



NDC ASPECTS

NDC ASPECTS - Assessing sectoral governance gaps and policy options (Deliverable 6.1)

WP6 – Global Governance and International Cooperation

Sebastian Oberthür, Simon Otto, Adrián Vidal , Catherine Hall, Chun Xia,
Dirk-Jan Van de Ven, Harro van Asselt, María José Sanz, Nicolas Kreibich,
Silvestre García de Jalón and Wolfgang Obergassel

Vrije Universiteit Brussel, Basque Centre for Climate Change, University
of Eastern Finland & Wuppertal Institute

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Sebastian Oberthür	Vrije Universiteit Brussel (VUB)
Sebastian.Oberthuer@vub.be	https://brussels-school.be
Simon Otto	Vrije Universiteit Brussel (VUB)
simon.otto@vub.be	https://brussels-school.be
Adrián Vidal	BC3 Basque Centre for Climate Change
Catherine Hall	University of Eastern Finland
Chun Xia	Wuppertal Institute
Dirk-Jan Van de Ven	BC3 Basque Centre for Climate Change
Harro van Asselt	University of Eastern Finland
María José Sanz	BC3 Basque Centre for Climate Change
Nicolas Kreibich	Wuppertal Institute
Silvestre García de Jalón	BC3 Basque Centre for Climate Change
Wolfgang Obergassel	Wuppertal Institute

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Responsible Authors:	Sebastian Oberthür (VUB) & Simon Otto (VUB)
Contributors:	Adrián Vidal (BC3), Catherine Hall (UEF), Chun Xia (WI), Dirk-Jan Van de Ven (BC3), Harro van Asselt (UEF), María José Sanz (BC3), Nicolas Kreibich (WI), Silvestre García de Jalón (BC3), & Wolfgang Obergassel (WI)
Internal Reviewers:	Adam Hinge (Sustainable Energy Partnerships), Dirk Nemitz (UNFCCC Secretariat), Frederic Rudolph (WI), Hilton Trollip (University of Cape Town), Lukas Hermwille (WI), & Saritha Sudharmma Vishwanathan (Indian Institute of Management)

Preface

The NDC ASPECTS project provides inputs to the Global Stocktake under the Paris Agreement (PA) and supports the potential revision of existing Nationally Determined Contributions (NDCs) of the PA's parties, as well as development of new NDCs for the post 2030 period. The project focuses on four sectoral systems that are highly relevant in terms of the greenhouse gas emissions they produce yet have thus far made only limited progress in decarbonization. Advancing these transformations will require to understand and leverage the Eigenlogic of those systems and to take into account specific transformation challenges. These sectors are transport & mobility (land-based transport and international aviation & shipping), emission-intensive industries, buildings, and agriculture, forestry & land-use, including their supply by and interaction with the energy conversion sector.

1. Changes with respect to the DoW

Overall, Task 6.1 was largely executed as planned in the original Description of Work (DoW). We made four small adaptations. First, the analysis of the global governance of international transport was covered in the NDC Aspects policy brief ‘Article 6 and CORSIA after Glasgow: Ready for take-off?’ from September 2022. Accordingly, the article manuscript on the global governance for the transport sector focuses exclusively on land transport. Second, the role of the UN Sustainable Development Goals (SDGs) in the global governance for the respective sectors was considered during the research process, as reflected in the discussion of Agenda 2030 (as well as other relevant international sustainable development governance processes) in several of the sectoral article manuscripts. However, a full-fledged analysis of the role of the SDGs in the context of sectoral governance, including analysing trade-offs between climate mitigation and the SDGs, would have distracted from the principal aim of the analysis of how global sectoral governance can help overcome sectoral transformation barriers. The interrelations of the SDGs with the decarbonisation of the four sectors will be further analysed in Task 4.3-4.6, including potential co-benefits and trade-offs. Third, because of the different timings of the sectoral conversations it was not possible to present and discuss all sectoral analyses there as originally foreseen. Where this was not possible, sectoral experts and stakeholders were consulted through other means, especially interviews. Finally, the orchestration and coordination of existing institutional sub-complexes was included as a sixth governance function in the research framework rather than an option to close identified governance gaps. All these adaptations can be considered minor, since the sectoral governance analyses were otherwise conducted as planned and delivered the intended results.

