The Climate and Clean Air Coalition

A Voluntary Initiative for Climate and Air Quality

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1 Introduction

Since the beginning of the millennium, the global environmental and climate governance landscape has broadened significantly and become more complex. Beyond governmental actors, non-traditional, often transnational initiatives have taken over significant roles in environmental policy-making.¹ These initiatives can increase the capacities for mitigation and adaptation within the countries and, on a political level, have the potential to contribute towards the implementation of international commitments;² for example, those made under the Paris Agreement or under the recent Global Methane Pledge (see Chapter 3).

This chapter focuses on one of these innovative transnational alliances, namely the Climate and Clean Air Coalition (CCAC). The CCAC is the only global alliance dedicated exclusively to the reduction of SLCPs. Established in early 2012, the CCAC is set up as a multilateral voluntary partnership working on "integrated climate and clean air solutions to stabilize the climate, limit warming to 1.5°C, and drastically reduce air pollution. It focuses on fast action to reduce emissions of short-lived climate pollutants (SLCPs) (...)".³

¹ Liliana B Andonova, Michele M Betsill and Harriet Bulkeley, 'Transnational climate governance' (2009) 9 Global environmental politics 52; Harriet Bulkeley and Andy Jordan, 'Transnational environmental governance: new findings and emerging research agendas' (2012) 30 Environment and Planning C 556; Frank Biermann and Philipp Pattberg, *Global environmental governance reconsidered* (MIT Press 2012).

² Kenneth W Abbott and others, *International organizations as orchestrators* (CUP 2015); Richard B Stewart, Michael Oppenheimer and Bryce Rudyk, 'Building blocks: A strategy for near-term action within the new global climate framework' (2017) 144 Climatic Change 1; Lukas Hermwille, 'Making initiatives resonate: how can non-state initiatives advance national contributions under the UNFCCC?' (2018) 18 International Environmental Agreements: Politics, Law and Economics 447.

³ CCAC, 'Factsheet: CCAC 10-Year Anniversary' (2022) <https://www.ccacoalition.org/en/resour ces/10-years-climate-clean-air-coalition-ccac-factsheet> accessed 05 September 2022.

The CCAC's origin is closely connected to activities carried out by the United Nations Environment Programme (UNEP). UNEP and the World Meteorological Organization (WMO) had issued the milestone report *Integrated Assessment of Black Carbon and Tropospheric Ozone* in 2011. It presented strong scientific evidence that mitigating black carbon, ozone, and precursors such as methane, is crucial to limit global warming. It also highlighted the significance of co-benefits obtained additionally from the reduction of sLCPs.⁴ The report helped to increase the awareness among the scientific community as well as policy makers about the fact that the United Nation Framework Convention on Climate Change's (UNFCCC) then exclusive focus on CO_2 and equivalents was insufficient to limit global warming. The report thus provided fundamental arguments for launching an organization with a special focus on sLCPs. The increased attention on sLCPs and the formation of the CCAC can be considered as part of the areas in which UNEP has been very successful, in agenda setting on novel environmental issues.⁵

Also, the launch of the CCAC can be seen as part of the general developments in the international climate policy regime. By the end of the first decade of the new millennium, after the UNFCCC Conference of the Parties in Copenhagen in 2009, international negotiations on climate change were stuck in a gridlock. Many policy makers and experts were unsatisfied with the lack of progress for a follow-up treaty to the Kyoto Protocol. In response, alternative initiatives for greenhouse gas mitigation emerged during that time with the perspective of making quicker progress with a selected group of members. Yet, in the beginnings of the CCAC, also critical voices could be heard. For example, some countries were worried about the CCAC's link to the UNFCCC. They perceived the CCAC to be in a competitive relationship with the UNFCCC, and even act as a distraction from CO_2 -mitigation.⁶ However, this view has changed over the last several years. The CCAC is now seen as a complementary actor to the UNFCCC and their agendas have converged increasingly.⁷

This chapter focuses on the CCAC's role in the international policy landscape and what it can contribute to SLCP governance. After this introduction

⁴ UNEP, Integrated assessment of black carbon and tropospheric ozone (2011) https://wed ocs.unep.org/20.500.11822/8028> accessed of September 2022.

⁵ Maria Ivanova, 'UNEP in global environmental governance: design, leadership, location' (2010) 10 Global Environmental Politics 30; Maria Ivanova, *The Untold Story of the World's Leading Environmental Institution: UNEP at Fifty* (MIT Press 2021).

⁶ Information obtained from interviews with CCAC members.

⁷ Charlotte Unger, Kathleen A Mar and Konrad Gürtler, 'A club's contribution to global climate governance: the case of the Climate and Clean Air Coalition' (2020) 6 Palgrave Communications 1.

to the origins of the CCAC, the second section displays the CCAC's objectives, structure and membership, and explains its methodological approach, that is based on the co-benefits concept paired with a sound scientific fundament. The third section focuses on the activities of the CCAC, ranging from practical SLCP project activities to engagement in local, national, and global political discourses, and examines its governance contribution. The last part of this chapter is divided into a discussion of the challenges to the CCAC's governance and a conclusion that also sets the CCAC into the broader international climate political setting.

This chapter is based on existing research in the area of transnational environmental governance. Since analyses of the CCAC are very scarce, the text relies to a large extent on the analysis of material published by the Coalition itself. While such studies, reports, press releases, and website data can provide a good overview about the CCAC's activities, its structure, and goals, they do not present an objective assessment of its actual impacts on climate governance. To complement this, data collected for a previous study were used here.⁸ The author had carried out a series of 14 semi-structured interviews with representatives of: CCAC country partners from Latin America, Europe, Central Asia, and Africa; research institutions and NGOs from Europe and Asia; several partners from intergovernmental institutions; and the CCAC secretariat, in the period between April and October 2018.

