Centre for
Climate Change
Economics and Policy

An ESRC Research Centre

Strengthening non-state climate action: a progress assessment of commitments launched at the 2014 UN Climate Summit

Sander Chan, Robert Falkner, Harro van Asselt and Matthew Goldberg

November 2015

Centre for Climate Change Economics and Policy
Working Paper No. 242

Grantham Research Institute on Climate Change and the Environment
Working Paper No. 216

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Grantham Research Institute on Climate Change and the Environment

d·i·e Deutsches Institut für Entwicklungspolitik

German Development Institute

UNIVERSITY OF LEEDS

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The Grantham Research Institute on Climate Change and the Environment was established by the London School of Economics and Political Science in 2008 to bring together international expertise on economics, finance, geography, the environment, international development and political economy to create a world-leading centre for policy-relevant research and training. The Institute is funded by the Grantham Foundation for the Protection of the Environment and the Global Green Growth Institute. It has nine research programmes:

1. Adaptation and development
2. Carbon trading and finance
3. Ecosystems, resources and the natural environment
4. Energy, technology and trade
5. Future generations and social justice
6. Growth and the economy
7. International environmental negotiations
8. Modelling and decision making
9. Private sector adaptation, risk and insurance

More information about the Grantham Research Institute on Climate Change and the Environment can be found at: http://www.lse.ac.uk/grantham.

The Centre for Climate Change Economics and Policy (CCCEP) was established by the University of Leeds and the London School of Economics and Political Science in 2008 to advance public and private action on climate change through innovative, rigorous research. The Centre is funded by the UK Economic and Social Research Council. Its second phase started in 2013 and there are five integrated research themes:

1. Understanding green growth and climate-compatible development
2. Advancing climate finance and investment
3. Evaluating the performance of climate policies
4. Managing climate risks and uncertainties and strengthening climate services
5. Enabling rapid transitions in mitigation and adaptation

More information about the Centre for Climate Change Economics and Policy can be found at: http://www.cccep.ac.uk.

The research described in this working paper was partly funded by the CCCEP Innovation Fund and by the German Development Institute (DIE).

The CCCEP Innovation Fund aims to stimulate the flow of innovative ideas on climate policy from both the practitioner and research communities. The Fund invites applications that outline innovative ideas that could help to advance climate policy. Ideas can relate to climate change mitigation or adaptation, to any stage of the policy process from inception to impact, to any level from the global to the local and to any setting in the UK or internationally, including business and the voluntary sector. The key requirement is that ideas – when developed – have the potential to make a real contribution to the advancement of climate policy.

More information about the Centre for Climate Change Economics and Policy can be found at: http://www.cccep.ac.uk

The German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) is one of the leading think tanks for global development and international cooperation worldwide. It is located in the UN City of Bonn. DIE's work is based on the interplay between Research, Policy Advice and Training. DIE is building bridges between theory and practice.

Research at DIE is theory-based, empirically driven and application-oriented. It provides the basis for the consulting activities of the Institute. DIE develops policy-relevant concepts, advises ministries, governments and international organisations, and refers to current policy issues. The training programmes of the Institute for university graduates and young professionals are integrated into the research and advisory process.

More information about the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) can be found at: http://www.die-gdi.de.

Strengthening Non-State Climate Action

A progress assessment of commitments launched at the 2014 UN Climate Summit

November 2015

Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science (LSE)

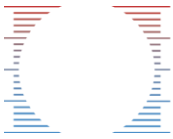
German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE)

Sander Chan

Robert Falkner

Harro van Asselt

Matthew Goldberg



Centre for
Climate Change
Economics and Policy

Grantham Research Institute on
Climate Change and
the Environment

d·i·e

Deutsches Institut für
Entwicklungspolitik

German Development
Institute

Executive Summary

This report provides the first progress assessment of climate actions launched at the 2014 UN Climate Summit in New York. It considers the distribution and performance of climate actions along multiple dimensions that are relevant to both mitigation and adaptation. While it is too early for a conclusive assessment of the effectiveness of climate actions, this study makes a first and indispensable step toward such an assessment. Initial findings are encouraging. One year after their launch, most climate actions have performed well in terms of producing outputs, putting them on track to implementing their commitments in the coming years.

The research for this project is underpinned by the Global Aggregator for Climate Actions (GAFCA), a database developed between January and September 2015 by a research team at the German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) and the London School of Economics and Political Science (LSE). GAFCA includes data on organizational characteristics, geography of implementation and output performance of climate actions. It creates the foundation for a long-term systematic examination of climate actions that can inform more effective efforts to strengthen such actions.

Our analysis is focused on three broad questions:

- Have organizers of the 2014 UN Climate Summit engaged a wide range of non-state and sub-national actions that set targets relevant to both mitigation and adaptation?
- Do climate actions align with the interests of both developing and developed countries, and do they achieve an appropriate balance in implementation in the global North and South?
- Have climate actions started to deliver on their commitments one year since they were launched at the 2014 UN Climate Summit? (Output performance)

Broad-based engagement

The 2014 UN Climate Summit organizers have been reasonably successful at mobilizing beyond the 'usual suspects,' i.e. governments from the North and large multinational corporations. However, patterns of participation also demonstrate the continued importance of 'traditional' actors in climate politics, in particular national governments and international organizations. International organizations lead half of all climate actions, confirming their crucial role as 'orchestrators' of climate actions, employing a wide range of measures to align stakeholders and their actions with public goals and international processes.

The 2014 UN Climate Summit engaged a great variety of climate actions that are not primarily concerned with emission reductions. An analysis of target setting reveals that most actions do not aim at mitigation directly; instead many actions focus on adaptation or assume indirect effects that might result in emission reductions. If this holds true for a larger universe of non-state and sub-national climate actions, then this is not sufficiently reflected in current research efforts and policy discussions that still consider climate actions as mainly mitigation measures.

Balanced implementation

Most climate actions have a global reach. This global orientation is consistent with the intention of the 2014 UN Climate Summit to gather leaders from around the world and to galvanize and strengthen action on a global scale.

Most of the coordination and planning of climate actions, however, is done in the global North. This may lead to the impression that climate actions mostly align with agendas of northern-based stakeholders. However, our analysis of implementation contexts indicates less of a 'Northern bias'. Patterns of implementation correspond with the varying functional needs of different climate actions. Agriculture and resilience actions mostly focus on low-income countries, while mitigation-oriented actions often aim at more developed countries with a larger emission reduction potential.

Output performance

Our analysis shows that, only one year after their launch at the 2014 UN Climate Summit, most climate actions have taken steps to implement their commitments. Most actions produced outputs that fit some (36 percent) or all (29 percent) of their principal functions. This finding compares well with historical precedents. Ten years after their presentation at the 2002 World Summit on Sustainable Development, 43 percent of 'Partnerships for Sustainable Development' still performed poorly, with many producing no output at all.

While the overall findings are encouraging, notable differences can be found between various action areas. A large number of resilience and agriculture actions have yet to produce specific outputs. In contrast, energy and industry actions feature relatively high output performance, and seem to be well on track to deliver. However, the fact that many energy and industry actions predate the 2014 UN Climate Summit raises questions about their ambition and their additional contribution in the context of the summit.

It should be noted, however, that the lack of output performance in a certain action area does not in itself indicate failure. Many newly established actions may simply be in an early stage of development and will take longer to produce results. The lack of output performance in the short term may also indicate a high level of ambition. This is especially the case for actions in areas that have been relatively underrepresented. For example, the organizers of the 2014 UN Climate Summit demonstrated considerable ambition by venturing into the less well represented action areas of resilience and agriculture. Actions in these newly prioritized areas will need more time to deliver on their commitments. Over time, however, climate actions will need to produce matching outputs to achieve intended impacts. To enhance output performance over time, climate actions will need institutional capacity to realize their ambitions. Moreover greater transparency and accountability could motivate partners within a climate action to deliver on their commitments.

Strengthening climate actions beyond Paris

The need for climate actions does not diminish after the Paris Climate Conference. If anything, climate action will be more necessary than ever to help realize national targets, to develop practical solutions, and to demonstrate the feasibility of more ambitious commitments both from governments and the private sector. In short, a continued effort is needed to maximize the potential of climate actions.

The findings of this study suggest strategic priorities and provide an argument for comprehensive and long-term orchestration by the UN and other international organizations.

Regarding strategic priorities, this study revealed different patterns of development, ambition, and output performance across action areas and types of actions. Orchestrators would benefit from taking these patterns into account when designing strategic interventions to improve the

effectiveness of a larger range of climate actions. For instance, the organizers of the 2014 UN Climate Summit demonstrated considerable ambition by including resilience as a separate climate action area. However, this study finds that resilience actions are at a greater risk to lack institutional capacity to deliver. With output performance still low, orchestrators should prioritize capacity building in the resilience action area and foster robust organizational support and monitoring mechanisms.

Governments and international organizations should also take decisive steps towards a long-term, more comprehensive framework for the engagement of non-state and sub-national climate actions. Through continued orchestration efforts, international organizations and governments can effectively respond to the changing nature of climate governance, one that increasingly features bottom-up dynamics and leverages the capacities of both state and non-state actors. More importantly, a much wider engagement of stakeholders will be necessary to halt global warming, and to realize a low-carbon and climate resilient transformation. Elements of a long-term, comprehensive framework could include:

- The distribution and linking of responsibilities and orchestration efforts in a collaborative network consisting of the UNFCCC secretariat, intergovernmental organizations, transnational initiatives and research organizations; to the effect that orchestration becomes a shared undertaking that builds on the capabilities of multiple partners.
- A navigable and regularly updated online platform that features existing climate actions and their commitments and synthesizes data on multiple (more specialized) registries. Such a platform would provide a systematic overview, which in turn enables a better understanding of a larger landscape of climate actions over time.
- Regular reviews of the performance of climate actions, to provide accurate data for investors, civil society, researchers, policy makers, and orchestrators. Regular reviews also improve transparency and allow aggregate analysis, systematic tracking of climate actions, and the drawing of lessons learnt.
- A capacity building facility that supports the sharing of lessons learned, brings together prospective partners, and supports governments and COP presidencies in their efforts to mobilize new and enhance climate actions.

Table of Contents

List of Figures and Tables

List of Abbreviations

ADP	Ad Hoc Working Group on the Durban Platform for Enhanced Action
CCAC	Climate and Clean Air Coalition
CCCEP	Centre for Climate Change Economics and Policy
COP	Conference of the Parties to the United Nations Framework Convention on Climate Change
CSA	Climate Smart Agriculture
DIE	German Development Institute / Deutsches Institut für Entwicklungspolitik
ESRC	Economic and Social Research Council
FOF	Function-Output Fit
GAFCA	Global Aggregator for Climate Actions
GHG	Greenhouse Gases
GRA	Global Research Alliance for Agriculture on Agricultural Greenhouse Gases
HFC	Hydrofluorocarbon
IFAD	International Fund for Agricultural Development
INDC	Intended Nationally Determined Contribution
IRENA	International Renewable Energy Agency
LPAA	Lima-Paris Action Agenda
LSE	London School of Economics and Political Science
NAZCA	Non-state Actor Zone for Climate Action
NGO	Nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
OGCI	Oil and Gas Climate Initiative
SE4ALL	Sustainable Energy for All
SLCP	Short-lived climate pollutant
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

1. Introduction[1]

Urgent action is needed to prevent global average temperatures from rising by more than the internationally agreed 2°C compared to pre-industrial levels. Governments need to show strong political commitment to take climate action, and seek an ambitious international agreement under the United Nations Framework Convention on Climate Change (UNFCCC) to facilitate and catalyze such action. Getting to a climate resilient and low-carbon future, however, is not a matter for governments alone – it requires innovative solutions and global engagement by a diverse range of non-state and sub-national actors. It is encouraging, therefore, that a growing number of cities, regions, investors, companies, civil society organizations and research organizations have initiated their own climate mitigation and adaptation actions, working either independently or in collaboration with international organizations and national governments. The importance of such private or public-private climate actions[2] is now widely acknowledged. In September 2014, UN Secretary-General Ban Ki-moon convened a UN Climate Summit – with leaders from business, finance, and civil society in attendance – at which over 50 climate actions were launched. More recently, the Lima-Paris Action Agenda (LPAA) was launched to "accelerate cooperative climate action now and in the future in support of the new, universal climate agreement" (UNFCCC 2015a), and the French Presidency of the Conference of the Parties (COP21) in Paris in December 2015 has declared climate actions to be one of the key pillars of the expected Paris deal.

Many observers and policy makers suggest that non-state and sub-national climate actions have great potential to strengthen global climate policy. Climate actions can help reduce emissions and contribute to the adaptive capacity of communities that are vulnerable to the detrimental effects of climate change. They can also supplement the international climate process and national policies, increase capacities and establish transnational norms and standards to enable low-carbon and climate resilient transformations. By demonstrating the viability and scalability of solutions, climate actions could also help diffuse innovations and lessons learnt (cf. Hoffmann 2011, Chan et al. 2015). Furthermore, they can gather societal support for public policies that address climate change and they could help mobilize additional resources and climate finance to implement governmental climate policies and national targets. These qualities render climate actions particularly relevant to a climate regime that now features more bottom-up dynamics, and policy makers and negotiators are particularly keen to understand how such actions could help governments with the implementation of their 'Intended Nationally Determined Contributions' (INDCs).[3]

[1] The authors thank Angel Hsu, Andrew Moffat, Amy Weinfurter and Jason Schwartz at Yale Center for Environmental Law and Policy for sharing their "Summing the Summit" data set, and Brendan Guy at the Natural Resources Defense Council for sharing the "Climate Summit Commitments" data set. We also thank Aarti Gupta (Wageningen UR), Birgit Lode (IASS Potsdam), Oscar Widerberg (VU University Amsterdam), Livia Hollins (UNFCCC), John Christiansen (UNEP) and Elizabeth Press (IRENA) for their advice on specific action areas. Finally, we are grateful to Maria Ivanova (University of Massachusetts Boston) and Charles Roger (University of British Columbia) for reviewing an earlier version of this report. It goes without saying that all remaining errors are our own.

