Figure 3, using land to grow biofuels and energy crops presents sizable trade-offs, as it tends to monopolize land that could otherwise have been used to grow food crops for human consumption (see the large swaths of diagonal thatched portion of the green space). However, this depends, to some degree, on the previous use of the land in question and feedstock type. More straightforward is aggressive land clearing for palm oils or feedstock production. Such clearing practices destroy carbon sinks and generate air and water pollution.

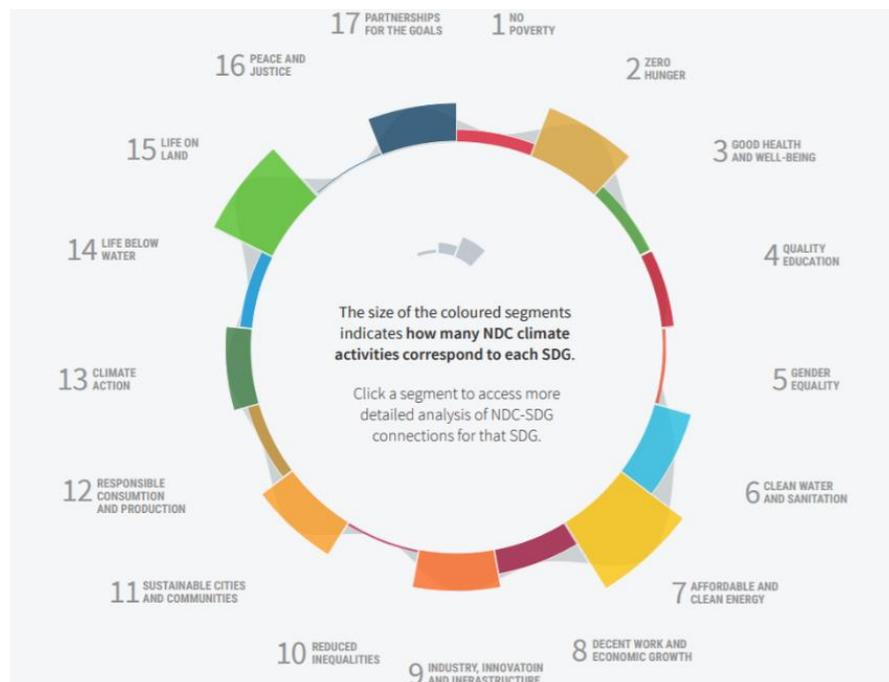
### 2.3 Leaving No One Behind

Climate action can produce uneven impacts on the achievement of the SDGs, with greater progress potentially being made on some targets than on others, unless specific measures are otherwise implemented. A review of Nationally Determined Contributions (NDCs) shows that the socially-oriented SDGs are highly under-represented in the NDCs compared to the environmental and economic goals, in particular SDG 3 (health), SDG4 (education), and SDG 5 (gender equality). (See Figure 4)

**Social equity and inclusiveness must be at the centre of just, inclusive and equitable transitions.** A just, inclusive and equitable transition, if designed and implemented properly, will enhance human well-being, health and capabilities, increase resilience, and drive innovation towards a sustainable society at all levels, while also driving huge investments towards the achievement of the SDGs and the Paris Agreement.

To leave no one behind, policymakers should explicitly prioritize the needs of the vulnerable by leveraging multiple potential opportunities for synergies and policy coherence. Such measures can focus on, for example, empowering people by ensuring gender equality in its multiple dimensions; enhancing win-win outcomes for health and education, putting the needs of children, youth, local communities, indigenous populations and other vulnerable populations first; and creating new jobs and employment opportunities for vulnerable groups and communities.

**Figure 4: Connections between the Paris Agreement and the 2030 Agenda through NDCs<sup>38</sup>**



### 3. ACCELERATING SYNERGISTIC ACTION: MEANS OF IMPLEMENTATION

Strategic levers (means of implementation) need to be coherently deployed to bring about the necessary transformations in a way that can best harness unique local conditions. Realising climate and SDG synergies requires systematic change to current policies, institutions and societal systems. This process will require concerted action from a variety of stakeholders, tailored to specific local needs and conditions. Dealing with such complex interlinkages between the various dimensions that cross-cut climate action and the SDGs poses a significant challenge for decision-makers now and in the future:

- **Governance**, supported by long-term visions, planning and well-designed policies and regulations that engage all stakeholders through multi-stakeholder participatory processes to leave no one behind.
- **Capacity building**, to strengthen the skills, abilities, knowledge, processes and resources required for synergistic action, especially in support of developing countries.
- **Finance and investment**, supported by policies and incentives for action towards sustainable and just outcomes, while avoiding undesirable trade-offs. Ensuring strong alignment and coherence between the financial investments needed for climate action (in the area of US\$5 trillion annually by 2030) and those for the achievement of the SDGs (about US\$ 5-7 trillion per year) is essential to maximise the benefits of synergistic action.
- **Innovation, technology and data**, supported by both proven technologies and strategic investments in new solutions. Overcoming the digital divide is essential for ensuring access to data, information and knowledge, and preventing a further widening of national and international disparities and gaps.
- **Transformative partnerships**, supported by government, business and civil society sectors, that are effective, inclusive and accountable.

#### THE WAY FORWARD

The multiple interlinkages between the 2030 Agenda and the Paris Agreement strongly indicate that integrated and synergistic implementation of both would lead to significant benefits. Much of the evidence suggests that delivering win-win outcomes for climate action and the SDGs is entirely possible, but the full potential of such synergistic outcomes can only be realised if deliberate action is taken.

Carefully crafted enabling environments can translate evidence into action. More attention is needed to multi-level governance, deliberative decision-making, multi-instrument policy mixes, innovative financial arrangements and robust data systems. Which of these elements countries need is likely to depend on existing institutions and capacities to coordinate different interests.<sup>39</sup>

There is an urgent need for accelerating and scaling-up synergistic implementation to realise the SDGs and a climate-resilient, net-zero future. The *Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development* aims to make a contribution in this regard, by sharing experiences and discussing a way forward including on the following issues:

- **Strengthening the evidence base for synergistic action.** Through the annual climate-SDG synergy conference and other related engagements, we must continue to share experiences globally on policies, programmes, implementation mechanisms, multi-stakeholder action and partnerships for both the SDGs and for climate action so that co-benefits are maximized and trade-offs are minimized.
- **Exploring holistic integrated approaches that cut across space, systems and stakeholders.** Many emerging approaches, including those discussed in this note and others such as the CES (Figure 5), can potentially shift norms on integration. Comprehensive global analytical efforts will be required to consolidate and assess evidence from around the world and present coherent, integrated approaches and policy-relevant recommendations that can help

fill the knowledge gaps and provide scientific underpinning for accelerated synergistic action towards 2030 and beyond.

- **Scaling up capacity building.** Capacity building to empower all stakeholders, institutions and systems is essential. Multi-stakeholder partnerships comprised of governments, academia, international organizations, the private sector and civil society can help in this regard.
- **Increasing sharing of experiences at all levels.** Facilitating regional or thematic exchanges of practical experiences on advancing climate and SDG synergies, e.g. in the context of future UNFCCC Regional Climate Weeks or other relevant Conference events, can strengthen knowledge and communities of practices tailored to local conditions and specific issue-based needs.
- **Enhancing integrated planning.** Some countries have factored synergies into National Determined Contributions (NDCs), Voluntary National Reviews (VNRs), and National Biodiversity Strategies and Action Plans (NBSAPs). A common platform may help analyse interlinkages and mainstream integrated decision-making. Participants might reflect on the kind of platform that could be most helpful in this regard.
- **Partnerships for transformation.** We need all actors – government, the private sector, civil society, academia, communities and individuals – to work together to deliver on the full potential of synergistic action to achieve the 2030 Agenda and the Paris Agreement. Action by youth must play a game-changing role in a multi-decade journey of transformation across the world.

We must capitalize on the critical interlinkages between climate action and the SDGs, taking bold, coordinated action towards sustainable development. Relevant global milestones such as the SDG Summit (in 2023 and 2027), High-level Political Forum (HLPF), UNFCCC COP and on-going global stocktaking efforts under the Paris Agreement must be leveraged to strengthen synergistic action at all levels. The same goes for other relevant global processes related to any of the SDGs, including biodiversity, disaster risk reduction, gender equality, education, health, food security, water, energy, decent jobs, digital cooperation, finance and investment.