2 The CCAC's Objectives and Its Structure Are Oriented at Political Feasibility

2.1 CCAC's Objectives

The CCAC declared its main objective to be the slowing of the rate of nearterm global warming through the reduction of SLCPs. Specifically, it focuses on black carbon, methane, hydrofluorocarbons (HFCs), and tropospheric ozone, which with 45% of global warming are the most important contributors to climate change after carbon dioxide (CO_2).⁹ This goal was translated into numbers: cut the current rate of warming in half and avoid approximately 0.6°C of additional warming by 2050.¹⁰ However, the CCAC does not set collective

⁸ Unger, Mar and Gürtler (n 7).

⁹ CCAC, 'Short-Lived Climate Pollutants (SLCPS): What are Short-Lived Climate Pollutants?' <https://www.ccacoalition.org/en/content/short-lived-climate-pollutants-slcps> accessed 05 September 2022.

¹⁰ CCAC, 'Factsheet' (n 3).

SLCP reduction targets or require its members to establish concrete goals and reduction pathways. Every member can independently decide what it wants to achieve under the CCAC.

In general, the CCAC seeks to emphasize 'quick' action. Behind this approach lies the rationale that because of the short-lived, yet very potent nature of SLCPs, their reduction leads to relatively rapid changes in atmospheric concentration in comparison to CO_2 . Another large advantage of SLCPs mitigation is that it would buy time for the world to adapt to a changing climate and avoid climate tipping points with devasting impacts. The main sectors the CCAC focuses its activities on are agriculture, energy (household energy, oil and gas, and also brick production), transportation (first of all, heavy-duty diesel vehicles), cooling (HFCs), and waste.

2.2 CCAC's Membership and Governance Structure

The CCAC is an alliance based on voluntary contributions. There is no international treaty that obliges its member to commit to certain activities or targets. Instead, members are required to make a declaration of objectives to join the Coalition and contribute voluntarily either through donations or nonmonetary activities, such as knowledge etc. Donations go into the CCAC Trust Fund which provides the financial basis of the CCAC. It is spent mostly for administration and project implementation, mainly in countries of the Global South.¹¹

Founded by Bangladesh, Canada, Ghana, Mexico, Sweden, the United States, and UNEP, the CCAC consists of 76 state and 78 non-state partners, as of August 2022.¹² It includes governments, intergovernmental organizations, businesses, scientific institutions, and civil society organizations. From an early beginning, the CCAC has been closely linked to UNEP. UNEP is not only a founding member and cooperation partner in many projects and scientific assessments, it also hosts the CCAC secretariat, which is based in Paris.

The CCAC unites a group of members, relevant to solving the problem of SCLP mitigation. In other words, the CCAC unites countries who are significantly responsible for the problem for climate change (large-emitter members such as Canada, the EU, India, and the USA; CCAC partners cover around 44% of the world's GHG emissions in total) as well as regions with high SLCP and air pollutant emissions (18 out of the 20 most polluted cities, and 6 of the 10

¹¹ CCAC, 'Climate and Clean Air Coalition Trust Fund' https://www.ccacoalition.org/en/content/climate-and-clean-air-coalition-trust-fund> accessed of September 2022.

¹² CCAC, 'Our Partners' (2022) <https://www.ccacoalition.org/en/partners> accessed o5 September 2022.

world's largest cities are in CCAC countries).¹³ The CCAC scores high also in terms of representativeness, as its members come from all continents, including countries from Africa, Asia, and the Americas, which often struggle with air pollution problems. The vast majority of state partners are classified as lowincome countries under the UNFCCC.

Also, non-state partners can be counted as part of the CCAC's success. Many members see the transnational character of the CCAC as a great advantage in terms of capacities and knowledge.¹⁴ Research institutes, intergovernmental organisations, and subnational entities add to the CCAC's problem-solving capacity and furthermore increase its legitimacy.

Even though the CCAC has many non-governmental members, it is still a state-led organization. For example, countries have a stronger representation in the decision-making body, *the CCAC Board*. Also, usually countries receive the bulk of attention, when for example, announcements for SLCP reduction strategies, goals, sectors, and funding are made and the political communiqués launched. Non-state actors have first and foremost the role of supporting state-based action through information, analyses, and scientific assessments.

Overall, the degree of activity and engagement varies significantly, and some partners are more engaged than others. Engagement also varies over time, e. g. even though the US was a founding member of the CCAC, participation decreased under the presidency of Trump. More recently, with the presidency of Biden, the US has re-established its commitment, and is now leading the work in many thematic areas. The CCAC's constant growth – it has attracted new partners every year since its establishment – can be seen as proof for its attractiveness. Notwithstanding, some large SLCP emitters, such as China, Brazil and Indonesia are still not CCAC members.

All CCAC members meet annually in *the Working Group* and, usually, *a High-Level Assembly*, where the countries' environmental (or other) ministers and the organizations' directors are invited. *High-Level Assemblies* are held on the sidelines of the UN negotiations on climate change (meetings of the UNFCCC Conferences of the Parties). Here, important outputs such as the work program or the communiqués that set objectives for the CCAC are officially adopted and launched.¹⁵

The CCAC *Board* has the role of oversight body and the final say in many decisions, for example the funding of project proposals. Member representatives

¹³ Unger, Mar and Gürtler (n7).

¹⁴ Information obtained from interviews with CCAC members.

¹⁵ CCAC, 'Governance' https://www.ccacoalition.org/en/content/governance accessed o5 September 2022.

can become part of the Board through election. Countries and organisations apply for a seat in the Board and then an election is held. Seats are occupied on a rotating basis for a two-years term. The distribution of seats is the following: ten country, two NGO, two intergovernmental organisation, and one Scientific Advisory Panel seats.¹⁶ All CCAC members vote in their respective category (e.g., countries vote for the country-Board seats).