[2] Climate actions have also been referred to 'climate commitments', in particular in the context of the 2014 UN Climate Summit.

3 For non-state and sub-national climate actions to help achieve mitigation targets in INDCs, it is important to provide for a robust system of greenhouse gas emissions accounting. This raises a number of methodological issues and practical challenges, such as the challenge of avoiding double counting of emission reductions (cf. Mosteller and Hsu 2015, UNEP 2015). These questions, however, fall outside of the scope of our study.

As the international community seeks to make climate actions by non-state actors an integral part of global climate governance, we need to develop a better understanding of the purpose and nature of these new initiatives, and whether they are likely to deliver on their promise of advancing global efforts to mitigate climate change and to adapt to its impacts. This paper presents the findings of one of the first comprehensive studies of the climate actions launched at the 2014 UN Climate Summit. It offers an overview assessment of the over 50 actions, with a particular focus on three aspects:

- the **organizational characteristics** of the climate actions, especially with regard to membership, main functions and targets, level of institutionalization and organizational capacity, and mechanisms for transparency;
- the **geographical distribution** of member organizations and areas of implementation, especially between countries of the developed and developing world; and
- the **output performance** of climate actions, which considers tangible results from actions and relates these to their stated functions.

This report helps to fill two important knowledge gaps in the existing literature. First, it provides an ex-post assessment of climate actions presented at the 2014 UN Climate Summit, and thus complements recent studies that have estimated the ex-ante *potential* of climate actions (CISL and Ecofys 2015, Hsu et al. 2015, New Climate Economy 2015, UNEP 2015, Widerberg and Pattberg 2015). Second, this study offers a more comprehensive assessment of climate actions. Previous studies have primarily focused on emissions reductions (CISL and Ecofys 2015, Hsu et al. 2015, New Climate Economy 2015, UNEP 2015), while this study considers a wide range of functional dimensions that are relevant to both adaptation and mitigation. Futhermore, the methodology employed in this study is applicable to a multitude of climate and sustainability actions. Hence, this study could become the starting point of a long-term systematic examination of both climate and sustainability actions that could help inform policy-makers, and could provide them with a better understanding of the larger phenomenon of non-state and sub-national initiatives in global governance.

Our analysis proceeds in three steps. Section 2 provides background information on private and hybrid climate initiatives that have emerged in recent years, including those launched at last year's UN Climate Summit. Section 3 briefly sets out the approach that we have taken in this study, and introduces the Global Aggregator for Climate Action database (Chan and Falkner 2015) that underpins our research (Annex 1 provides further information on the database and data collection). Section 4 then presents the main findings of our analysis of 52 initiatives, structured into three thematic areas: organizational characteristics (4.1), geographical distribution (4.2), and output performance (4.3). Section 5 summarizes the main findings and suggests directions for a long-term framework for engagement with climate actions.

2. Orchestrating Action: from the 2014 UN Climate Summit to a Long-Term Action Agenda

The nature of global climate governance is incrementally changing from a predominantly state-centred affair to one that involves more bottom-up dynamics (as evidenced by the pledge-driven INDC process) and that engages more sub-national and non-state actors across multiple levels and across different international forums. The bottom-up, action-oriented trend does not replace the multilateral climate regime; indeed, the UNFCCC retains its importance as the host of 'traditional' intergovernmental negotiations (Falkner 2015), but new forms of transnational governance have emerged that force us to reconsider the relationship between public and private actors (Abbott 2012, Bulkeley et al. 2014). The increasingly fragmented pattern of climate governance makes it difficult for governments and international organizations to align the many actors and their actions with the global goals of mitigating and adapting to climate change. In addition to their established roles of facilitating international processes and assisting in the implementation of internationally agreed policies, international organizations now routinely engage non-state and sub-national stakeholders in international processes, by entering into partnerships with them, by showcasing their climate-related actions, and by bring both state and non-state actors to the table in order to broker or enhance global climate actions.

This effort to align non-state and sub-national stakeholders and their actions with publicly agreed goals and international processes has been described as 'orchestration' (Abbott and Snidal 2009, Abbott 2012, Hale and Roger 2014). Through orchestration, international organizations can build positive linkages and create synergies that could improve a fragmented system of governance as a whole. For instance, international organizations could make use of high-profile intergovernmental processes to entice contributions from non-state and sub-national actors who want to be seen as 'part of the solution'. Conversely, international organizations could allow non-state and sub-national actions to showcase their actions in an international context, thereby demonstrating practical solutions and enhancing the prospects for an inter-governmental agreement.

Within the UN system, links are increasingly being built between non-state and sub-national actions on the one hand, and multilateral processes on the other. The 2014 UN Climate Summit, also known as the Leaders Climate Summit, is but one recent example of orchestration by the UN. The summit was the culmination of efforts by UN Secretary-General Ban Ki-moon and his office to bring together leaders from business, finance, and civil society to broker new and joint climate actions. The 2014 UN Climate Summit sought to "galvanize and catalyze climate action […] that will reduce emissions, strengthen climate resilience, and mobilize political will for a meaningful legal agreement in 2015." (UN 2014a) The summit, which has been described as a "different kind of summit" (UN 2014b: 1), was not part of the UNFCCC process. Instead, the UN Secretary-General convened a leaders' meeting outside the multilateral negotiations to generate momentum towards a new international agreement to be adopted at the 2015 Paris climate conference. Furthermore, the summit focused on concrete action instead of negotiating targets or seeking a formal international agreement. Considerable effort by the UN Secretary General's office went into the brokering of new climate actions. In addition, the summit featured an unusually broad agenda. For example, where previous engagement with non-state and sub-national climate actions mainly concerned mitigation (Climate Initiatives Platform 2015), climate resilience featured as a separate action area at the 2014 UN Climate Summit. At the Summit itself, 29 'action statements' and plans ('commitments') were

presented, and many of the action statements subsumed and clustered several different actions. Therefore, the total number of actions investigated in this study is higher than the number of action statements and commitments (for a more extensive description of our unit of analysis and a list of climate actions see Annex 2). In total, 52 climate actions were presented in eight action areas, as defined by the organizers of the summit (UN 2014a): agriculture, cities, energy, financing, forests, industry, resilience and transport.

While the 2014 UN Climate Summit appears to be a rather atypical climate conference, its orchestration efforts are in line with other international efforts to engage non-state and sub-national actors. In December 2014 at COP20 in Lima, the Peruvian government launched the Non-state Actor Zone for Climate Action (NAZCA), a platform that registers climate actions. At the same conference, the Lima-Paris Action Agenda (LPAA) was announced as a partnership between the Office of the UN Secretary General and the Peruvian and French governments (presidents of COP 20 and COP 21 respectively), to strengthen climate action "throughout 2015, in Paris in December and beyond" (UNFCCC 2015a) and to mobilize, support and highlight existing actions.

Furthermore, governments and the UNFCCC process increasingly recognize non-state and sub-national actors for their complementary actions. The negotiations towards a new climate agreement in the Ad Hoc Working Group on the Durban Platform on Enhanced Action (ADP) have repeatedly referred to the importance of non-state and sub-national actions in enhancing the pre-2020 (mitigation) ambition, and broad support for such actions can also be found in the negotiation positions of a range of national governments (Galvanizing the Groundswell of Climate Actions 2015a). More climate actions are likely to be presented at the Paris climate conference. Once a new agreement is adopted in Paris, and national pledges have been affirmed, climate actions are also likely to play a more prominent role in contributing to national implementation, both with regard to climate objectives as well as broader sustainable development goals.

Non-state and sub-national climate actions have considerable mitigation potential. For instance, Hsu et al. (2015) calculate that five of the climate actions launched at the 2014 UN Climate Summit could narrow the gap between a 'business-as-usual' development pathway and a pathway compatible with a maximum average global temperature rise of 2 °C, reducing emissions by 2.54 Gt CO_2e. Estimates of other sets of climate actions also indicate great mitigation potential. Blok et al. (2012) calculate that as few as 21 major climate actions could even 'bridge the emissions gap between national-level action and emission reductions required to stay below 2 °C with a reasonable degree of certainty. In a recent United Nations Environment Programme (UNEP) study, 15 major existing climate actions involving cities, companies, and sectors were estimated to have mitigation potential of up to 3.3 Gt CO_2e (UNEP 2015). Similarly, climate actions by cities and regions could have a major impact on mitigation. For instance, commitments adopted by 238 leading cities could reduce emissions by 2.8 Gt CO_2e by 2020, and 13 Gt CO_2e by 2050, equivalent to the emissions of all OECD countries in 2010 (Arup and C40 Cities Climate Leadership 2014). These studies apply different methodologies that may lead to different estimates (Mosteller and Hsu 2015), but the emerging picture is that researchers agree that non-state and climate actions have significant mitigation potential.

Climate actions do not necessarily contribute directly to the reduction of emissions, as they usually involve a long chain of effects. For instance, the technical examination process under the ADP features various climate actions as scalable solutions that could subsequently be adopted on a larger scale by governments. In fact, the most important impacts of climate actions may be indirect in

nature, for example when they demonstrate the viability and scalability of solutions, and could thereby help diffuse innovations and lessons learnt (cf. Hoffmann 2011, Chan et al. 2015). Moreover, climate actions can also leverage societal support for the implementation of governmental policies, engaging local and non-state stakeholders and increasing societal capacities to deliver on targets. Conversely, they also widen the scope of what governments consider to be doable, thereby paving the way for greater governmental commitments. For instance, when climate actions establish transnational norms and standards to enable low-carbon and climate-resilient transformations, national governments might adopt them at a later stage, which can in turn lead to greater uptake and even mandatory rules. These mechanisms do not apply to mitigation actions alone, they may also be relevant to resilient and sustainable development, and adaptation. Regarding adaptation, most studies indicate that few climate actions focus on issues beyond mitigation (Bulkeley et al. 2014; Climate Initiatives Platform 2015). However, even actions that primarily focus on reducing emissions are likely to have a significant impact beyond mitigation, for instance where they contribute to resilient and sustainable development and adaptation as co-benefits. Moreover, most studies may be overlooking climate actions that are primarily focusing on benefits such as adaptation (for an exception see: Dzebo and Stripple 2015). Adaptation actions are often more local and on a smaller scale, and therefore remain 'under the radar' when researchers and policy makers focus on 'high impact' and impacts at scale. Instead of categorizing actions under 'mitigation', 'adaptation', or other categories, we focus in our analysis on a broader range of functions that actions might fulfil in global climate governance, including raising awareness, lobbying, knowledge production and knowledge dissemination. Increased engagement of non-state and sub-national actors could also help mobilize additional resources and climate finance.

Whether the expected potential of climate actions will be realized remains uncertain. The factors that influence the success and failure of non-state and sub-national climate actions are not yet well understood, and systematic evidence of the effectiveness of such climate actions is still scarce. Skeptical voices warn that climate actions may present 'business-as-usual' practices as clean and green, and warn that they divert attention away from the multilateral climate process. Developing countries, moreover, are concerned that a greater emphasis on non-state and sub-national climate actions might suggest that developed countries do not live up to their international commitments, or shift the burden of action away from those that bear the greatest historical responsibility. It is therefore clear that we need to develop a sound knowledge base about non-state and sub-national climate actions to better understand their purpose and potential, as well as effectiveness over time.

3. Research Design: Building the Global Aggregator for Climate Actions

This section provides a brief overview of the research design and the Global Aggregator for Climate Actions (GAFCA) database that underpin the analysis in this paper. A more detailed discussion of the research methodology can be found in Annex 1.

3.1 Global Aggregator for Climate Actions

The aim of GAFCA is to establish a comprehensive source of information on the climate actions that were launched at the 2014 UN Climate Summit, with a view to developing a better understanding of their organizational characteristics, the geographic distribution of their membership and areas of implementation, and performance indicators.

After defining the main categories in the database and establishing a manual for the coding exercise, the initial data gathering stage focused on publicly available data from individual climate actions and their partner organizations, most of which can be found in internet sources. These included the website of the 2014 UN Climate Summit, websites established by individual climate actions, as well as social media accounts maintained by climate actions and/or their partner organizations. In a second stage, our research team contacted representatives, focal points and partner organizations of individual climate actions to complement the internet-based data search. In a third step, our research team sent out a standardised survey to partner organizations and focal points of climate actions (see Annex 3). The aim of the survey was to collect additional data, in particular data not (yet) publically available, and to corroborate the initially collected data. Out of the 52 initiatives we approached, we received 25 survey responses between 24 June and 30 September 2015. To ensure inter-coder reliability in the data collection process, the data were coded twice by different coders, and the initial coding was corrected on the basis of survey responses. Four interviews were held with focal points and partners to contextualize findings from individual climate actions and action areas. Finally, our main sector-specific research findings (energy, resilience, industry and agriculture) were reviewed by policy experts and scholars, and the overall analysis as presented in this paper was reviewed by two scholars.