2. Dissemination and uptake

As detailed in the DoW and the project’s Communication, Dissemination and Exploitation Plan, the deliverable will be made available on the project website and advertised via the project’s newsletter and social media channels. In addition, the resulting four manuscripts will be submitted, in somewhat further revised form, to relevant academic journals. In accordance with the DoW, they will also provide the basis for four policy papers targeting sectoral policymakers (MS 47-50). The policy brief on Article 6 and CORSIA has already been published on the project website and advertised via the project’s newsletter and social media channels. Furthermore, draft manuscripts of the AFOLU, energy-intensive industry and land transport articles were presented by the respective authors on a virtual panel on ‘Sectoral options for advancing global climate governance’ at the 2022 Toronto Conference on Earth System Governance (October 2022).

The deliverable will be of use to different groups of stakeholders:

- Policymakers and societal stakeholders at national, European and international level can draw on the detailed analysis of the current global governance landscape for the four sectors to identify priority areas for action and on the analysis of institutional options to address remaining governance gaps.
- The theoretical framework for the assessment of institutional options developed in the research framework and applied across the four article manuscripts is of wider relevance to the academic literature on sectoral global governance.
- The sectoral analyses enshrined in the article manuscripts and the policy brief also constitute a significant contribution to scholarly debates on global governance in the four sectoral systems addressed and, more generally, sectoral climate governance.







3. Short Summary of results

This report assesses sectoral governance gaps and potentials to identify means to improve global governance to enhance the realisation of sectoral transformational pathways across four hard-to-abate sectors, namely Agriculture, Forestry and Other Land Use (AFOLU), energy-intensive industry, buildings and transport. The sectoral analyses build on a common research framework that provides methodological guidance on how to analyse the existing sectoral governance landscapes and the assessment of options to enhance global governance (see MS42). The conceptual framework identifies six functions that international governance can perform – i.e. (1) guidance and signalling; (2) setting rules to facilitate collective action; (3) transparency and accountability; (4) means of implementation; (5) knowledge diffusion and learning; and, (6) orchestration and coordination – to help solve problems such as climate change. By applying this framework, the four selected governance analyses (1) take stock of the existing activities of international institutions (mapped against the various governance functions) and (2) identify areas where sectoral agreements and coalitions could help realise transformational pathways. To assess options for advancing sectoral climate governance, we apply a common set of broad assessment criteria for all case studies, including (a) membership of the institution; (b) institutional strength and capacity; (c) legitimacy and authority; and (d) political feasibility. On this basis, we identify and assess different options to close existing governance gaps, such as (1) reforming one or more existing institutions, or (2) creating a new institution.

4. Evidence of accomplishment

The evidence of accomplishment of this deliverable is provided through the submission of this report. In accordance with the DoW, the work has resulted in four article manuscripts that provide detailed and up-to-date analyses of global climate governance in the four sectors in focus (including governance options for advancing transformational sectoral pathways moving forward) and are attached to this report (D6.1a-d), complemented by one policy brief that has already been published on the project website and is also reported as part of D7.8 – Collection of Sectoral Transformation Policy Papers published during the first half of the project.