The CCAC's practical work is organized in several subgroups. Originally named thematic initiatives, the now seven *Thematic Hubs* are smaller forums, in which CCAC members work on a specific area, such as, among others, agriculture, cooling, heavy duty vehicles, oil and gas, household energy, and waste.¹⁷ Here, partners come together for exchange, work together on SLCP projects, present progress and success stories, and develop tools. Partners are free to choose, in which *Hubs* and in what form they want to participate. This structure was developed in 2020/21, leading the CCAC into a new working phase after its ten years of existence. While guaranteeing a regular exchange and close collaboration, it helps to make the CCAC a dynamic partnership.

The governance structure chosen by the CCAC has the advantage that it provides easy access and bears low entrance barriers for countries and organizations. Its established structure, including the regularity of in-person meetings, has helped to build a trustworthy working atmosphere and a strong cooperative network. This network is not only inclusive in that it benefits from the diversity and heterogeneity of its members, it also brings together actors who work both on the technical and political levels.

2.3 CCAC's Scientific Basis and Science-Policy Interface

Work realized under the CCAC is supported by the *Scientific Advisory Panel*, an elected international group of scientists with expertise on SLCPs. Scientific Advisory Panel experts are proposed by CCAC members and then selected based on criteria, such as the level and area of expertise, geographical origins, and gender. In comparison with other similar international alliances, the scientific foundation is of outstanding importance within the CCAC. As the mentioning of the 2011 *Integrated Assessment of Black Carbon and Tropospheric Ozone* above has demonstrated, from an early beginning, scientific knowledge has been intrinsically linked to all areas of work. Its purpose is on the one hand to advise and inform the CCAC members and on the other hand ensure the quality of work and generate in-house expertise. Practical examples are

¹⁶ Ibid.

¹⁷ CCAC, 'Hubs' <https://www.ccacoalition.org/en/initiatives> accessed 05 September 2022.

for instance: expert advisory committees that select project proposals to be funded, scientific experts who accompany policy-making processes,¹⁸ as well as methodologies and tools provided for members, such as the Long-range Energy Alternatives Planning – Integrated Benefits Calculator (LEAP-IBC),¹⁹ In addition, CCAC (in cooperation with other organizations, e. g. UNEP, WMO or World Health Organization) realizes large scientific assessments such as the Regional Assessments for South America, Asia and Africa or the recent Methane Assessment, which attract a far larger audience than CCAC members.²⁰ Scientific Advisory Panel is an important body, which, through occupying a seat in the Board, forms part of the decision-making procedures and provides information and expertise to the creation of strategies, programmes, and projects.

Overall, it can be argued that maintaining roots and a close relationship with science has increased the credibility of the CCAC as an alliance. It has contributed to creating the 'label of CCAC' that is perceived to stand for a certain quality of work and projects. The reputation tied to the CCAC's name has been described by its members as having a legitimizing effect for certain actions and measures.²¹

Beyond its political aim, the CCAC might be considered an interesting forum for scientific purposes. SLCPs sit at the nexus of climate and air quality, where the science-policy interface has been perceived as weak.²² For example, important scientific outputs, like the CCAC assessments, e. g. the report *Air Pollution in Asia and the Pacific: Science-based solutions*²³ and *the Global*

18 CCAC, 'Annual report: 2020–2021' (2021) <https://www.ccacoalition.org/content/annual-report-2020-2021-0> accessed 05 September 2022; Clara Mewes and Charlotte Unger, 'Learning by Doing: Co-Benefits Drive National Plans for Climate and Air Quality Governance' (2021) 12 Atmosphere 1184.

¹⁹ Mewes and Unger (n 18).

²⁰ CCAC, 'Air Pollution in Asia and the Pacific: Science-based solutions' (2019) <https: //www.ccacoalition.org/en/resources/air-pollution-asia-and-pacific-science-based -solutions-summary-full-report> accessed o5 September 2022; CCAC, 'Global Methane Assessment' (2021) <https://www.ccacoalition.org/en/resources/global-methane-assessm ent-full-report> accessed o5 September 2022.

²¹ Unger, Mar and Gürtler (n7)

²² Andonova, Betsill and Bulkeley (n 1); Gregory F Nemet, Tracey Holloway and Paul Meier, Implications of incorporating air-quality co-benefits into climate change policymaking' (2010) 5 Environmental Research Letters 14007; Annabelle Workman and others, 'The political economy of health co-benefits: embedding health in the climate change agenda' (2018) 15 International journal of environmental research public health 674.

²³ CCAC 'Air Pollution in Asia and the Pacific: Science-based solutions' (2019) <https: //www.ccacoalition.org/en/resources/air-pollution-asia-and-pacific-science-based -solutions-summary-full-report> accessed 05 September 2022 (n 20).

Methane Assessment received significant attention from press and academia.²⁴ Cooperation among scientific disciplines, the engagement of policy-related disciplines and humanities in the work on integrated solutions to air pollution and climate change, as well as the links to policymaking processes and governance arrangements are often seen as inadequate.²⁵ The CCAC's (net-) work might help to bridge existing divides between different scientific areas, as well as science and policy. As described above, its diverse actors create a very large network, in which perspectives and knowledge from all over the world, but also from policy, civil society private sector and science come together. Frequently, this provides the fertile ground for new research, but also for close collaboration.