In contrast to national policies and international agreements, climate actions by non-state and sub-national actors have not received the same level of attention. Climate commitments by governments are continuously tracked (for instance in the Climate Action Tracker (2015), or the CAIT Climate Data Explorer (CAIT 2015), and national targets are regularly aggregated, which allows researchers to assess whether the international community is on track to keep below 2°C and whether current commitments can bring about a low-carbon and climate resilient future (UNFCCC 2015b). By collecting a large set of data across the entire field of climate actions, GAFCA extends this kind of rigorous analysis to subnational and non-state actors, thereby making these actions comparable. This should allow both researchers and practitioners to gain a better understanding of this new phenomenon in global climate governance. In order to improve international ‘orchestration’ efforts, international organizations and governments need to understand whether and where any gaps exist in the emerging field of transnational climate governance, and how well the individual climate actions are performing. The GAFCA database is designed to be extendable to other climate actions beyond those announced at the 2014 UN Climate Summit. GAFCA offers a relatively easy and cost-effective tool for capturing a much wider range of non-state and sub-national climate initiatives that have already been created or are likely to emerge in future years.

In the subsequent section, we present the findings of our first-cut analysis of the GAFCA database. Our analysis is focused on three broad thematic areas, which we briefly introduce and explain in further detail below: the organizational characteristics of climate actions; their geographical distribution, in terms of membership and areas of implementation; and their output performance.

3.2 Organizational characteristics

The analysis of organizational characteristics is important because they influence the performance of climate actions (cf. Pattberg et al. 2012). The 52 climate actions in the GAFCA database show much organizational diversity. In this study we look at the functional characteristics of climate actions (what do they do exactly?); the transparency and accountability of climate actions (are their activities traceable?); and their institutional capacity (do they have what it takes to deliver?).

With regard to the main **functions** that climate actions perform, this paper takes into account a wide range of roles in climate governance, from producing policy-relevant knowledge to disseminating such knowledge, training people, lobbying or consulting governments, or developing low-carbon products. Our intention is to capture the full breadth of activities that climate actions undertake. We thus go beyond the more limited categorization of functions into mitigation and adaptation activities, or climate resilience as per the 2014 UN Climate Summit. The second organizational feature concerns the question of whether the activities of an initiative are traceable, which is seen as a necessary condition for being able to assess whether it is delivering on its promises. In this context, we examine two specific characteristics: the presence or absence of clear and measurable targets, as well as monitoring and reporting mechanisms. Actions with **clear and measurable targets** enable performance assessment against stated objectives and are better equipped to deliver effective climate action. The presence of **monitoring and reporting mechanisms** improves transparency and accountability; it should also motivate partners in climate actions to deliver, especially when reputational gains or losses are at stake.

Finally, climate actions also need a certain degree of **institutional capacity** to deliver on their promises and to successfully implement their policies. In particular, they need dedicated resources - financial, technical and human - to attain their goals. Well-resourced climate actions are more likely to move beyond aspirations towards implementation. While we do not expect a single organizational model of climate action to be associated with high productivity, we expect that a higher level of institutionalization, measured by a compound indicator that includes the presence of a secretarial or dedicated staff and the presence of monitoring and reporting mechanism, relates to better performance.

3.3 Geographic patterns of implementation

Climate change is a global challenge that requires mitigation and adaptation responses around the world. The analysis of geographic patterns of implementation helps to better understand the scope of climate actions (are envisaged impacts local, regional or global?), where decisions are made, and where actions are implemented (where are the beneficiaries?). Understanding these patterns is also of political importance. When climate actions are highly concentrated in industrialized countries and mainly benefit actors based in wealthy countries, or are perceived to be doing so, they and international organizations that seek to mobilize climate actions might not muster the necessary political support from developing countries. This risk has also been identified in previous studies, which have have found that many lead actors in non-state and sub-national actions are based in the industrialized world (cf. Bulkeley 2001, Bulkeley et al. 2012, Pattberg et al. 2012). It is possible that

climate actions can exacerbate existing imbalances when a large majority of them are led by northern-based actors and when the main beneficiaries are based in the global North. Conversely, international organizations and other orchestrators of climate actions are more likely to enjoy widespread political support if they are responsive to geographic imbalances, mobilize actions where they are urgently needed, and engage partners most affected by climate change,. Moreover, actions focussed on developing countries are also more likely to benefit the most poor and vulnerable countries and communities. An assessment of the geographic patterns of implementation and leadership of climate actions can therefore help determine whether the UN's orchestration efforts at the 2014 UN Climate Summit were able to galvanize climate actions in the global South.

Our analysis considers the **geographic distribution** of the members of climate actions, and particularly the **location of lead partners, secretariats and focal points**. It also examines how **implementation contexts** of climate actions are distributed between high-income, middle-income and low-income countries.

3.4 Output performance

Our study is the first to assess what climate actions have produced one year since their presentation at the 2014 UN Climate Summit, and is therefore an important complement to recent studies that forecast impacts based on self-declared commitments by climate actions (CISL and Ecofys 2015, Hsu et al. 2015, Widerberg and Pattberg 2015). We particularly consider the **output** of climate actions, that is, the tangible and attributable climate-related activities and products that resulted from the actions, such as research publications, workshops, technical installations, websites, marketable products and campaigning material. Moreover, we assess **output performance** by considering whether produced outputs match the functions a climate action seeks to fulfil (see 3.2). For instance, a training manual would be an output fitting for an action that aims at training and capacity building, whereas the same output may be less relevant to an action aiming at campaigning and raising awareness to a large audience (see Annex 1 for a description of our measure for output performance).

In our view, delivering specific outputs is a necessary condition to achieving desired environmental impacts or behavioural change. While it is difficult to directly attribute environmental impact or behavioural change to individual actions, outputs are easier to track and attribute. The assessment of output performance could be seen as the first step towards a deeper evaluation of environmental impacts and behavioural change.

The assessment of output performance significantly narrows the number of cases for further assessments, because outputs are necessary but insufficient to achieve behavioural change and changes in environmental indicators. Moreover, the production of outputs indicates that a climate action is more than a commitment on paper, and fitting outputs indicate that an action has taken steps to implement its commitment. Further assessments of climate actions' effectiveness will be necessary and could build on output assessments as a first-cut analysis. For instance, subsequent research could focus on actions that have produced fitting outputs and establish the extent to which they have actually met their targets (in quantitative and/or qualitative terms). In the meantime, the current report seeks to make an important contribution by: rendering a large number of climate actions comparable; balancing common assessments of pledges and promises by climate actions with an assessment of actual outputs; and providing an evidence base for developing a long-term and comprehensive agenda to strengthen climate actions.

The assessment of output performance in this report should also be seen in the context of international efforts to leverage novel and innovative actions. Relatively low output performance may be the result of ambitious orchestration efforts and pioneering actions that venture into new areas of cooperation – in which case low output performance may be a measure of high ambition rather than of failure to deliver. Over time, however, climate actions will need to deliver matching outputs to achieve intended impacts; in this sense output assessment could be part of a wider assessment of effectiveness.

4. Analysis

In this section, we present the main findings of our analysis of the GAFCA database. As discussed above, we focus on questions relating to organizational characteristics, geographic patterns of leadership and implementation, and measurable outputs produced by climate actions since their launch at the 2014 UN Climate Summit. For the most part, we present results in aggregate form, for all 52 climate actions. The distribution of actions across action areas (as defined by the organizers of the 2014 UN Climate Summit, UN 2014) is uneven (see Figure 1), which complicates aggregate analysis of smaller action areas and limits the scope for comparing quantitative indicators across different action areas. Where appropriate, however, we present results by action areas that feature at least five actions (as in the case of agriculture, energy, resilience and industry) and compare them to the sample average.

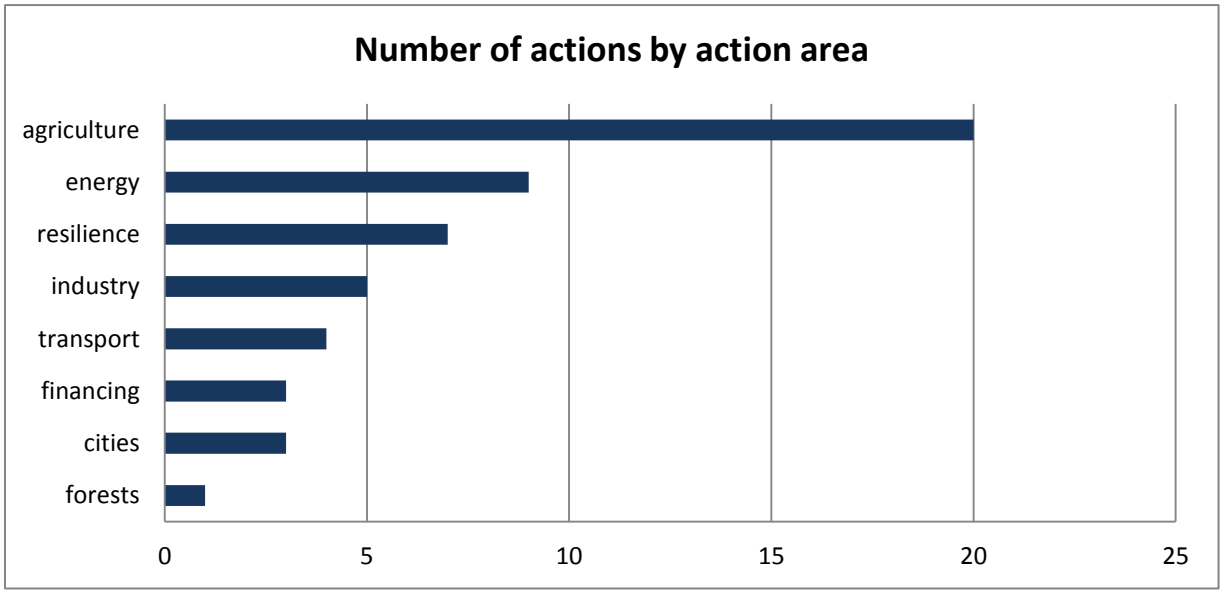


Figure 1 Numbers of actions by action area

4.1 Organizational characteristics

Patterns of participation

The sample of climate actions emerging from the 2014 UN Climate Summit is characterized by considerable diversity. Some actions were launched by single companies (e.g. Walmart, Kellogg's, McDonald's), while most actions are partnerships between several organizations. In total, 943 partner organizations are engaged in the 52 actions listed in GAFCA, averaging approximately 18 partners per action.

Although climate actions are commonly perceived to be transnational efforts outside the state-centred climate regime, national governments and international organizations are the most frequent partners in climate actions (see Figure 2), while sub-national governmental actors (such as cities and regions) are the third most prominent type of partner. In spite of the UN Climate Summit's emphasis on business and industry efforts, only 11 percent of all partners belong to this category. Moreover, the summit was only moderately successful at mobilizing other transnational actors, with non-profit organizations and NGOs, together with research and education organizations making up 17 percent

of all partners. This pattern of participation demonstrates the continued importance of 'traditional' actors in climate politics, in particular national governments and international organizations.

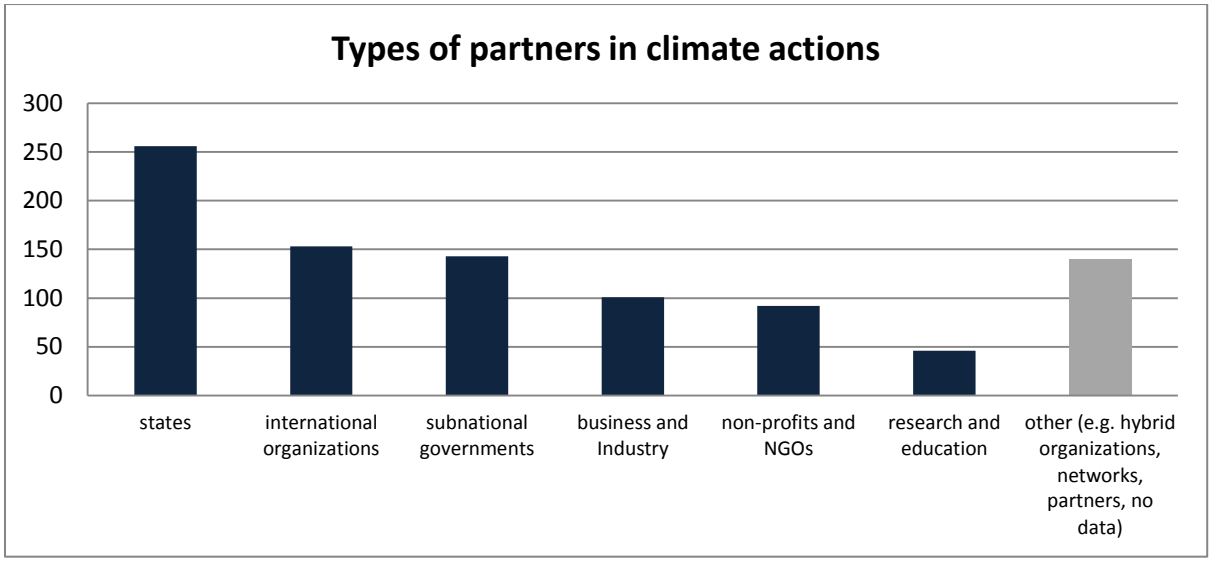


Figure 2 Types of partners in climate actions

When it comes to leadership in climate actions, although national governments feature most often as a partner it is international organizations that lead half of all climate actions (see Figure 3). Business and industry organizations take a distant second position as lead partners. These patterns of leadership confirm the crucial role that international organizations play in orchestrating climate action. The fact that international organizations lead most climate actions may also explain the high occurrence of national governments and agencies as partners. International organizations tend to have well-established working relationships with national governments and are accountable to them. Accountability relations in transnational governance institutions may not be as formal and strict as they are in intergovernmental institutions, but international organizations clearly see a benefit in involving national governments more than any other type of stakeholder.