LIST OF PARTICIPANTS

	Participant Name	Short Name	Country	Logo
1	Wuppertal Institut Fuer Klima, Umwelt, Energie gGmbH	WI	Germany	 Wuppertal Institut
2	Vrije Universiteit Brussel	VUB	Belgium	 BRUSSELS SCHOOL OF GOVERNANCE
3	Institut du Développement Durable et des Relations Internationales	IDDRI	France	 IDDRI
4	Deutsches Zentrum für Luft- und Raumfahrt e.V.	DLR	Germany	 Deutsches Zentrum für Luft- und Raumfahrt German Aerospace Center
5	E3-MODELLING S.A.	E3M	Greece	 E3 Modelling Energy Economy Environment
6	Asociación BC3 Basque Centre for Climate Change – Klima Aldaketa Ikergai	BC3	Spain	 BASQUE CENTRE FOR CLIMATE CHANGE Klima Aldaketa Ikergai Sustainability, that's it!
7	Ita-Suomen Yliopisto	UEF	Finland	 UNIVERSITY OF EASTERN FINLAND
8	Indian Institute of Management	IIMA	India	 IIMA AHMEDABAD
9	University of Cape Town	UCT	South Africa	 UNIVERSITY OF CAPE TOWN IYUNIVESITHI YASAKAPA • UNIVERSITEIT VAN KAAPSTAD
10	Tsinghua University	TU	China	 清华大学 Tsinghua University
11	Institut Pertanian Bogor	IPB	Indonesia	 IPB University Bogor Indonesia
12	University System of Maryland	UMD	USA	 UNIVERSITY SYSTEM OF MARYLAND SCHOOL OF PUBLIC POLICY CENTER FOR GLOBAL SUSTAINABILITY
13	HOLISTIC P.C.	HOLISTIC	Greece	 HOLISTIC

Executive Summary

This report assesses sectoral governance gaps and potentials to identify means to improve global governance to enhance the realisation of transformational sectoral pathways across four hard-to-abate sectors, namely Agriculture, Forestry and Other Land Use (AFOLU), energy-intensive industry, buildings, and transport. The analysis is captured in five outputs (four article manuscripts and one policy brief), which are summarised below. The four article manuscripts are attached to this report (D6.1a-d). The policy brief has already been published on the project website and is also reported as part of D7.8 - Collection of Sectoral Transformation Policy Papers published during the first half of the project.

Planting the seeds of mitigation: climate governance gaps and options for the land use sector (D6.1a)

By Adrián Vidal, María José Sanz, Silvestre García de Jalón & Dirk-Jan Van de Ven

Land-based activities are increasingly acknowledged for their important ongoing and potential contributions to the Paris Agreement's mitigation target of reaching carbon neutrality in the second half of this century by reducing emissions and increasing removals from the sector, as well as by its capacity to produce biomass to substitute carbon-intensive products. Land use also plays an important role in short- and medium-term mitigation targets set out in countries' Nationally Determined Contributions (NDCs) and 2030 strategies and plans. At the same time, land is a critical resource for multiple developmental and environmental objectives, providing food, fodder, fibre, fuel, and a multitude of other goods and ecosystem services that are fundamental to human well-being. Due to its finite nature, land is subject to competition among these different uses and objectives, and mid to long-term planning of land use and enhancing governance is therefore fundamental to ensure socially and environmentally sound arbitrages among them. As ecosystems (managed and unmanaged) are increasingly impacted by climate change, it is therefore needed that mitigation measures are compatible with adaptation measures. Overall, to achieve sustainability of the sector is also necessary the preservation of other ecosystem services and respect for local communities' rights, which requires a multiscale and fit-for-purpose governance structure. Despite some recent progress, governance structures and plans rarely address the multiple objectives listed above. For the purpose of the paper, the Intergovernmental Panel for Climate Change (IPCC) Agriculture, Forestry and other Land Use (AFOLU) sector approach is used. This paper assesses the AFOLU governance instruments beyond the domestic scale to enhance ambition and implementation of NDCs by acting in the sector while integrating environmental and developmental objectives other than mitigation and points out the barriers and possible solutions to the governance gaps that are identified.