2.4 CCAC's Multiple Benefits, or Co-benefits Approach

The CCAC's name reveals that the alliance is not exclusively focusing on climate change. From its beginning it has targeted multiple goals: air quality, health, food security, human wellbeing, and overall progress in sustainable development, specifically: "(...) preventing millions of premature deaths annually, improving food security by avoiding tens-of-millions of tons of annual staple crop losses, protecting vital ecosystems and ecosystem services, reducing the risk of dangerous and irreversible climate tipping points, and making significant contributions to achieving the 2030 Agenda for Sustainable Development".²⁶

This pursuing of multiple goals, the taking into account of multiple sources of impacts, as well as working from diverse regional perspectives, has been built into a more concise and structured approach, named the *Multiple Benefits Pathway Framework*.²⁷ Behind this approach stands the idea that governments can integrate several goals, like climate, air quality and sustainable development, and design harmonized policies.

²⁴ This can be seen, for example in statistics from academic networks such as ResearchGate <https://www.researchgate.net/publication/328630911_Air_pollution_in_Asia_and_ the_Pacific_Science-based_solutions> accessed 05 September 2022; see also CCAC, 'Media mentions' <https://www.ccacoalition.org/en/media-mentions> accessed 05 September 2022.

²⁵Andonova, Betsill and Bulkeley (n1); Eric Zusman and others, 'One Atmosphere: Integrating
Air Pollution and Climate Policy and Governance' (2021) 12 Atmosphere 1570.

²⁶ CCAC, 'Why we need to act now' <https://www.ccacoalition.org/en/content/why-we -need-act-now> accessed 05 September 2022.

²⁷ CCAC, 'Multiple Benefits Pathway Framework' <https://www.ccacoalition.org/en/cont ent/multiple-benefits-pathway-framework> accessed 14 July 2021.

The largest advantage of this approach is that it can satisfy very diverse political interests. Often, the priorities pursued by countries and organizations within the CCAC vary significantly.²⁸ For example, many European countries set a priority on climate change mitigation, whereas elsewhere, e. g. in the US, exists a strong focus on the combination of climate change mitigation, health and air quality, and countries in Asia or South America often prioritize air quality and local conditions. With an approach that treats the whole of these 'multiple' concerns equally, governments can work more comfortably together and cooperate easily even though national and local interests vary.

This approach is also consistent with research and science. The term 'cobenefits' dates back to the 1990s. It refers to a win-win strategy, where two or more policy goals can be achieved through one single policy.²⁹ For the Intergovernmental Panel on Climate Change (IPCC), co-benefits are the "positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment".³⁰ The concept of co-benefits has received much attention in the scientific community.³¹ Within this broad range of research, three varying strands of understanding of the term 'co-benefit' can be identified, according to the country's (or other actor's) political agenda: climate co-benefits, development or climate policy co-benefits, and benefit synergies or co-impacts.³² In the first category, climate co-benefits are those that arise from policies that do not prioritize climate mitigation or adaptation. The second category consists of additional benefits resulting from climate policies, e.g. as improvements in air, soil and water quality, biodiversity etc. The third category refers to benefit synergies or co-impacts result from policies that are specifically designed to reach two goals simultaneously. Very broadly, the CCAC's approach falls under the third category.

²⁸ Unger, Mar and Gürtler (n 7).

Jan P Mayrhofer and Joyeeta Gupta, 'The science and politics of co-benefits in climate policy' (2016) 57 Environmental Science Policy 22; Mikael Karlsson, Eva Alfredsson and Nils Westling, 'Climate policy co-benefits: a review' (2020) 20 Climate Policy 292.

³⁰ IPCC, Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5 C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (CUP 2018); Mewes and Unger (n 18).

³¹ Diana Ürge-Vorsatz and others, 'Measuring the co-benefits of climate change mitigation' (2014) 39 Annual Review of Environment and Resources 549; Mayrhofer and Gupta (n 29); Karlsson, Alfredsson and Westling (n 29).

³² Karlsson, Alfredsson and Westling (n 29).

Another often-emphasized advantage of the co-benefits approach is its positive framing and functioning as counterweight to the cost-based argument that often blocks climate change policies.³³ In many countries, climate and environmental protection are named simultaneously with economic concerns over mitigation costs or perceived as counterproductive for economic development.³⁴ The co-benefits concept may alleviate such concerns. Its positive framing of win–win situations bears a strong advocacy potential. Policy makers from the various areas, but also stakeholders, maybe be convinced easier and give their consent, when more than one goal can be achieved. Also, often co-benefits are based on practical evidence, corroborated with substantial scientific data and translated into concrete cost savings.³⁵ Overall, this approach can improve political feasibility, tying climate policies to local priorities. In its practical work with countries and regions, the CCAC has undertaken many analyses and calculations of co-benefits and brought these into national policy planning; for example, in Nigeria, Ghana and Mexico.³⁶

3 The CCAC's Activities and Its Governance Role(s)

Over the years of existence, the CCAC has become a central player in climate, but first and foremost in SLCP governance. It builds knowledge and capacity on SCLPs, supports SLCP policy-making, and coordinates and orchestrates SLCP activities. It furthermore raises awareness on SLPCs at all political levels (from local to global) and complements the UNFCCC in that it raises capacities to increase and implement mitigation targets under the Paris Agreement. Very broadly, the CCAC's activities can be subsumed under two categories: on the one hand, the more practice-oriented work and on the other hand, the policy-making and political activities. Both overlap on many occasions.

First, there are those activities that directly or indirectly achieve SLCP reductions and mostly imply practical, on-the-ground work. At the heart of this

³³ Anil Markandya and others, 'Health co-benefits from air pollution and mitigation costs of the Paris Agreement: A modelling study' (2018) 2 The Lancet Planetary Health e126-e133; Karlsson, Alfredsson and Westling (n 29).

³⁴ Barry G Rabe, *Statehouse and greenhouse: The emerging politics of American climate change policy* (Brookings Institution Press 2004).