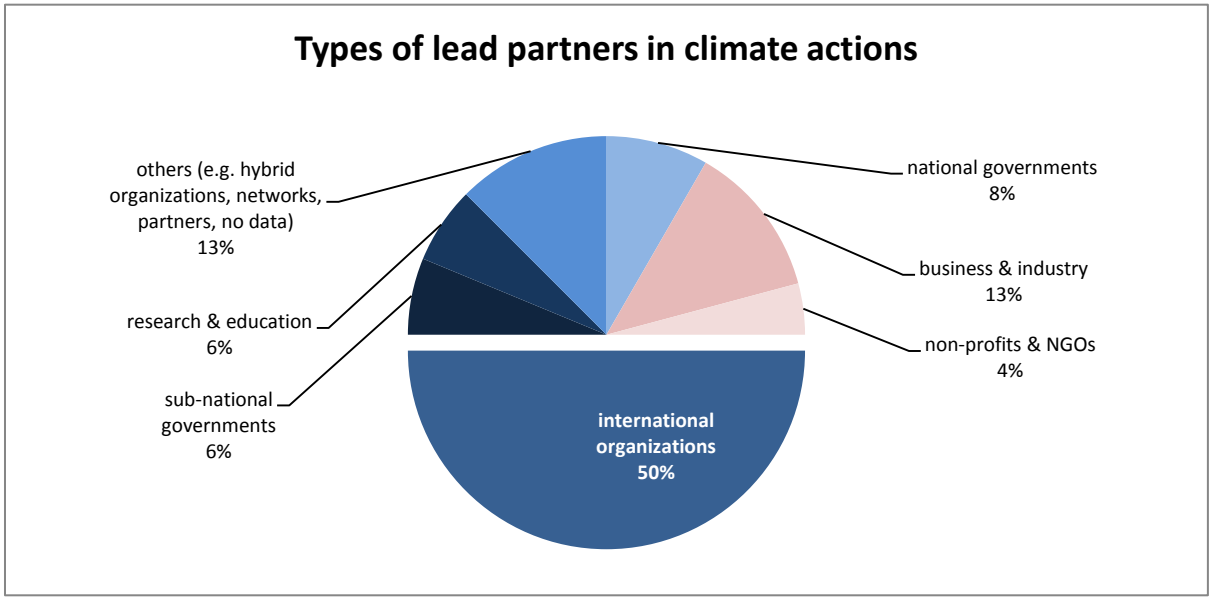


Figure 3 Types of lead partners in climate actions

Lead partners have also been reasonably successful at mobilizing beyond the 'usual suspects,' i.e. governments from the North and large multinational corporations (Figure 4). Out of the 260 governmental partners mobilized, 80 (30 percent) were governments from OECD countries. Among business and industry, 32 percent belonged to the top 200 of the world's largest companies.[4]

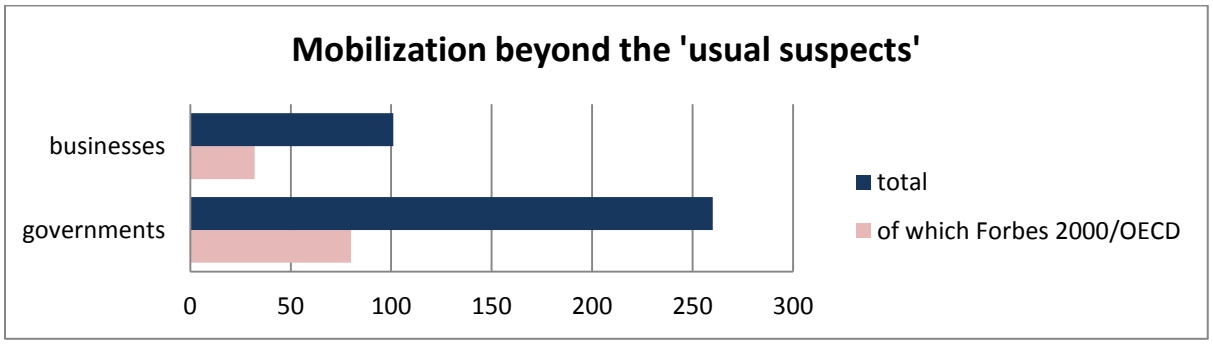


Figure 4 Mobilization beyond the 'usual suspects'

Functional characteristics

To better understand the functional characteristics of climate actions, this study considered a wide scope of possible functions that climate actions seek to fulfil in climate governance. To take into account the multifaceted functionality of climate actions, up to three of the most important functions were coded for every climate action.[5] As Figure 5 shows, climate actions seek to perform a wide range of functions (see Annex 1). Most actions aim to advance 'policy planning' – which is defined as the production of policy plans and the development of planning and policy instruments – whereas institutional capacity building (defined as the building of new institutions with or without legal status or the expansion and support of existing institutions) is the third most occurring function. Most climate actions announced at the 2014 UN Climate Summit thus seek to primarily support and strengthen public policy. Considerably fewer climate actions focus on lobbying or campaigning. This possibly reflects the priorities of international organizations (that most frequently feature as lead partners), in particular the UN and the organizing team of the summit. UN and international organizations are accountable to national governments and may be careful about engaging in activities to lobby governments directly engaging in mass appeals through campaigning. Surprisingly few actions engage in technical implementation and 'on the ground action' (for example, deploying new renewable energy generation) or the development of products that could directly contribute to emissions reductions. This functional pattern shows that this set of climate actions is not primarily concerned with undertaking concrete emission reduction measures. If this holds true for the larger universe of non-state and subnational climate actions, then this is not sufficiently reflected in current research as most still consider climate actions first and foremost as mitigation measures (cf. Blok and Höhne 2012, UNEP 2015, CISL and Ecofys 2015).

[4] Number of businesses in Forbes top 2000. See www.forbes.com/global2000/list

[5] Most climate actions address multiple functions. Some refer to many functions that are not necessarily addressed with the same urgency. In order to both reflect the multi-functional character of climate actions and avoid focusing on secondary (less important) functions, the research team coded up to three primary functions.

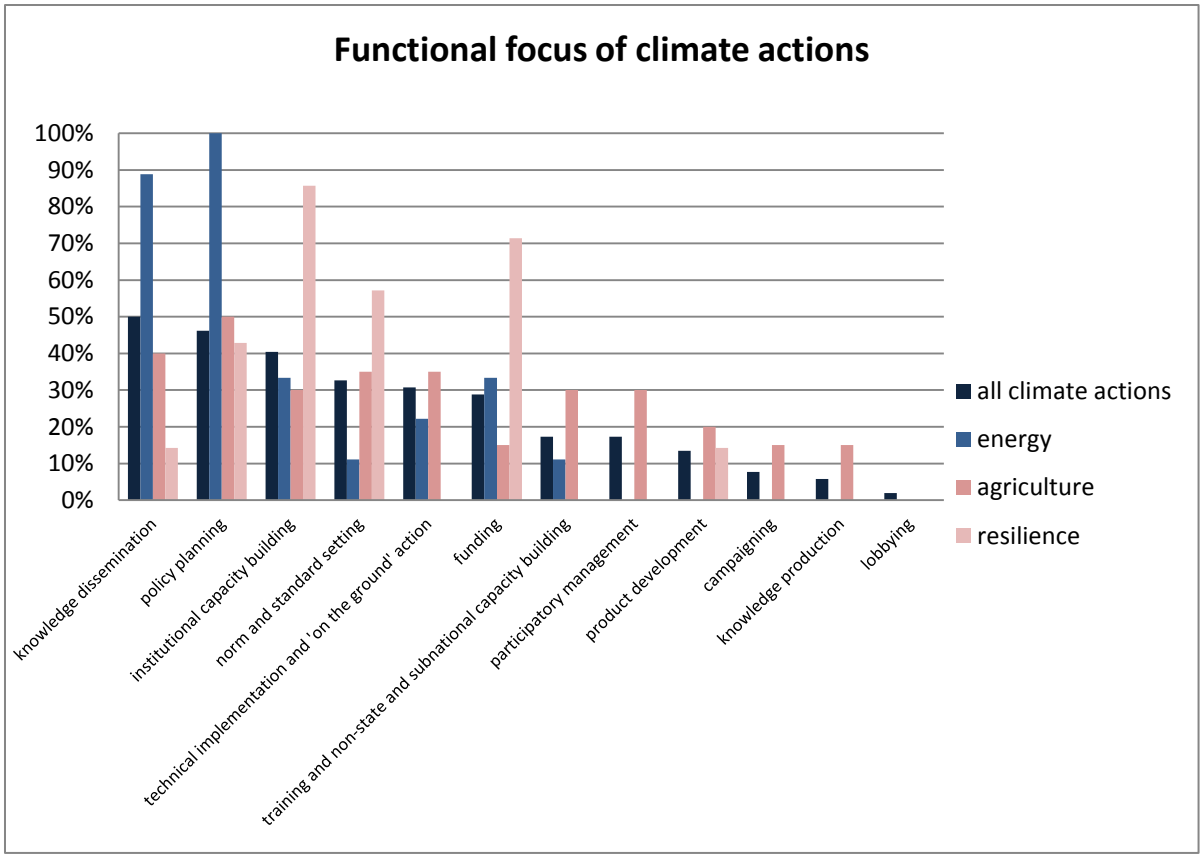


Figure 5 Functional focus of climate actions

Notable differences are found between the various action areas. In the field of energy-related actions, all actions count policy planning as one of their principal functions, whereas actions in the resilience action area are primarily concerned with institutional capacity building, norm- and standard-setting and the raising and provision of funds.

Level of institutionalization/organizational capacity

In launching various 'commitments' to advance climate action, the 2014 UN Climate Summit clearly sought to raise the level of ambition, even if the commitments are voluntary in nature. How likely are climate actions to deliver on their promises? Research on transnational climate governance suggests that high levels of institutionalization (Chan and Pauw 2014, Widerberg and Pattberg 2015)[6] and clearly defined targets (Galvanizing the Groundswell of Climate Actions 2015b) are closely associated with higher levels of performance by transnational initiatives. In our analysis, we therefore examine climate actions' capacity to realize their ambitions by focusing on organizational and monitoring capacities and financial resources.

All climate actions need certain financial resources to cover operational costs and to invest in activities that support their aims. As we found, however, the financial capacity of most climate actions remains unclear, not least because publicly available information on their financing is scarce.

6 A higher level of institutionalization may be associated with better performance, as it indicates that individual actions have the autonomous capacity to implement their own commitments. However, in the wider landscape of climate governance, the presence of many climate actions may lead to further fragmentation and possible inefficiencies. Although fragmentation is not necessarily detrimental (cf. Van Asselt 2014), multiple climate actions may address the same issues, creating overlapping institutions that may occasionally conflict with one another, or they may interact in ways that lead to sub-optimal outcomes (e.g. a 'race to the bottom').

Only 14 climate actions in our sample aim to provide or raise funds, and only about 29 percent of these have already raised or distributed funding. Of course, it is still early days for many recently launched initiatives, and greater capitalization can be expected as climate actions move beyond their initial start-up phase. However, continuous underfunding has proven to be a problem in the past for many non-state and sub-national initiatives. For instance, 65 percent of 'Partnerships for Sustainable Development' were still looking for funding four years after their presentation at the 2002 World Summit on Sustainable Development in Johannesburg (Biermann et al. 2007). If even climate actions that explicitly focus on raising and providing capital continue to struggle to secure access to adequate funding, then their effectiveness and that of other climate actions is likely to be called into question.

Climate actions also benefit from clear target-setting and monitoring mechanisms to track their progress in meeting their targets. We found that just over half of all climate actions (54 percent) have set quantified targets (figure 6).

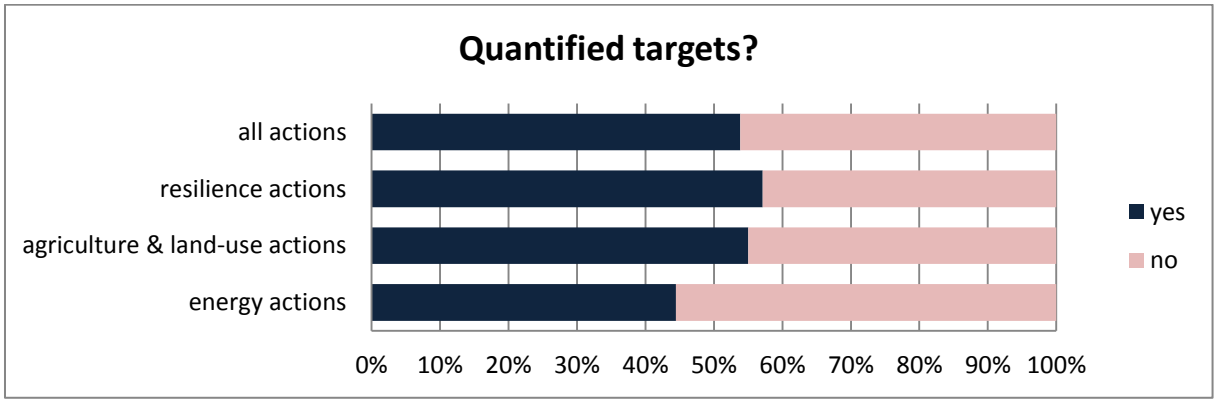


Figure 6 Quantified targets?

It should be noted that quantified targets do not necessarily mean emission-related targets. In fact, most quantified targets set by climate initiatives do not relate to the reduction of emissions (Figure 7), although there are significant differences between the various climate action areas: The majority of quantified targets set in the energy action area relate to mitigation; most targets set by resilience actions relate to mobilizing and distributing funding; and many targets set by agriculture actions relate to the number of people positively affected. This diverse pattern of target-setting suggests that climate actions go well beyond the challenge of climate change mitigation, aiming instead at a wider range of climate and sustainable development objectives.