Global Governance for the Decarbonisation of Energy-Intensive Industries: Exploring Sectoral Options (D6.1b)

By Simon Otto & Sebastian Oberthür

To achieve the goals of the Paris Agreement the deep decarbonisation of energy-intensive industries (EIs) by mid-century is essential. However, their transition is hampered by several crucial economic and political barriers, such as limited availability of mitigation technologies, high capital investment needs and long lifecycles, and strong global competition. Global governance and sector-specific initiatives offer great potential to address these barriers and accelerate EI decarbonisation globally – a

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potential that has so far remained underexploited, however. This article identifies and assesses in detail options of global governance for closing existing governance gaps and advancing the decarbonisation of the main EILs (i.e., steel, cement and concrete, chemicals, and aluminium). To this end, it proceeds in three steps. It first determines the theoretical potential of international cooperation to address barriers and challenges to the decarbonisation of EILs along six governance functions, i.e. signal and guidance, rule setting, transparency and accountability, means of implementation, knowledge and learning, and orchestration and coordination. It then identifies existing gaps in the global governance of decarbonising EILs, by comparing the theoretical potential of global governance with the existing supply of global governance across the six functions. It finds that recently established global sectoral initiatives provide a promising basis for further enhancing governance, in particular regarding the functions of signal and guidance, means of implementation, as well as rule setting. On this basis, the article proceeds to identifying and assessing concrete options for enhancing the global climate governance of EILs to address the gaps identified and drive forward the transition. It analyses if and how reforming existing institutions can address the identified governance gaps, before discussing the possible creation of new institutions to address remaining gaps. Existing institutions offer a good starting to advance global governance on many functions, but a new institution can significantly enhance existing efforts and is required to address issues regarding international competition and carbon leakage and the harmonisation of standards for near-zero emission basic materials. The analysis provides priorities and 'feasible' steps towards a better exploitation of the potential of global governance for the decarbonisation of EILs that can drive forward the sector's transition to climate neutrality.

Global Climate Governance for the Decarbonisation of the Buildings Sector (D6.1c)

By Wolfgang Obergassel & Chun Xia

Emissions from the buildings sector account for 21% of global GHG emissions. This paper aims to analyse the potential of global climate governance to promote the decarbonisation of this sector. The paper proceeds in four steps. First, the paper summarises existing knowledge on which barriers are impeding the decarbonisation of the buildings sector as well as opportunities that may be leveraged. Second, the paper discusses how global governance may help with overcoming these barriers and mobilising potentials ("governance potential"). Third, the paper maps out the existing landscape of international institutions that are active in the buildings sector and discusses to what extent these institutions have already been able to exploit the governance potential identified in the preceding step. This discussion results in an identification of governance gaps and unexploited potential. Finally, the paper discusses options for filling the identified gaps and mobilising unexploited potential. Global governance and cooperation in the buildings sector is generally difficult given its mostly localised supply chains, lack of exposure to international trade, and highly differentiated needs in relation to geography and climate. The paper nonetheless identifies a number of potential avenues for global climate governance, but this potential has been exploited only to a limited extent. The sector was not even mentioned in recent outcomes of institutions such as the G7 or the Major Economies Forum. While the challenge of providing climate-friendly cooling is governed with clear targets, rules and transparency mechanisms under the Kigali Amendment to the Montreal Protocol, regarding the buildings sector as a whole, there is no central institution, no strong government-backed signal on the need to decarbonise, and also is little rule-setting. The potential to provide transparency and accountability of countries' actions also has been exploited only to a very low extent. Regarding means of implementation, while substantial resources seem to be provided, there is a lack of data on actual needs. IPCC and IEA consider that

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investments need to grow by a factor of 3-4 by 2030 to get onto a Paris-compatible trajectory. Several already existing institutions could in theory help to close the governance gaps identified but in practice all have limitations, such as the diverging interests among the parties to the UNFCCC and the Paris Agreement and the need to achieve consensus. The best way forward may therefore be a coalition of ambitious countries and other others, such as a “Breakthrough” on the buildings sector, that draws on the strengths of existing institutions. To add value to the existing institutional landscape, such a “Breakthrough” should include an ambitious global target or roadmap as well as ambitious individual targets and pledges to increase means of implementation for developing countries. The GlobalABC and the IEA could track implementation, as the IEA is already doing with the existing Glasgow Breakthroughs. Successive COP presidencies could use the annual COP sessions as platform and occasion to demand demonstration of clear progress. In addition, if country members included their Breakthrough pledges in their NDCs, they would thereby be subject to the transparency mechanisms of the Paris Agreement. However, the success of such as “Breakthrough” is far from assured given that so far several calls for building decarbonisation commitments by governments gained only a handful of signatories. A fallback option would be to strengthen the GlobalABC in terms of its membership and administrative capacity.