³⁵ Mayrhofer and Gupta (n 29).

³⁶ Rabe (n 34); Markandya and others (n 33); Government of Nigeria, 'Nigeria's National Action Plan to reduce Short-Lived Climate Pollutants (SLCPs)' (2018) < https://www.ccaco alition.org/en/resources/nigeria%E2%80%99s-national-action-plan-reduce-short-lived -climate-pollutants> accessed 14 July 2021.

work are: projects, including on capacity building,³⁷ policies and standards,³⁸ assessment and inventories, especially on black carbon, implementation of technologies, measurements, and guidelines and tools for national planning.³⁹ Many of these activities are of a lighthouse or model character and meant to be transferred to other regions. For example, after the CCAC supported the development of an SLCPs reduction plan in Ghana, similar plans and programs were launched and are under development in other African countries, such as Nigeria and Cote d'Ivoire.⁴⁰

There are many examples in which this support in methodologies and capacity building has led to domestic regulations and programs, laws, and standards. For example, in the case of assisting Nigeria with the development of its SLCP Action Plan, CCAC experts supported with the assessment and creation of emissions databases, consultation with stakeholders and other governmental agencies, and the formulation of the Plan.⁴¹

Another overarching area relates to the large scientific assessments the CCAC has realized in certain regions such as Latin America, Asia and Africa or recently on a specific gas – the Global Methane Assessment. These assessments usually do not only calculate the SLCPs' impact, they also suggest and provide details about concrete measures to mitigate SLCPs, and quantify the multiple benefits resulting from these measures.

The above named second broad area of work is tied to political discourse and strategy on the various governance levels, from national and regional to international. Here, the CCAC for example takes part in conferences, ministerial roundtables, negotiations, workshops, and joint press releases etc. For example, it has had a motivating and supporting role for regional ministerial pledges in the Latin American and Caribbean region.⁴² Many of these

E.g. CCAC, 'Capacity building program for industry stakeholders and policy-makers on HFC-alternative technologies' https://www.ccacoalition.org/en/activity/conferences -and-workshops> accessed o5 September 2022.

³⁸ E.g. CCAC, 'City waste action program' <https://www.ccacoalition.org/en/activity/city -waste-action-programme> or CCAC, 'Enhancing NDC ambitions with mitigation in the agriculture sector initiative' <https://www.ccacoalition.org/en/activity/enhancing-ndc -ambitions-mitigation-agriculture-sector> both accessed o5 September 2022.

³⁹ E.g. the above-mentioned LEAP-IBC.

Rabe (n 34); Government of Nigeria (n 36); Republic of Cote d'Ivoire, 'National Action Planning Document for the Reduction of Short-Lived Climate Pollutants (SLCP)' (2020)
 https://www.ccacoalition.org/en/file/6701/download?token=Nd5E3BB0 accessed 05 September 2022.

⁴¹ CCAC 'Hubs' (n 17); Mewes and Unger (n 18).

⁴² CCAC, 'Decision 9: Twentieth Meeting of the Forum of Ministers of Environment for Latin America and the Caribbean' (2016) <https://www.ccacoalition.org/en/resources/decis ion-9-twentieth-meeting-forum-ministers-environment-latin-america-and-caribbean> accessed 05 September 2022.

activities are linked to international processes and legal frameworks for the environment and climate.

Further, the CCAC has actively contributed to UNEP's work, and has been engaged in its governing body – UN Environment Assembly, e. g. through collaboration in the generation and evaluation of environmental data, expert workshops, and participation. The CCAC's work was recognized on several occasions by the Assembly, e.g. as part of the resolution adopted at the 2017 meeting.43 This recognition provides not only international attention and awareness to the CCAC, it also improves its credibility as a trustworthy alliance. Another international agreement for which the CCAC has played an advocating role is the Montreal Protocol on Substances that Deplete the Ozone Laver. For example, it was very engaged in pushing for an ambitious amendment to the Montreal Protocol to phase-down HFCs.⁴⁴ The outcome of this workstream, Kigali Amendment, was advocated for at CCAC conferences and its adoption lobbied by the CCAC members.⁴⁵ The CCAC had also operated a thematic initiative to help countries to phase out HFCs. The CCAC further promotes SLCP reductions as part of international agreements, such as the Montreal Protocol or the UNFCCC; generally via its publications, events and research.⁴⁶

The other large international framework the CCAC has contributed to is the UNFCCC. As initially mentioned, the CCAC has taken a clearly complementary role here, but with diverse functions. On the one hand it provides technical expertise: CCAC's expert knowledge has been fed into the UNFCCC process on several occasions. For instance, the CCAC as institution was involved in the process of the Marrakesh climate action agenda and was recognized as a technical expert under the Ad Hoc Working Group on the Durban Platform

⁴³ UNEP, 'Preventing and reducing air pollution to improve air quality globally' (2017) https://www.ccacoalition.org/fr/node/2382> accessed 05 September 2022.

⁴⁴ UNEP, 'Reducing Hydrofluorocarbons via the Montreal Protocol is the most significant climate action the world can take this year' (2016) <https://www.unep.org/news-and-stor ies/press-release/reducing-hydrofluorocarbons-montreal-protocol-most-significant> accessed 05 September 2022.

⁴⁵ UNEP, 'Historical Agreement on Hydrofluorocarbons reached in Kigali' (2016) <https: //www.unep.org/news-and-stories/news/historical-agreement-hydrofluorocarbons-reac hed-kigali> accessed 05 September 2022.