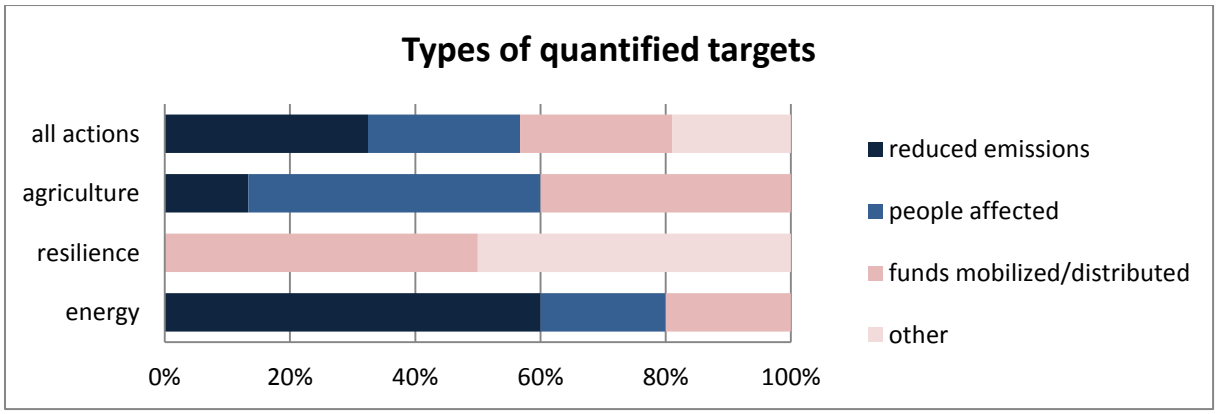


Figure 7 Types of quantified targets

In addition, a large number of actions (44 percent) already have monitoring arrangements in place (Figure 8). This is an encouraging finding from the perspective of transparency and accountability. Greater transparency and accountability could motivate partners to deliver on their commitments, while also helping to make progress traceable in cases where clear targets have been set.

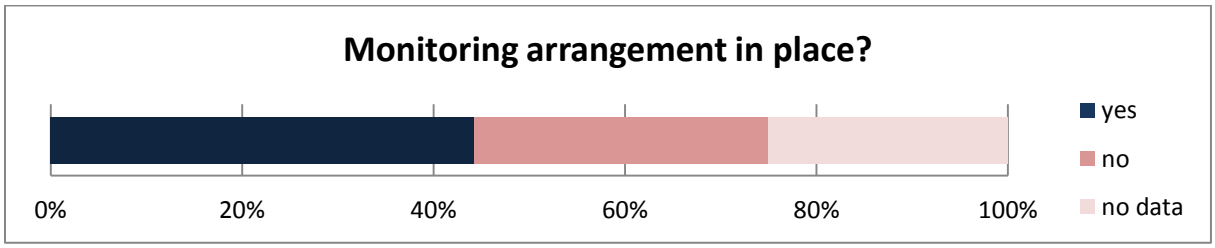


Figure 8 Monitoring arrangement in place?

Given the recent nature of most climate actions, it is encouraging to find that 44 percent have dedicated staff and/or a secretariat. For a majority of climate actions, however, we found no dedicated staff or secretariat, which may raise the question whether they lack institutional support. This does not mean, however, that all actions without dedicated staff or secretariat are bound to fail. Different types of climate actions require different types of organizational capacity, and some actions do not need an organization to administer activities following their launch. This is the case for the various declarations presented at the 2014 UN Climate Summit, such as the 'Global Investor Statement on Climate Change', the 'Aviation Action Statement', and the 'New York Declaration on Forests'. Such declarations can become influential provided they are embedded in larger networks of stakeholders that voluntarily implement them. In such a case monitoring arrangements should not be geared towards efforts within and by a climate actions, rather monitoring should focus on the uptake and implementation by other organizations. Similarly, the organization of mass mobilization actions, such as the 'Global Divest-Invest Movement,' relies on support from and implementation by many – potentially informal – networks, which makes it difficult to attribute impacts to a particular action. However, most climate actions engage a more limited number of organizational partners and need dedicated staff or secretariats to coordinate and implement joint activities.

Our analysis also finds considerable variation in the level of institutionalization (measured in terms of the presence of monitoring arrangements and dedicated staff or secretariats,[7] see Figure 9) across different climate action areas. A relatively low level of institutionalization can be observed among resilience and energy actions, while a medium to high level of institutionalization can be found among agriculture actions. It is worth noting that a low level of institutionalization does not necessarily preclude effectiveness. For instance, climate actions in the energy area are more likely than other actions to be nested within larger organizations or initiatives, such as the International Renewable Energy Agency (IRENA) or SE4ALL (Sustainable Energy for All), and therefore do not require an autonomous organization. Similarly, several actions in the industry action area were launched under the umbrella of the Climate and Clean Air Coalition (CCAC). In such cases, newly introduced actions may perform better because they benefit from the support and experience of more established organizations with a track record of programme delivery. In fact, by other definitions of institutionalization that include situations of institutional embeddedness, some actions that we have analyzed might be considered as having high institutionalization (see findings in Section

[7] These two metrics are used as proxy indicators for an initiative's accountability and autonomy, which will affect an initiative's capacity to carry out its stated objectives.

4.4). Furthermore, some functions, do not necessarily require a high level of institutionalization or detailed monitoring functions; for instance, knowledge dissemination could be a one-off activity by making data available on an online platform (that may or may not be regularly updated). However, in the case of the climate actions in the resilience action area, the low level of institutionalization does raise questions about their capacity to deliver on their targets. Most resilience actions aim at institutional capacity building and raising and distributing funding, while few established organizations promote resilience as a separate action area. Resilience actions are therefore at a comparatively greater risk of suffering from institutional capacity gaps if they lack robust organizational support and monitoring mechanisms.

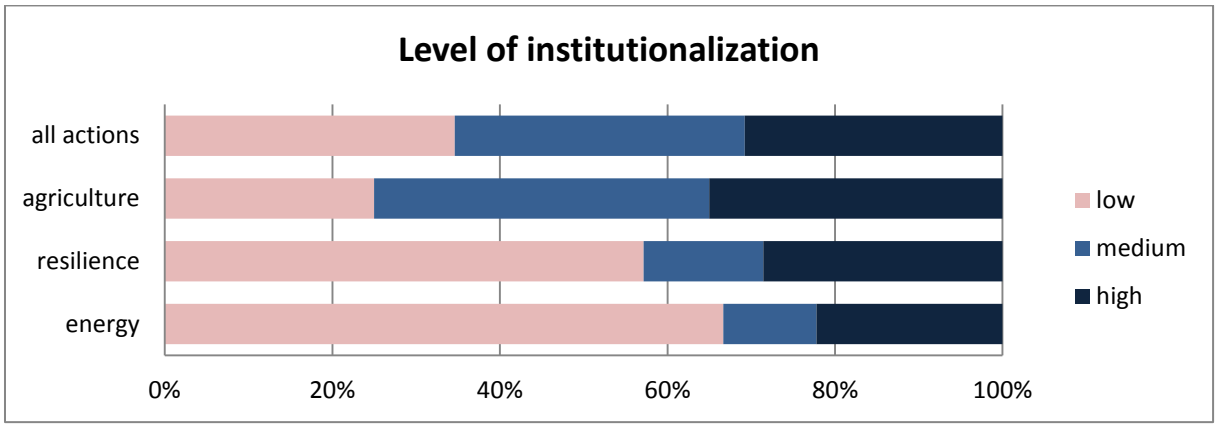


Figure 9 Level of institutionalization

4.2 Geographic patterns of implementation

Geographic scope

Because climate change impacts are felt globally, climate actions ought to also take place worldwide. A closer look at the geographic scope of climate actions gives an indication of whether impacts will be local, national, (world) regional, or global. There is considerable variation among the 52 actions. Some actions are focused on single countries, such as Nigeria's 'National Agricultural Resilience Framework and the Planting with Peace Program' and Costa Rica's 'Environmental Services Recognition Program'. However, most actions have a broader geographic focus, on continents (e.g. the 'Africa Climate Smart Agriculture Alliance'), or globally (e.g. 'Global Geothermal Alliance'). The vast majority of climate actions target several countries, either with a global focus (61 percent) or focused on certain world regions (22 percent) (Figure 10). Agriculture is the main action area where at least a small share of individual initiatives (18 percent) is aimed at national or sub-national implementation. The predominantly global orientation is consistent with the intention of the 2014 UN Climate Summit, which aimed to gather leaders from around the world and to galvanize and catalyze climate action at a large scale.

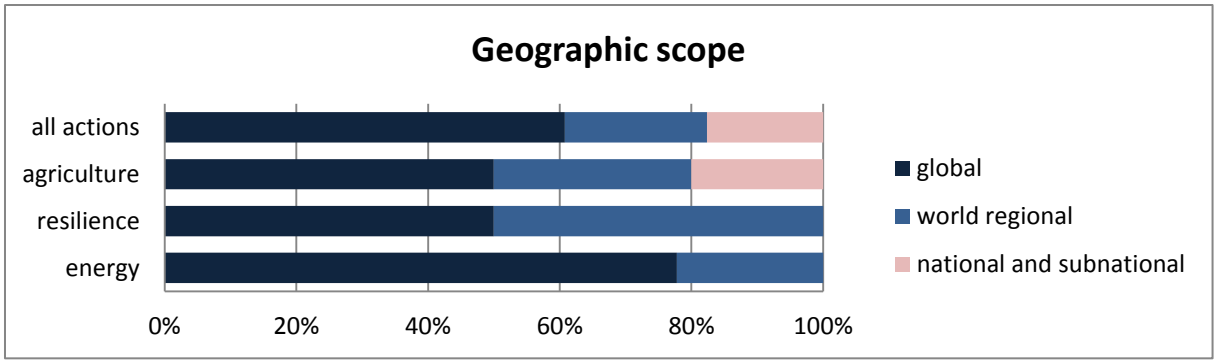


Figure 10 Geographic scope

North-South balance

While the majority of climate actions are indeed global in orientation, how are they divided between the global North and South? While most of the mitigation potential can be found in developed and emerging economies, the need for resilience and adaptation is usually greatest in developing countries (e.g. need for preparedness to droughts). Moreover, the differentiated effects of climate actions are a contentious political issue because of the perception that non-state and sub-national actions are mostly led by developed country organizations. This perception has been reflected in the UNFCCC negotiations, where developed countries have often been more supportive of building stronger links between the international climate regime and non-state and sub-national action than developing countries.

Although patterns of participation shows considerable engagement beyond the 'usual suspects' (see Figure 4), data on the location of secretariats, lead organizations and focal points indicate a significant North-South imbalance, with the majority of climate actions being coordinated from North America and Western Europe (Figure 11). Because half of all climate actions are led by international organizations, most of which happen to be located in the North but do not necessarily represent Northern interests, their dominance in steering such actions tends to distort the overall picture. However, the geographic patterns of location of secretariats, lead organizations and focal points does not become more balanced when we exclude these actions from the analysis and only consider the actions that are led by actors other than international organizations. Climate actions not led by international organizations are primarily located in the European Union and the European Economic Area, as well as in North America. This does not necessarily mean that climate actions primarily represent the interest of northern-based actors; in fact, many actions are implemented in, and benefit developing countries (see below). However, if most of the coordination and planning is done in the global North, it may lead to the impression that climate actions mostly align with agendas of northern-based stakeholders. More research is necessary to determine whether and to what extent this is the case.

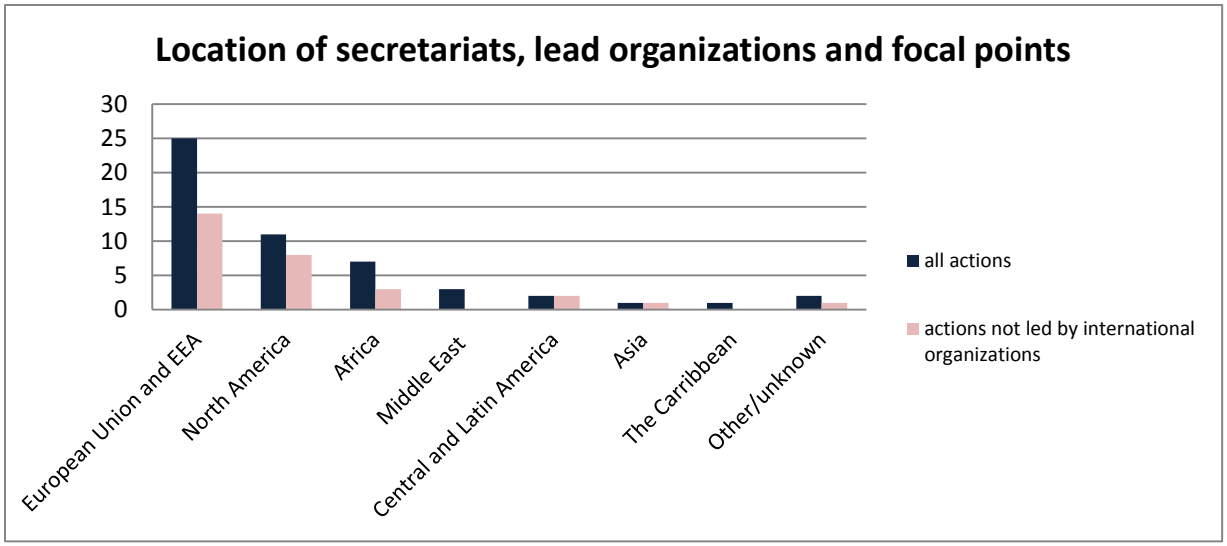


Figure 11 Location of secretariats, lead organizations and focal points

Given the global orientation of most initiatives, we would expect to see a widely dispersed range of areas of implementation by climate actions beyond the global North. This is borne out by our analysis: a substantial number of low-income and lower-middle income economies[8] are among the reported countries of implementation by climate actions. 25 percent of actions are being implemented in upper middle-income economies and 25 percent in high-income countries (figure 12). Overall, there appears to be a reasonably balanced distribution of areas of implementation across low, lower-middle, upper-middle and high-income economies.[9]