**Figure 5: Circulating and Ecological Sphere (CES)**<sup>40</sup>



## Selected References

1. Farzaneh H, Zusman E, and Chae Y, ed. *Aligning Climate Change and Sustainable Development Policies in Asia*. Springer; 2021.
2. UNFCCC, UNDESA, UNITAR. *Harnessing Climate and SDGs Synergies: Raising Ambition in the Era of Paris+5 and Pandemic Recovery*.; 2021. Accessed July 3, 2022. [https://sdgs.un.org/sites/default/files/2021-07/Raising\\_Ambition\\_in\\_the\\_Era\\_of\\_Paris%2B5\\_and\\_Pandemic\\_Recovery.pdf](https://sdgs.un.org/sites/default/files/2021-07/Raising_Ambition_in_the_Era_of_Paris%2B5_and_Pandemic_Recovery.pdf)
3. UNITAR. E-learning Course: Harnessing Climate & SDGs Synergies | UNITAR. Published online 2021. Accessed July 1, 2022. <https://event.unitar.org/full-catalog/e-learning-course-harnessing-climate-sdgs-synergies>
4. UNEP. *Emissions Gap Report 21*.; 2021. <https://www.unep.org/resources/emissions-gap-report-2021>
5. Wiedmann TO, Schandl H, Lenzen M, et al. The material footprint of nations. *Proc Natl Acad Sci U S A*. 2015;112(20):6271-6276. doi:10.1073/pnas.1220362110
6. Sanderson BM. Assessing the costs of historical inaction on climate change. doi:10.1038/s41598-020-66275-4
7. Iacobuță GI, Brandi C, Dzebo A, Elizalde Duron SD. Aligning climate and sustainable development finance through an SDG lens. The role of development assistance in implementing the Paris Agreement. *Glob Environ Chang*. 2022;74. doi:10.1016/j.gloenvcha.2022.102509
8. United Nations. Global Sustainable Development Report 2019. Published online 2019. Accessed June 27, 2022. <https://www.un.org/development/desa/publications/global-sustainable-development-report-2019.html>
9. IPCC. *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. (Shukla PR, Skea J, Slade A, et al., eds.). Cambridge University Press; 2022. Accessed July 1, 2022. <https://www.ipcc.ch/assessment-report/ar6/>
10. IPCC. *Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press; 2014.
11. Nemet GF, Holloway T, Meier P. Implications of incorporating air-quality co-benefits into climate change policymaking. *Environ Res Lett*. 2010;5(1):014007.
12. Tang R, Zhao J, Liu Y, et al. Air quality and health co-benefits of China's carbon dioxide emissions peaking before 2030. *Nat Commun*. 2022;13(1). doi:10.1038/s41467-022-28672-3
13. Wang T, Jiang Z, Zhao B, et al. Health co-benefits of achieving sustainable net-zero greenhouse gas emissions in California. *Nat Sustain*. Published online 2020:1-9.
14. International Energy Agency. *World Energy Outlook 2021*. Published online 2021:1-386.
15. Zhang, S., Worrell, E. and Crijns-Graus W. Evaluating co-benefits of energy efficiency and air pollution abatement in China's cement industry. *Appl Energy*. 2015;147:pp.192-213.
16. Zhang, S., Worrell, E., Crijns-Graus, W., Wagner, F. and Cofala J. Co-benefits of energy efficiency improvement and air pollution abatement in the Chinese iron and steel industry. *Energy*. 2014;78:333-345.
17. Pathak M, Shukla PR. Co-benefits of low carbon passenger transport actions in Indian cities: Case study of Ahmedabad. *Transp Res Part D Transp Environ*. 2016;44:303-316.
18. Dhar S, Pathak M, Shukla PR. Electric vehicles and India's low carbon passenger transport: a long-term co-benefits assessment. *J Clean Prod*. 2017;146:139-148.
19. Xia, T., Nitschke, M., Zhang, Y., Shah, P., Crabb, S. and Hansen A. Traffic-related air pollution and health co-benefits of alternative transport in Adelaide, South Australia. *Environ Int*. 2015;74:pp.281-290.
20. Chalcharoenwattana A, Pharino C. Co-benefits of household waste recycling for local community's sustainable waste management in Thailand. *Sustainability*. 2015;7(6):7417-7437.
21. Menikpura SNM, Santo A, Hotta Y. Assessing the climate co-benefits from Waste Electrical and Electronic Equipment (WEEE) recycling in Japan. *J Clean Prod*. 2014;74:183-190. doi:10.1016/j.jclepro.2014.03.040