⁴⁶ CCAC, 'Key messages from the Ministerial Roundtable Session in New York, 26 Sep 2018' (2018)<https://www.ccacoalition.org/en/resources/key-messages-ministerial-roundtable -session-new-york-26-sep-2018> accessed 05 September 2022.

for Enhanced Action.⁴⁷ Another example is the 2017 Koronivia Joint Work on Agriculture which aims at focusing agricultural development on food security and climate change mitigation, a decision that represented an endorsement of the strategy the CCAC has championed since 2012.⁴⁸ As initially mentioned, the CCAC's *High Level Assemblies* are held on the sidelines of the UNFCCC meetings. At such events, ministers and heads of organizations generally endorse a joint political communiqué on SLCPs in line with CCAC priorities, e.g., the Bonn Communiqué of 2017 addressed SLCPs from agriculture and municipal solid waste.⁴⁹ These communiques though they do not have a binding character, raise international attention and signal a common objective of the CCAC partners.

The Paris Agreement is occupying a central place in CCAC's work. Not only has the achievement of its goals of keeping global warming under 2 °C been used as a backbone of many communication strategies and political outputs, it has also become a main element of the CCAC's work program for 2020. Furthermore, under the Paris Agreement, some 'bottom-up' integration of SLCPs into the UNFCCC process can be observed. The CCAC supports countries that wish to include SLCPs in their Nationally Determined Contributions (NDCs) under the Agreement. For example, governmental officials from Mexico argued that with the help of the CCAC, Mexico had included a separate goal for the reduction of black carbon into its first NDC.⁵⁰ Also, other CCAC country representatives mentioned that they had approached the CCAC seeking support for the development of their NDCs.⁵¹ By 2021, 60 countries had included SLCP reduction in their NDCs. Of these, 60 include methane, 12 black carbon, and 44 HFCs. The CCAC has supported 17 countries to incorporate SLCP measures into their NDCs.⁵² Helping countries to integrate SLCPs

⁴⁷ CCAC 'FACTSHEET: CCAC 10-YEAR ANNIVERSARY' (2022) https://www.ccacoalition.org /en/resources/10-years-climate-clean-air-coalition-ccac-factsheet (n 3).

Food and Agriculture Organization of the United Nations, 'Submission by the Food and Agriculture Organization of the United Nations (FAO) to the United Nations Framework Convention on Climate Change (UNFCCC) in relation to the Koronivia joint work on agriculture (4/CP.23) On Topics 2(e) and 2(f)' (2020) <https://www4.unfccc.int/sites/Submiss ionsStaging/Documents/202004201455---FAO%20Submission%20KJWA%202(e)_2(f)_fi nal.doc.pdf> accessed 05 September 2022.

⁴⁹ CCAC, 'Hubs' (n 17).

⁵⁰ Information obtained from interviews with CCAC partners.

⁵¹ Information obtained from interviews with CCAC partners.

⁵² CCAC, 'Annual report: 2020–2021' (n 18).

has become a very important area of work for the CCAC and is named as a working focus in the Coalition's 2030 Vision.⁵³

In 2021, at COP26 in Glasgow, the CCAC also contributed to an international initiative, the Global Methane Pledge. This initiative, signed by more than 100 countries, seeks to make an additional contribution to the Paris Agreement through reducing global methane emissions at least 30 percent from 2020 levels by 2030. The CCAC had realized extensive preparatory work, such as the scientific Global Methane Assessment, many political and scientific events, and supporting the launch of several initiatives such as Global Methane Alliance⁵⁴ that enabled a good level of awareness and helped to push the EU and the US, who then launched the initiative at COP26.

Through these activities, SLCPs have seen increased attention on the regional and international stage. Beyond examples like the above-mentioned Global Methane Pledge, evidence of this can be seen for example in that SLCPs were taken up by the G_{7} ,⁵⁵ at a ministerial roundtable on the sidelines of the UN General Assembly,⁵⁶ and by the General Assembly of the Parliamentary Confederation of the Americas.⁵⁷

Building knowledge and awareness on the topic of the formerly neglected topic of SLCPs can be claimed a main success of the CCAC. This is an opinion also highlighted by a majority of CCAC partners. They regard the CCAC's work as establishing SLCPs as a topic per se, bringing SLCPs on the political agenda and giving a neglected climate topic a voice internationally and in many national contexts as a main strength.⁵⁸

58 Unger, Mar and Gürtler (n7).

⁵³ CCAC, 'Climate and Clean Air Coalition adopts new strategy to deliver ambitious climate, clean air, and development goals by 2030' (2020) <https://www.ccacoalition.org/en/news /climate-and-clean-air-coalition-adopts-new-strategy-deliver-ambitious-climate-clean -air-and> accessed 05 September 2022.

⁵⁴ Government of Nigeria (n 36).

⁵⁵ CCAC, 'Multiple Benefits Pathway Framework' <https://www.ccacoalition.org/en/cont ent/multiple-benefits-pathway-framework> (n 27).

⁵⁶ United Nations General Assembly, 'Resolution adopted by the General Assembly on 19 December 2019 [on the report of the Second Committee (A/74/381)] 74/212. International Day of Clean Air for blue skies' (2020) <https://www.ccacoalition.org/en/resources/uni ted-nations-general-assembly-resolution-74212-international-day-clean-air-blue-skies> accessed 05 September 2022.

⁵⁷ Confederación Parlamentaria de las Américas, 'Committee on the Environment and Sustainable Development Declaration on Short-Lived Climate Pollutants' (2018) https://www.ccacoalition.org/en/resources/committee-environment-and-sustainable-development-declaration-short-lived-climate accessed 05 September 2022.

A significant advantage of the CCAC for its members is also the increased cooperation and network enhancement for this topic, where many aspects (ranging from science and measurements to policy measures and implementation processes) are still not very well researched. Regular exchange on scientific and technical topics and inputs from non-state partners create a well-informed network and thereby sound basis for action. Here, members can discuss and try out activities and measures, and debate topics in a more informal manner. It can also provide a first step towards further, potentially more formal cooperation and bi-(or multi-) lateral partnerships.