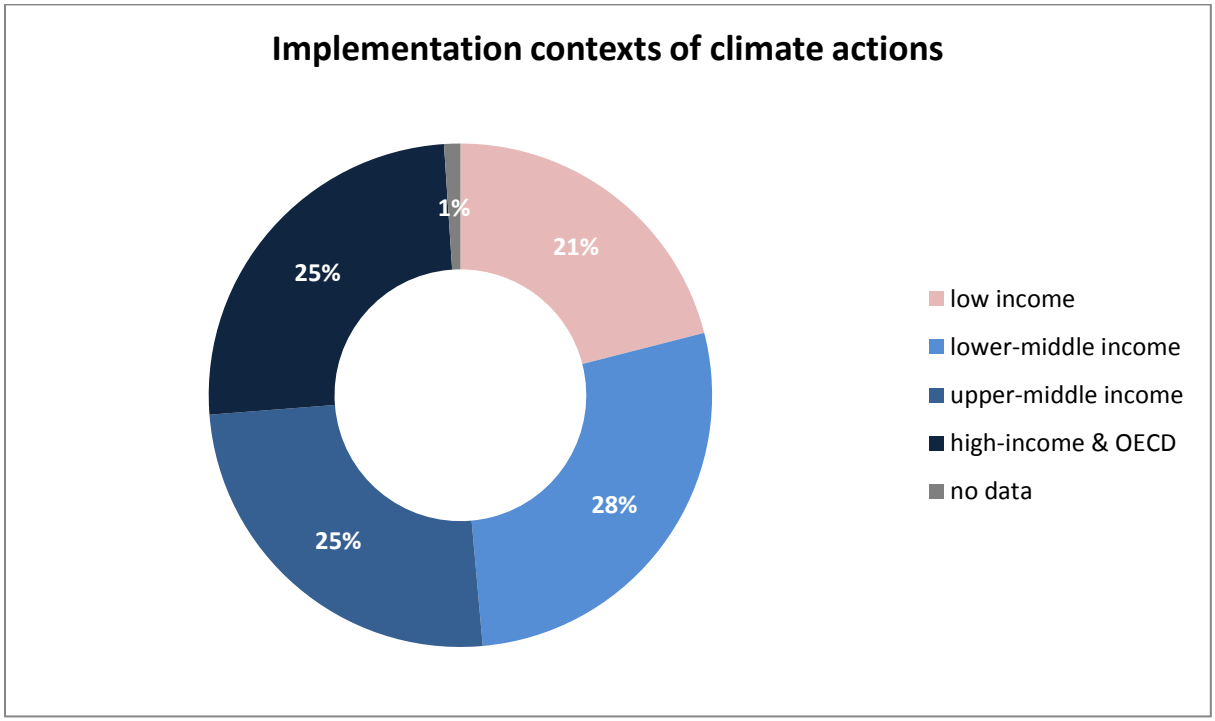


Figure 12 Implementation contexts of climate actions

[8] We classified countries of implementation by country groups by income, as defined by the World Bank. http://data.worldbank.org/about/country-and-lending-groups, accessed 14 July 2015.

[9] Further research could extend the analysis of country distribution to the distribution of initiatives according to countries' populations, shares in global emissions, etc.

Significant differences in the geographic distribution of areas of implementation can be observed, however, between different climate action areas. For example, the majority of reported countries of implementation in the resilience and agriculture action areas concern low-income and lower-middle economies (Figure 13), while most industry commitments focus on high-income or upper-middle income economies.

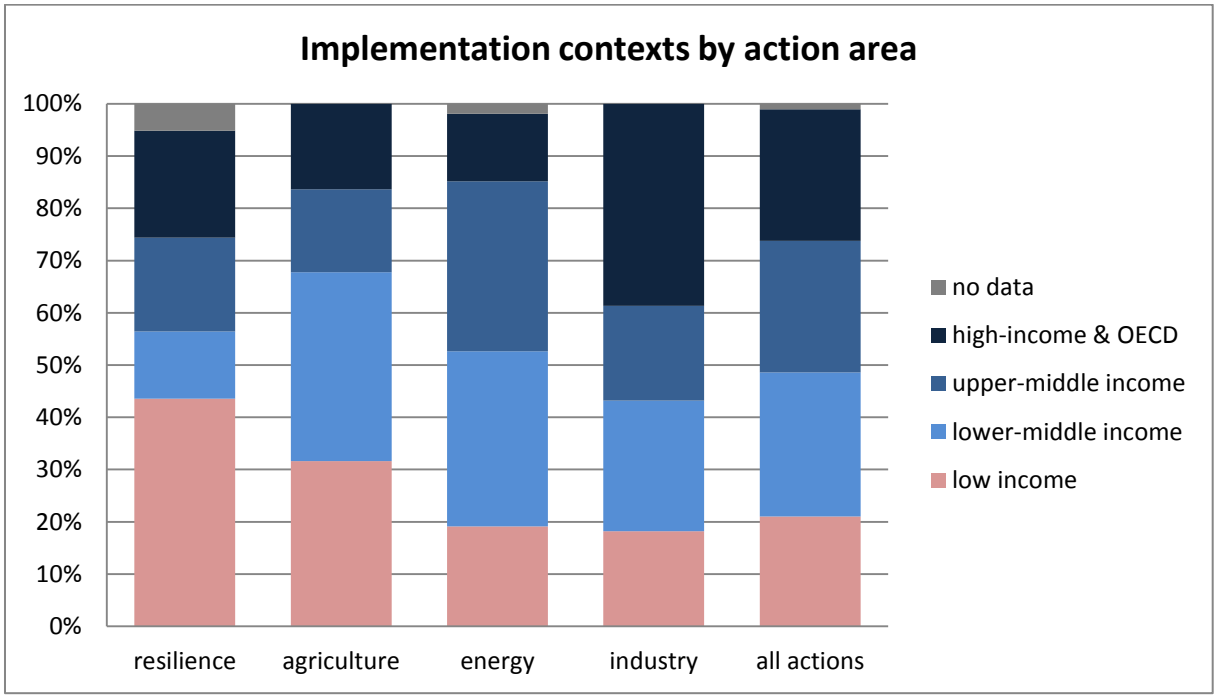


Figure 13 Implementation contexts by action area

These patterns of implementation correspond with the varying functional needs of different climate actions. Actions focused more on adaptation needs may seek to target the most vulnerable countries and communities, in particular in the agriculture and resilience action areas, while mitigation-oriented initiatives (e.g. in the energy and industry sectors) may aim for implementation in high-income countries with a larger emission reduction potential. Overall, this analysis indicates less of a 'Northern bias' when it comes to the implementation by climate actions.

4.3 Output performance

As discussed in section 3, we examine the outputs of climate actions (i.e. tangible and attributable activities), not as a direct measure of their effectiveness but as a necessary condition for them to achieve desired impacts. We are therefore interested in the degree to which the outputs produced match the functions of climate actions (so-called function-output-fit, see Annex 1).

Our analysis shows that, only one year after their launch at the 2014 UN Climate Summit, most climate actions have produced outputs that fit some (36 percent) or all (29 percent) of their main functions (Figure 14).

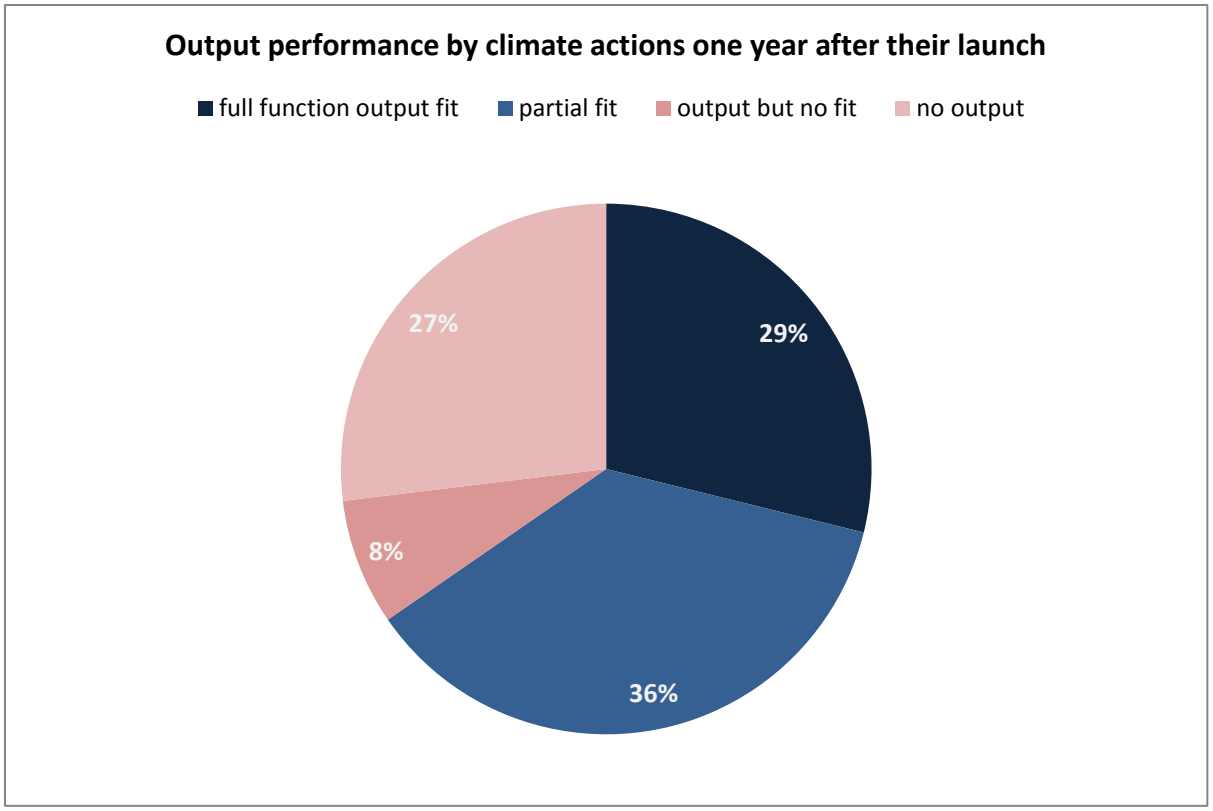


Figure 14 Output performance by climate actions one year after their launch

This finding compares well with historical precedents. Ten years after their presentation at the 2002 World Summit on Sustainable Development, 43 percent of Partnerships for Sustainable Development still performed poorly, with many producing no output at all (Pattberg et al. 2012) (Figure 14).

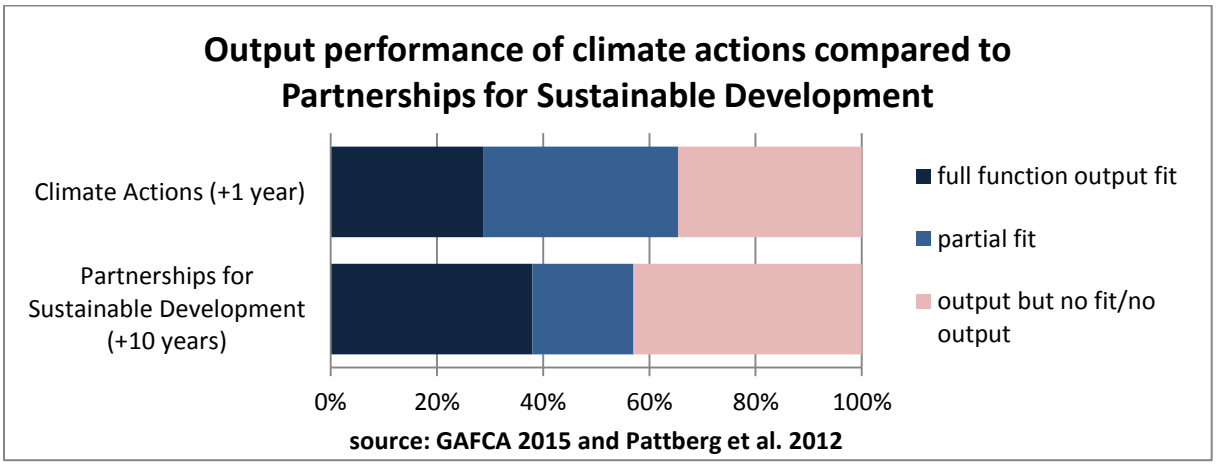


Figure 15 Output performance of climate actions compared to Partnerships for Sustainable Development

However, significant differences can be observed in the level of output performance across action areas (Figure 15). Compared to the total sample of climate actions, energy actions show relatively high output performance, while most resilience actions and agriculture actions currently perform below average. Of the resilience actions, 71 percent have yet to produce outputs, compared to 27 percent in the total sample.