On the Road to Somewhere? Assessing Climate Governance Gaps and Options for the Land Transport Sector (D6.1d)

By Catherine Hall & Harro van Asselt

Notwithstanding its overall importance, the United Nations (UN) climate change regime has so far played a limited role in driving sectoral transformations towards climate neutrality. However, the challenges and opportunities for sectoral transformations, as well as the need for and potential of international governance, differ across varying sectoral systems. Land transport is a major emitter of greenhouse gas emissions and one of the most difficult sectors to decarbonise. Emissions from the land transport sector are projected to rise, with total transport activity expected to more than double by 2050 against 2015 levels (International Transport Forum, 2021). Drawing on a review of available policy documents and secondary literature, this paper assesses the extent to which international governance can promote the transformation of land transport towards sustainability and decarbonisation. It first identifies the key challenges and barriers to sectoral decarbonisation in land transport, as well as any unexploited potentials. The paper then examines the potential of international cooperation to address these barriers and mobilise any potentials, mapped against six key governance functions, namely: (1) guidance and signal, (2) rules and standards, (3) transparency and accountability, (4) means of implementation (5) knowledge and learning, and (6) orchestration and coordination. The paper subsequently analyses the existing governance landscape, to identify to what extent current institutions have been exploiting these governance potentials. The paper finds that the overall international governance potential in the area of sustainable mobility remains underexploited. The paper accordingly explores how international governance may be enhanced in the land transport sector and offers some concrete options to this end, including institutional reform as well as the potential creation of a new institution in the form of a climate club.

Article 6 and CORSIA after Glasgow: Ready for take-off?

By Catherine Hall, Nicolas Kreibich & Harro van Asselt

Aviation is one of the most challenging sectors to decarbonise. Although the Paris Agreement in principle covers emissions from all sectors, including those of aviation, most Parties to the Paris Agreement

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have not included emissions from international flights in their Nationally Determined Contributions (NDCs). However, these emissions are explicitly addressed by the International Civil Aviation Organization (ICAO). In 2016, ICAO adopted a market-based mechanism – the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) – to address the sector’s growth in emissions. In the meantime, Parties to the Paris Agreement in 2021 agreed on a detailed rulebook for market mechanisms under Article 6 of the Agreement, which creates linkages with CORSIA. We identify four types of interactions between CORSIA and Article 6 rules: (1) allowing Parties with single-year targets to use the averaging accounting approach creates a loophole that may undermine the environmental integrity of both CORSIA and Article 6; (2) the quality criteria for CORSIA offsets may be strengthened by following Article 6 rules; (3) the level of CORSIA’s ambition will affect the supply side of carbon credits, including those provided under Article 6; and (4) like CORSIA, the operation of Article 6 may rely on private certification standards’ registries. To ensure that CORSIA provides a meaningful contribution to climate change mitigation in the sector, we suggest that ICAO Member States should: (1) adopt a long-term climate target for the sector in line with the Paris Agreement, (2) revise its quality criteria for offset programmes, (3) address non-CO₂ effects, and (4) carry out an assessment of the impacts on the functioning of the Article 6 mechanisms each time a decision is made. Parties to the UN Framework Convention on Climate Change could also take specific action, including refining guidance on averaging, establishing a buffer pool to offset an increase in emissions, and considering a requirement for Parties to transition towards multi-year emission targets.

PARTICIPANTS



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