4 Challenges to the CCAC's Work

The previous sections have shown the CCAC as a dynamic, flexible, and nontraditional initiative that has taken over an important role in contributing to SLCP governance. While the advantages of this alliance are numerous, also some challenges should be discussed within this chapter.

Literature on non-traditional and transnational initiatives, like the CCAC, has occasionally argued that their lose, voluntary character leads to weak commitments.⁵⁹ Also, under the CCAC only few and non-binding numerical targets have been released. There are no rules that bind countries to implementing the plans stated in their membership applications. Furthermore, many of the CCAC's achievements are difficult to measure, and often, members' emission reductions resulting from projects and policy implementation can only be proven in the future. Overall, there is no control mechanism that guarantees that promises made under the CCAC are kept. This leads to the conclusions that the CCAC is no alternative to an international climate treaty, nor can it be seen as a framing body for global regulations on air quality.

Even though the CCAC might orchestrate and incentivize action on SLPCs, it mostly depends on the individual states whether SLCP emissions are reduced. In spite of the CCAC's successes in awareness raising, it appears that in many countries the topic of SLCPs has not reached the top of political agendas. An example is Germany, where the term 'SLCP' is very rarely used in the political discourse. An explanation for this could be that even though one might think that the reduction of SLCPs is politically very attractive, because, here, the focus lies on the immediate future and positive near-term effects can be

⁵⁹ Aseem Prakash and Matthew Potoski, 'Collective action through voluntary environmental programs: A club theory perspective' (2007) 35 Policy Studies Journal 773; Ürge-Vorsatz and others (n 31).

expected, SLCP science is rather complex and its scientific understanding, e. g. data and impacts, is incomplete. SLCPs have different impacts than CO_2 (see Chapter 1). For example, methane is 84 times more powerful than CO_2 as a greenhouse gas in the first two decades after it is emitted, yet it is removed after approximately a decade and it is also a precursor to tropospheric ozone, which contributes to air pollution worldwide. These characteristics make policy-making more challenging. Some policy makers may also still fear a competition between the reduction of CO_2 and non- CO_2 emissions (for example, when it comes to the funding of activities or the priorities on the political agenda), even though the CCAC communicates clearly that its aim is to complement the UNFCCC's agenda.

Another challenge lies in the many heterogenous interests that exist within the CCAC, also a feature that is common to such large non-traditional alliances.⁶⁰ On the one hand, this may cause the CCAC to pursue a very broad range of topics. On the other hand, varying interests and motivations can be counterproductive and dampen the group's agreement on common objectives. This might be especially relevant, when it comes to the spending of funding; for example, on which type of projects the CCAC's money is to be used. As financial resources are typically constrained in such alliances as the CCAC, priorities need to be set. Overall, the availability of funding and the dependence on donations has limited the activities of the CCAC in the past, e. g. when the major donor, the US government, under former president Trump, had cut donations completely.

Counteracting interests and motivations can also influence the direction of the political dialogue pursued by the CCAC. For example, in 2021 and 2022, a focus was clearly set on methane, a theme pursued by the EU and the US. For some countries, methane might not be an immediate priority. Agreeing with all members and bringing all interests together also often leads to objectives and outputs that are rather broad and soft. This can be seen for example in the communiqués released by CCAC members at the High-Level Assemblies.⁶¹

The combination of the CCAC's voluntary character with the diverging interests creates the situation where some members are very active, some – only on special occasions, and others – hardly ever. The last group is in principle

⁶⁰ Charlotte Unger and Sonja Thielges, 'Preparing the playing field: climate club governance of the G20, Climate and Clean Air Coalition, and Under2 Coalition' (2021) 167 Climatic Change 41.

⁶¹ CCAC, 'Hubs' (n 17); Biermann and Pattberg (n 1); CCAC, 'Paris Communique' (2015) https://www.ccacoalition.org/en/resources/paris-communique accessed of September 2022.

free-riding: in other words, these members benefit from the activities of the CCAC community, for example, the knowledge sharing, without doing anything themselves. This might become a practical problem, if, for example, not enough members are willing to share the burden of administrative and practical work that needs to be carried out, such as evaluating submitted SLCP project proposals.

There are other practical challenges a large organization such as the CCAC faces, ranging from the balancing of funding for project implementation against administrative costs, to finding adequate leadership (the recent selection of a new head of the CCAC secretariat lasted for almost a year), or the administrative relationship with UNEP. Here, it remains somewhat untransparent how much influence UNEP has on the CCAC secretariat's day-to-day work. Also, in the project implementation work some challenging aspects can be found, for example the control and tracking of the projects' successes or the question of how model projects and methodologies can be upscaled and transferred to other countries, regions, and municipalities.

Last but not least, in the global climate and environmental policy landscape, a trend towards the launching of non-traditional alliances, initiatives and partnerships can be observed.⁶² This increases the complexity of the whole climate and environment governance architecture, and additionally bears the risk of creating overlaps among these initiatives. In the best case, alliances benefit from each other through mutual fertilization of topics, the growth of trust, and collaboration. For example, the CCAC invites members of other partnerships, e. g. the NDC Partnership,⁶³ to join as member or to participate in CCAC working meetings. In a more negative sense, this growth trend can also lead to competition for attention and resources among emerging initiatives. For instance, policy makers who represent their country in multiple initiatives must choose which meetings to attend, and where resources should be spent. In practice, more international alliances also intensify the difficulty to keep track of all their new developments and engagements. As of today, there are only small institutional overlaps.