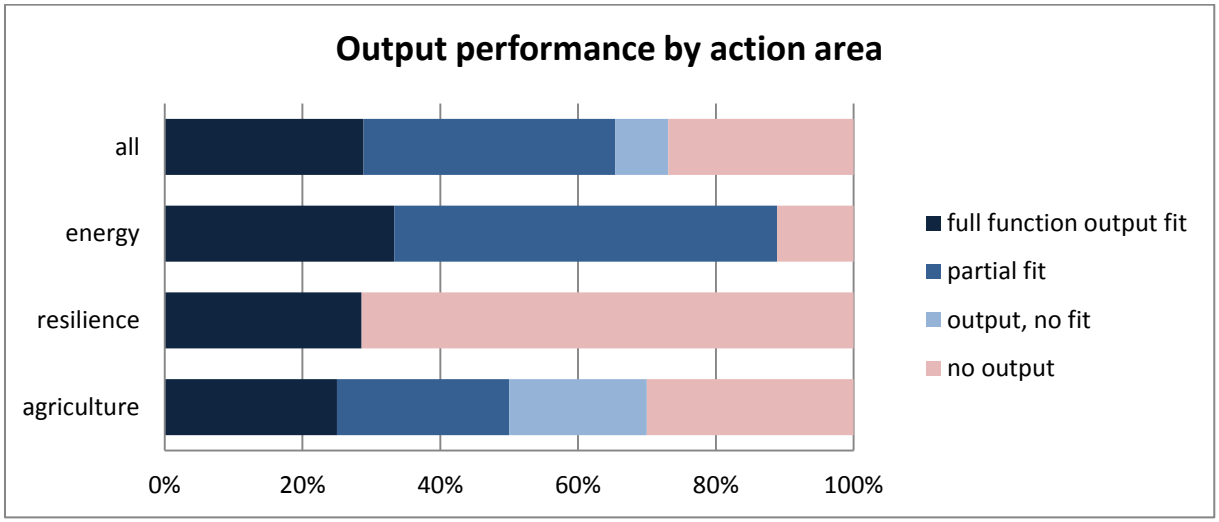


Figure 16 Output performance by action area

One reason for the lower level of activity and output performance of agricultural and resilience actions is the fact that the vast majority of them were only launched in 2014. Only two of the agriculture actions ('Costa Rica: Environmental Services Recognition Program'; 'Global Research Alliance for Agriculture on Agricultural Greenhouse Gases' [GRA]) were fully operational at the time of the UN Climate Summit in September 2014. By comparison, many of the energy actions, which show a higher level of output performance, were already operating before the 2014 UN Climate Summit and therefore had a head start in producing fitting outputs. Many energy actions are also backed by pre-existing and well-established international organizations. Energy actions such as the 'Global Fuel Economy Initiative', 'en.lighten' initiative and Global Partnership on Appliances and Equipment, commenced well before 2014, while the 'Global Energy Efficiency Accelerator Platform,' which began in 2014, is a flagship initiative by SE4ALL that has already produced a considerable body of work thanks in part to the backing and support of the larger organization.

Some caution is needed in interpreting these findings. The lack of output performance in a certain action area does not in itself indicate failure. Many newly established actions may simply be in an early stage of development and will take longer to deliver first results. It thus still remains to be seen whether the large number of agriculture and resilience actions can become effective tools for achieving their stated climate objectives. Alternatively, a lack of output performance in the short term may indicate a high level of ambition behind the creation of certain climate actions in areas where delivering outputs is generally difficult and takes a more sustained effort. For instance, resilience actions had hardly been recognized in international climate processes until the 2014 UN Climate Summit, and little experience exists with setting up actions in this area. Further analysis, of both the contextual factors and long-term performance of actions, is needed before we can arrive at more meaningful assessments of their output performance, and ultimately their effectiveness.

4.4 Findings and observations from selected action areas

In the following, we present individualized findings and observations for four action areas that feature the majority of actions: agriculture, energy, resilience and industry. Given that our research design and the database approach of our study is more suitable for aggregate analysis (as presented above), we only offer a qualitative assessment of these action areas, employing GAFCA data descriptively, and supplementing them with context-specific observations, based on input from experts in these action areas.

Agriculture

Agriculture is closely connected to both climate change adaptation and mitigation, and these linkages are complex. On the one hand, climate change has predominantly negative effects on food production as it affects the economic gains from agriculture, disrupts weather patterns, increases water scarcity, and influences the spread of pests and plant diseases. Moreover, some mitigation actions, such as those that stimulate large-scale use of bio-energy, can undermine food security. On the other hand, agricultural production and the conversion of forests into farmland are major sources of greenhouse gas emissions. Taken together, agriculture, forestry and land use changes are the largest source of greenhouse gas emissions after the energy sector, contributing just under 25% of all manmade greenhouse gas emissions (Smith, et al. 2014). As a large source of emissions, the agriculture sector could also make considerable mitigation contributions with an abatement potential ranging from 4.2 to 10.4 Gt CO_2e per year by 2030 (New Climate Economy 2014). International efforts are held back, however, by the diverse and decentralized nature of agricultural practices and policies, and sometimes by a lack of incentives to contribute to low-carbon and climate-resilient development. At the 2014 UN Climate Summit, agriculture has therefore rightly been identified as a priority action area.

It is encouraging to see that the largest number of actions was launched in the agriculture action area. The interest in agriculture actions was very diverse, not just limited to industry, but also research institutes and civil society groups. As a result, we observe a very wide range of agriculture actions. Some are fairly small and targeted programmes, for example, ‘CSA Youth Group: Mainstreaming Youth and Persons Living with Disabilities in Climate-Smart Agriculture’ with a budget of just $45,000 over a period of two years. Others, such as IFAD’s ‘Small Farms, Big Impacts’ programme, are large funding programmes, supported by multilateral development banks and aid agencies. Many of the actions are directly aimed at improving livelihoods and climate resilience of small farmers, which has the potential to make a significant contribution on the ground. For instance, the ‘Africa Climate-Smart Agriculture Alliance’ and ‘IFAD: Small Farms, Big Impacts: Helping Smallholder Farmers Adapt to Climate Change’ have been set up to increase climate resilience among specific numbers of farmers in developing countries. Many agriculture actions also perform other important functions, from knowledge production and exchange to training and research coordination (see Figure 5).

A large number of agriculture actions have yet to produce specific outputs (see Figure 16). This may not be a reason for immediate concern, especially when most actions were only launched a year ago. However, tracking agriculture actions’ output over time is important because it helps to better understand what they are delivering, and whether they actually contribute to mitigation and improved livelihoods.

Energy

Energy production and use are central to the functioning of the global economy, and managing them is essential to sustainable development and mitigation. However, managing energy production and use is complicated by the so-called 'energy trilemma,' referring to a conflict of interest between the goals of energy sustainability, security and equity (World Energy Council 2015). Despite increasing concerns related to climate change, states continue to prioritize energy security and access over environmental and sustainability issues (Dubash and Florini 2011). For instance, China – while installing renewable energy capacity at an astounding rate – also continues to build coal-fired power plants to serve its expanding energy needs (New Climate Economy 2014). While the chasm remains between what is currently being done and what needs to be done to decouple emissions from economic growth, considerable strides towards managing global energy emissions have been made. For instance, the establishment of IRENA has enhanced coordination and focus towards the global expansion of renewable energy generation. Renewable energy markets are also rapidly expanding due to declining costs in production. For example, the global solar PV capacity increased tenfold between 2008 and 2014 (IAE-PVPS 2015). Encouraged by these developments, the number of countries setting renewable energy targets also increased almost ten-fold, from 15 countries in 2005 to 144 in 2014. Energy actions, such as the ones proposed at the 2014 UN Climate Summit, have emerged as supplementary approaches to go beyond current efforts by international organizations and states. Climate actions potentially provide additional knowledge, policy experimentation and funding to realize concrete projects that tackle climate change from the bottom-up (Blok, et al. 2012). They could also inspire actors across multiple levels of governance to reduce their carbon footprints and to undertake adaptation measures.

As is the case with other climate actions presented at the 2014 UN Climate Summit, it is difficult to paint energy climate actions with one broad brushstroke because of their great diversity. Nonetheless, the set of energy actions stands out for its higher-than-average output performance (see Figure 16). This could partly be explained by the fact that a number of actions commenced before 2014, giving them a head start in producing outputs. The announcement of already existing actions at the 2014 UN Climate Summit might cast doubt about whether these actions are truly new and additional. Another factor impacting output performance relates to the level of institutionalization (see Figure 9). Strong backing by large organizations provided energy actions greater institutional support, better access to funding, and wide-ranging networks. For instance, the 'Africa Clean Energy Corridor', the 'Global Geothermal Alliance' and the 'SIDS Lighthouses Initiative' are nested within IRENA. While institutional nesting, as a type of institutionalization, was not accounted for in the measurement of the level of institutionalization in GAFCA, it may have positively impacted output performance. We also observed that, within a group of actions belonging to the 'Energy Efficiency Accelerator Platform' initiated by the UN sponsored 'Sustainable Energy for All initiative' (SE4ALL), existing actions with standing organizations such as en.lighten and the Global Fuel Economy Initiative performed better in terms of outputs. However, newer actions, such as the 'District Energy Accelerator' and the 'Building Efficiency Accelerator,' have been less successful. As with renewable energy actions, energy efficiency actions are likely to benefit from improved coordination and an enabling institutional environment. The 'Energy Efficiency Accelerator Platform' has recognized this shortcoming and has recently set up a full-time secretariat to remedy the lack of

coordination between various 'sub-accelerators' and also to support actions that have not yet produced outputs.[10]

At first glance, the primary functional scope of energy actions is mitigation, as most actions concern emission reductions. Surprisingly few energy actions, however, set quantified targets (see Figure 6). A closer look at the functions that energy actions address reveals a wider functional scope of activities. For instance, the most addressed functions — knowledge dissemination and policy planning — cannot be easily monitored by quantitative measures (see Figure 5). The geographic scope of energy actions also stands out for its breadth. Most energy actions have a global focus (see Figure 10), and it is particularly encouraging to see that low-carbon energy transition through energy actions is not limited to the global North (see Figure 13).

The emerging overall picture of energy actions is encouraging. Energy actions perform well in terms of output effectiveness (see Figure 16), and wide functional and geographic scopes can help them to deliver to communities in both developing and developed countries. We also observe a positive institutional context for energy actions. Nevertheless, questions remain whether announced actions are truly new and additional, since a number of them predate the 2014 UN Climate Summit. Moreover, the emphasis on mitigation is often not matched by quantitative target setting or the possibility to monitor emission reductions against targets.

Resilience

By taking up resilience, the 2014 UN Climate Summit organisers have ventured into a relatively new action area. Climate actions have mostly been associated with mitigation. Resilience and adaptation actions have been underrepresented in prominent data platforms, such as the Climate Initiatives Platform (2015) and the Non-state Actor Zone for Climate Actions (NAZCA, UNFCCC 2015c), while the international climate negotiations towards the Paris climate conference in the ADP primarily refer to non-state and sub-national climate actions in terms of their mitigation potential. Moreover, the focus on resilience implies a more systemic approach than individualized adaptation actions, as it includes efforts that improve the capabilities of social and ecological systems to absorb impacts of climate change, as well as to renew and possibly improve these systems. The inclusion of resilience as a separate action area should therefore be regarded as an achievement in itself—a recognition that climate governance needs to address interconnected concerns particularly relevant to vulnerable communities in developing countries. Because of the encompassing nature of resilience efforts, however, it is difficult to define a clear focus as resilience actions cut across multiple substantive issue areas. For this reason, the Lima-Paris Action Agenda has taken a thematic approach focusing on water resources, food security, health and disaster risk reduction and coastal zone management as priority themes (Galvanizing the Groundswell of Climate Actions 2015c). Resilience actions presented at the 2014 UN Climate Summit, however, cover only limited ground. For instance, none of the actions specifically addresses water resources or coastal zone management. There is a significant thematic discrepancy between resilience actions presented at the 2014 UN Climate Summit and priorities defined by the LPAA. Existing actions strongly emphasize disaster risks (e.g. 'Promoting Disaster and Climate Risk Resilience through Regional Programmatic and Risk Financing Mechanisms,'

[10] Interview with John Christiansen, Director of SE4ALL's Copenhagen Centre on Energy Efficiency – a UNEP, DTU Partnership, on September 18, 2015.

'Caribbean Catastrophe Risk Insurance Facility,' and 'African Risk Capacity'), while references to other priority themes are sporadic if not entirely absent.

Resilience actions in our sample are exclusively led by international organizations, for instance UNEP and the World Meteorological Organization. This may reflect pragmatic considerations by the summit organizers to mobilize other UN and international organizations to launch new actions in time for the summit. International organizations have clearly taken the lead in resilience actions. They have also succeeded in focusing on the most vulnerable countries, as 44 percent of reported countries of implementation concern low-income economies (see Figure 13).

Average output performance in the resilience action area is still low (see Figure 16), but this should not be a reason for concern. The fact that many actions have not yet produced fitting outputs reflects their early phase of development, and possibly high ambitions that cannot be quickly delivered on. It remains to be seen whether the current sample of actions will produce tangible and relevant outputs over time. The fact that the majority of resilience actions set quite specific targets (especially in terms of number of people's lives improved and amounts of funding mobilized, see Figure 7) may contribute to output performance over time, or at least enable assessment against targets. However, a relatively low level of institutionalization (see Figure 9) raises questions about the capacity of resilience actions to deliver and meet their targets.

A closer look at the functions addressed by resilience actions reveals a possible alternative conceptualization of resilience as an action area, not defined by thematic priorities, but by crosscutting functions that support systemic resilience (see Figure 5). Most resilience actions aim to enhance the use of data, for instance towards the management of risks related to climate disasters ('Integrating Risks into the Financial System 1-in-100 Initiative'), or work towards the integration of data relevant for resilience ('Climate Information for Climate Action'). The current set of resilience actions does not emphasize knowledge production and dissemination or the building of networks ('participatory management'). Therefore, continued mobilization efforts should also focus on knowledge and capacity building functions that are vital to greater resilience.