22. The New Climate Economy. *Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times*.; 2018. [www.newclimateeconomy.report](http://www.newclimateeconomy.report)
23. Takemura T. Return to different climate states by reducing sulphate aerosols under future CO2 concentrations. *Sci Rep*. 2020;10(1). doi:10.1038/s41598-020-78805-1
24. Williams ML, Lott MC, Kitwiroon N, et al. The Lancet Countdown on health benefits from the UK Climate Change Act: a modelling study for Great Britain. *Lancet Planet Heal*. 2018;2(5):e202-e213. doi:10.1016/S2542-5196(18)30067-6
25. Galgóczi B. Just transition on the ground: Challenges and opportunities for social dialogue. <https://doi.org/10.1177/0959680120951704>. 2020;26(4):367-382. doi:10.1177/0959680120951704
26. Middleton C, Allouche J, Gyawali D, Allen S. The rise and implications of the water-energy-food nexus in Southeast Asia through an environmental justice lens. *Water Altern*. 2015;8(1):627-654.
27. Pandey VP, Shrestha S. Evolution of the nexus as a policy and development discourse. Published online 2017.
28. Cai X, Wallington K, Shafiee-Jood M, Marston L. Understanding and managing the food-energy-water nexus - opportunities for water resources research. *Adv Water Resour*. 2018;(111):259-273.
29. White DJ, Hubacek K, Feng K, Sun L, Meng B. The Water-Energy-Food Nexus in East Asia: A tele-connected value chain analysis using inter-regional input-output analysis. *Appl Energy*. 2018;210:550-567. doi:10.1016/j.apenergy.2017.05.159
30. Bao PN, Mitra BK, Sharma D, Islam TG, Thao MPT, Kuyama T. *Governing the Water-Energy-Food Nexus Approach for Creating Synergies and Managing Trade-Offs*.; 2018. <https://www.apn-gcr.org/resources/files/original/2ddd451c4775e2e8604d29a82878fe28.pdf>
31. Simpson G, Berchner M. Water-energy nexus: Measuring integration - Towards a water-energy-food nexus index. *Water Wheel*. 2017;16(1):22-23.
32. Springmann M, Clark M, Mason-D'Croz D, et al. Options for keeping the food system within environmental limits. *Nature*. 2018;562(7728):519-525. doi:10.1038/s41586-018-0594-0
33. Han L, Cai S, Gao M, et al. Selective Catalytic Reduction of NOx with NH3 by Using Novel Catalysts: State of the Art and Future Prospects. *Chem Rev*. 2019;119(19):10916-10976. doi:10.1021/acs.chemrev.9b00202
34. Warren R, Price J, Graham E, Forstenhaeusler N, VanDerWal J. The projected effect on insects, vertebrates, and plants of limiting global warming to 1.5°C rather than 2°C. *Science (80- )*. 2018;360(6390):791-795. doi:10.1126/science.aar3646
35. Schowalter TD, Noriega JA, Tscharrntke T. *Insect Effects on Ecosystem Services-Introduction*.; 2017. Accessed June 29, 2022. <http://www.elsevier.com/open-access/userlicense/1.0/>
36. Vorisek D, Yu S. *Understanding the Cost of Achieving the Sustainable Development Goals*. World Bank, Washington, DC; 2020. doi:10.1596/1813-9450-9164
37. Vera I, Wicke B, Lamers P, et al. Land use for bioenergy: Synergies and trade-offs between sustainable development goals. *Renew Sustain Energy Rev*. 2022;161(March). doi:10.1016/j.rser.2022.112409
38. Dzebo A, Janetschek H, Brandi C, Iacobuta G. *Connections between the Paris Agreement and the 2030 Agenda: The Case for Policy Coherence*. 2019.
39. Amanuma N, Zusman E, Lee SY, et al. Governance for Integrated Solutions to Sustainable Development and Climate Change: From Linking Issues to Aligning Interests. (Zusman E, Amanuma N, eds.). IGES; 2018. <https://www.iges.or.jp/en/about/staff/zusman-eric?page=%2C2>
40. Ortiz-Moya F, Kataoka Y, Saito O, Mitra BK, Takeuchi K. Sustainable transitions towards a resilient and decentralised future: Japan's Circulating and Ecological Sphere (CES). *Sustainability Science*. 2021 Sep;16(5):1717-29..

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