SLCPs are also one among the items of the Arctic Council's agenda (see Chapter 7). This alliance of nations with territory in the Arctic had its first technical report on the impact of SLCPs in the Arctic released in 2008 and is focused

⁶² Hermwille (n 2); Thomas Hale, 'Transnational Actors and Transnational Governance in Global Environmental Politics' (2020) 23 Annual Review of Political Science 203.

⁶³ The NDC Partnership is a transnational alliance that aims at supporting countries with the implementation and improvement of their NDCs. See NDC Partnership, 'About Us' https://ndcpartnership.org/about-us accessed 05 September 2022.

specifically on methane and black carbon, because their mitigation can slow the rate of Arctic climate change in the near term. The Arctic Council has not a competitive relationship with the CCAC. However, many other initiatives, such as the above-mentioned NDC Partnership are invested in supporting countries with the implementation of the Paris Agreement. Further analyses would have to examine, how much these alliances – including the CCAC – overlap among each other, and close coordination and careful assessment are needed here in order to avoid an overabundance in climate initiatives.

5 Conclusion: the CCAC's Governance Contribution and Possible Future Developments

Throughout its ten years of existence, the CCAC has managed to occupy a niche in climate and environmental governance. Many of its activities have helped to give a politically neglected and scientifically complex issue a voice and brought it to the political agendas at the local – global level. Its role is here that of a pacemaker and awareness raiser that prepares the field of SLCPs for policy-making and the implementation of SLCP reduction.

In comparison to more formal regulatory arrangements, the CCAC's voluntary character and open structure makes it a much more flexible and dynamic governance actor. Even though this easy-access, voluntary contributions-based model might not lead to the generation of more ambitious climate (or environmental) targets, as it includes the mix of very heterogenous – and sometimes counteracting – interests, there is a strong value in this approach. The CCAC is invested in preparing and catalyzing SLCP emissions reductions. Many success stories can be seen in the implementation of a large array of projects on SLCP reductions, such as capacity building, and methodology improvement and some that have resulted in emissions reductions on the ground. These activities have led to more formal policy-making processes: CCAC has supported the development of national laws, regulations, and standards, which promise to reduce emissions in the future.

Also, the combination of voluntary engagement with a strong scientific basis and an approach that communicates the multiple benefits of SLCPs reduction increases the attractiveness of this alliance. In other words, there is 'nothing to lose' when countries join. This can be seen in the transnational, constantly growing membership. Getting more countries on board, especially large emitters like China, and a stronger engagement with the private sector would be beneficial for the CCAC's agenda. Such cooperation can gain more political support for projects, and last but not least might provide an alternative source of funding. Both types of extension can also be regarded from a critical perspective.

The CCAC has also a bridging and integrative function in several ways. First, an integrative, bridging function within the UN system can be assumed. The CCAC has brought together several UN bodies on the topic of clean air (and climate). For example, for several projects, data collection and events, a close cooperation between CCAC, WMO, WHO, and UNEP has taken place. In addition, integrative activity is carried out for specific topics such as: agriculture (where also the UN Food and Agriculture Organization, and UNEP are involved), or household energy (where the United Nations Development Programme and UNEP are involved). Also, the CCAC is contributing to the development and implementation of several international legal frameworks at the same time, ranging from the Montreal Protocol and its Kigali Amendment, resolutions under the United Nations Environment Assembly (UNEA) and the CLRTAP to the UNFCCC and the Paris Agreement.

The CCAC might be seen as an orchestrator of activities here. Stronger exchange among UN agencies and governmental experts who work on the different UN agreements can help to strengthen synergies and avoid trade-offs as well as integrate climate and environmental concerns into other areas of UN policy-making.

Second, the CCAC works at the intersection of air quality and climate policy. The integration of air quality and climate policy still faces many challenges in both policy and science. In the CCAC, governmental officials, scientists and NGO experts from both areas work closely together on this thematic intersection and may overcome existing barriers and fill knowledge gaps etc.

Third, to some degree the CCAC might also function as a broker or an intermediary to help countries access funding from third parties, such as the Green Climate Fund or the German International Climate Initiative. Thematically, some of the CCAC's activities, such as supporting national planning processes may fit under the roof of these climate finance initiatives. The CCAC's name might function as label for a certain project quality, facilitating project acceptance.

The structural change of the CCAC in 2020–2021 is an indication that the CCAC is becoming an even more flexible and dynamic body. For example, the thematic hubs are open to the collaboration with non-CCAC partners. The Focus of the CCAC clearly centers on the Paris Agreement, and most notably on the realization of the Global Methane Pledge – where it plays an advisory role. The CCAC will help to integrate methane reductions and possibly methane targets into countries' NDCs and help countries develop or update a methane

reduction action plan by COP27.⁶⁴ Also, there is a clear focus on implementation and supporting countries – first of all, countries of the Global South – in the realization of national planning processes, and, mainly, their NDCs.

These objectives may significantly contribute to the goals of the Paris Agreement. On this promising pathway there is still much to do for the CCAC, for both the political and technical sides. One aspect that might help is the increased investment in transferability and adaptation of good practice projects to other regions. The CCAC has created an enormous network with significant knowledge and action capacity. This multiplying and pushing force comes at a moment where it is most urgently needed to cope with the climate crisis, and where, on many occasions, we see a disruption of multilateralism and cooperation through conflict and war. NDC commitments alone are not enough to achieve the Paris Agreement's goals. Nevertheless, also the CCAC is not a surefire success. It depends on members investing their knowledge, time and last but not least financial resources to move the CCAC's program forward; it relies on each individual country to set up domestic policies to implement SLCP objectives and those members who are willing to implement lighthouse projects, set ambitious SLCP goals and policies, and thus provide a model for other members to follow.

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