In spite of the novelty of resilience as an action area, procedural links between the 2014 UN Climate Summit, the LPAA, and the Paris climate conference have been made on this theme (e.g. COP21 will feature a 'resilience day'). Institutional links can also be found in the international climate negotiation process. For instance, negotiations under Work stream 2 of the ADP refer to aspects of resilient development including sustainability co-benefits. To further resilience actions, the LPAA and possible follow-up initiatives should solidify, and build on, existing linkages. For instance, the Adaptation Committee under the UNFCCC already has the mandate to share knowledge and to strengthen engagement between stakeholders. These functions match well with a long-term action approach to resilience. Moreover, many adaptation actions are featured as case studies and Private Sector Initiatives (cf. Pauw et al.2015) under the Nairobi work programme on impacts, vulnerability and adaption to climate change, including those that address relatively underserved functions of knowledge dissemination and production (UFCCC 2015d). These adaptation actions are not yet featured in the NAZCA database, which remains mitigation-oriented in spite of its aim to register wide ranging climate actions. By building on existing efforts, an action agenda on resilience has great potential to deliver on both the sustainable development and climate agendas.

Industry

The organizers of the 2014 UN Climate Summit included 'industry' as an action area even though it only includes five actions, far too small a number to capture the broad diversity of actions that is possible in the industry sector.

The industry sector includes energy-intensive industries (e.g. steel, cement and chemicals production), food processing, waste management, wastewater treatment, mining, as well as fossil fuel industries. It is responsible for 30 percent of global greenhouse gas emissions, of which about 85 percent come from CO_2 emissions (Fischedick et al. 2014). Industry actions launched at the 2014 UN Climate Summit cover a range of actions: oil and gas production, freight transportation, industries using hydrofluorocarbons (HFCs), and municipal solid waste, but all are concerned – at least in part – with addressing short-lived climate pollutants (SLCPs). SLCPs, which include black carbon, methane, tropospheric ozone as well as HFCs, have short life spans – compared to carbon dioxide – but also have high global warming potential. SLCP mitigation could halve the expected amount of global warming by 2050 (Ramanathan and Xu 2010), and reduce overall sea-level rise with 22-42 per cent by 2100 (Hu, Xu et al. 2013). Although the the climate treaties (the UNFCCC and Kyoto Protocol) cover SLCPs like HFCs and methane, their focus has largely been on CO_2. As black carbon is not a greenhouse gas, it falls outside the remit of the climate treaties. This means that actions to tackle SLCPs could form an important complement to other mitigation actions.

The actions launched at the summit show how SLCPs are increasingly targeted through collaborative actions, in particular the Climate and Clean Air Coalition. Except for the 'Oil and Gas Climate Initiative' (OGCI), all industry actions launched are carried out under the auspices of the CCAC. While the CCAC itself is led by both state and non-state partners, the actions initiated under it foresee an important role for non-state actors. For instance, the 'Oil & Gas Methane Partnership' will be largely driven by the companies. Industry actions presented at the summit draw participation from a balanced mix of developed and developing countries, as well as international organizations, business and industry, NGOs, and sub-national authorities. In particular, they broadened engagement by the oil and gas industry in mitigation, as evidenced by the Oil and Gas Methane Partnership as well as the OGCI.

Four out of five industry actions prominently address knowledge dissemination. In addition, several actions engage in standard-setting by working towards common methodologies and reporting (the OGCI), and in policy planning through promoting climate-friendly alternatives to HFCs. Lobbying is a key function of the 'Phasing Down Climate Potent HFCs' initiative, which explicitly encourages the adoption by states of an amendment to the Montreal Protocol to phase down the production and consumption of HFCs. Actions under the CCAC benefit from a small but dedicated secretariat in achieving these objectives. The OGCI only started recently, which may explain the lack of a secretariat or dedicated staff, and a lack of monitoring arrangements mentioned in its action statement.

One year after the summit industry actions have performed relatively well in terms of outputs (see Figure 16). Most outputs recorded were in relation to the 'Phasing Down Climate Potent HFCs' and 'Municipal Solid Waste' initiatives, which already existed – albeit in a slightly different form – prior to the summit. Other industry actions have produced fewer outputs, but activities seem to be ongoing. Websites are respectively launched and forthcoming for the OGCI and the Global Green Freight initiative, the OGCI organised its first multi-stakeholder workshop in 2015, and the Oil & Gas Methane Partnership and the Global Green Freight initiatives released their action plans in 2015.

Linking outputs to the achievement of functions, however, is not straightforward. For instance, while a range of proposals has been submitted to amend the Montreal Protocol to include a phase-down of HFCs, some of them stemming from states that adopted the HFC statement at the summit (NRDC 2015), the causal relationship between the 'Phasing Down Climate Potent HFCs' initiative and states' actions is unclear.

Industry actions presented at the 2014 UN Climate Summit have been off to a promising start. In particular actions related to the CCAC are built on a relatively strong institutional foundation. However, a few cautionary remarks are in place. First, only two of the actions have expressed clear goals against which performance can be evaluated over time. Second, while the summit presented an opportunity to showcase actions it remains unclear whether they are new and additional (notably in the area of HFCs and municipal solid waste). Third, the industry action area did not include actions involving energy-intensive industries, which arguably is a missed chance for deeper global sectoral cooperation.

5. Conclusions

Our investigation of the climate actions launched at the 2014 UN Climate Summit in New York addressed two important knowledge gaps in the understanding of non-state and sub-national actions in global climate governance. First, this study considered multiple functional dimensions of climate actions that are relevant to mitigation, adaptation and resilient development, whereas previous empirical studies of climate actions mostly considered their mitigation potential. Second, this study assessed the performance of climate actions *ex post*, whereas previous studies mainly assessed *ex ante* what actions promise to do. Therefore, this study helps to shed light on the role of climate actions beyond their mitigation potential; and it also demonstrates that – at the aggregate level – it is possible to track the actions of a large number of actions in a comparative manner, and assess their progress.

Arguably the most pressing question is whether climate actions can promote low-carbon and climate-resilient development. The picture that emerges from our analysis is encouraging, although it is too early for a definitive answer as most climate actions are fairly new and will need more time to become effective. International organizations have been able to mobilize many types of stakeholders, going well beyond the 'usual suspects' in transnational governance. Although some North-South imbalances persist, many actions target low-income and lower-middle-income economies, thus increasing the likelihood that climate actions will benefit the world's most vulnerable people. Climate actions are also starting to deliver. Output performance after one year is higher than one might expect from previous experiences with non-state and sub-national actions. However, the chain from tangible outputs to positive changes in environmental and social indicators is long. Our output performance analysis can only be a first step towards a deeper investigation into the effectiveness of climate actions and the factors that contribute to their success or failure.

While the overall findings are encouraging, notable differences can be found between various action areas. A large number of resilience and agriculture actions have yet to produce specific outputs. However, mobilizing actions in these otherwise relatively underrepresented action areas can be considered an achievement in itself, as a case of successful orchestration. A mirror picture emerges from the energy and industry action areas. Both action areas feature relatively high output performance and seem to be well on track to deliver. However, the fact that many actions predate the 2014 UN Climate Summit raises questions about their level of ambition and their additional contribution in the context of the summit.

It is encouraging to see that the UNFCCC and other international processes increasingly create positive linkages between climate actions and international processes. The 2014 UN Climate Summit, although fairly unique among climate conferences, is not an isolated effort. Through facilitating information platforms such as NAZCA, which mobilize and showcase climate actions, governments, the UNFCCC and international organizations can generate increased visibility of actions, greater commitments and possibly higher national ambitions. However, continued efforts by the UNFCCC, the wider UN system, other international organizations and governments are not guaranteed if climate change slides down on the global political agenda. Limited resources and the absence of clear mandates may prevent orchestrators from mobilizing and facilitating climate actions at the same scale and pace, compared to what we have seen in the run-up to Paris. Yet, the need for climate actions does not diminish after Paris. If anything, climate action will be more necessary than ever to help realize national targets, to develop practical solutions, and to demonstrate the feasibility of

more ambitious commitments both from governments and the private sector. In short, continued orchestration is needed to maximize the potential of climate actions.

The findings of this study suggest certain strategic priorities and provide an argument for comprehensive and long-term orchestration efforts by the UN and other international organizations.

Regarding strategic priorities, this study revealed different patterns of development, ambition, and output performance across action areas and types of actions. Orchestrators would benefit from taking these patterns into account when designing strategic interventions and trying to improve the effectiveness of a larger range of climate actions. For instance, the organizers of the 2014 UN Climate Summit demonstrated considerable ambition by including resilience as a separate climate action area. However, average output performance by resilience actions is still low, and orchestrators should prioritize support for this resilience action area over more established action areas.

Orchestrators should also take care to engage climate actions in a comprehensive manner, and create the best possible conditions for them to deliver on their commitments. To this effect, several suggestions have been made for improved frameworks for engagement (Chan et al. 2015; Chan and Pauw, 2014; Hsu et al., 2015; Hale and Chambers, 2014; Widerberg and Pattberg, 2015; Pattberg et al., 2012; Galvanizing the Groundswell of Climate Actions 2015d). Elements of such a framework could include:

- The distribution and linking of responsibilities and orchestration efforts in a collaborative network consisting of the UNFCCC secretariat, intergovernmental organizations, transnational initiatives and research organizations; to the effect that orchestration becomes a shared undertaking while building on the capabilities of multiple partners (Chan et al. 2015; Chan and Pauw 2014; cf. Widerberg and Pattberg 2015; Hale and Roger 2014).
- A navigable and regularly updated online platform that features existing climate actions and their commitments and synthesizes data on multiple (more specialized) registries.[11] Such a platform would provide a systematic overview, which in turn enables a better understanding of the larger landscape of climate actions over time (Chan et al. 2015; Hale and Chambers 2014; Chan and Pauw 2014).
- Regular reviews of the performance of climate actions, to provide accurate data for investors, civil society, researchers, policy makers, and orchestrators. Regular reviews improve transparency and also allow aggregate analysis, systematic tracking of climate actions, and the drawing of lessons learnt (Chan and Pauw 2014).
- A capacity building facility that supports the sharing of lessons learned, brings together prospective partners, and supports governments and COP presidencies in their efforts to mobilize new and enhance climate actions (cf. Galvanizing the Groundswell of Climate Actions 2015d).

This study demonstrated a method that could be applied to regular reviews and the benchmarking for output performance, which could become a key element in a comprehensive framework for engagement; enabling orchestration to go beyond the mere recording of a high number of actions.

[11] This function could build on the NAZCA portal which already draws from multiple registries, but could still be improved to cover more actions areas.

The Paris climate conference presents a window of opportunity to take decisive steps towards a more comprehensive and effective framework for the engagement of non-state and sub-national climate actions. Through continued orchestration efforts, orchestrators effectively respond to the changing nature of climate governance, one that increasingly features bottom-up dynamics and leverages the capacities of both state and non-state actors. More importantly, engagement of a wide range of stakeholders will be necessary if we are to halt global warming, and realize a low-carbon and climate resilient future.

References

Abbott, K. (2012). "The transnational regime complex for climate change." Environment & Planning C: Government & Policy **30**(4): 571-590.

Abbott, K. W. and D. Snidal (2009). "Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit." Vanderbilt Journal of Transnational Law **42**(2).

Andonova, L. B. (2014). "Boomerangs to partnerships? Explaining state participation in transnational partnerships for sustainability." Comparative Political Studies **47**(3): 481-515.

Arup and C40 Cities Climate Leadership (2014). Working Together: Global Aggregation of City Climate Commitments. London, Arup.

Blok, K., N. Höhne, K. van der Leun and N. Harrison (2012). "Bridging the greenhouse-gas emissions gap." Nature Climate Change **2**(7): 471-474.

Bulkeley, H. (2001). "Governing climate change: the politics of risk society?" Transactions of the Institute of British Geographers **26**(4): 430-447.

Bulkeley, H., L. Andonova, K. Bäckstrand, M. Betsill, D. Compagnon, R. Duffy, A. Kolk, M. Hoffmann, D. Levy and P. Newell (2012). "Governing climate change transnationally: assessing the evidence from a database of sixty initiatives." Environment and Planning-Part C **30**(4): 591.

Bulkeley, H., L. Andonova, M. M. Betsill, D. Compagnon, T. Hale, M. J. Hoffmann, P. Newell, M. Paterson, C. Roger and S. D. VanDeveer (2014). Transnational climate change governance, Cambridge University Press.

CAIT. (2015). "CAIT Climate Data Explorer." Retrieved 18 October, 2015, from http://cait.wri.org/.
Chan, S. (2014). Partnerships for sustainable development. Emergence, Adaptation and Impacts in Global and Domestic Governance Contexts. PhD, VU University Amsterdam.

Chan, S. and R. Falkner (2015). Global Aggregator For Climate Actions. Bonn, Germany and London, UK, German Development Institute and London School of Economics and Political Science.

Chan, S. and P. Pauw (2014). A global framework for climate action: orchestrating non-state and subnational initiatives for more effective global climate governance. DIE Discussion Paper. Bonn, German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE)**:** 44.

Chan, S., H. Van Asselt, T. Hale, K. W. Abbott, M. Beisheim, M. Hoffmann, B. Guy, N. Höhne, P. Pattberg, P. Pauw, C. Ramstein and O. Widerberg (2015). "Reinvigorating International Climate Policy: A Comprehensive Framework for Effective Climate Action." Global Policy **6**(4).

CISL and Ecofys (2015). Better Partnerships: Understanding and increasing the impact of private sector cooperative initiatives. Cambridge, Cambridge Institute for Sustainability Leadership and Ecofys**:** 20.

Climate Action Tracker (2015). "Climate Action Tracker." Retrieved 18 October, 2015, from http://climateactiontracker.org.

Climate Initiatives Platform (2015). Climate Initiatives Platform, Cambridge Institute for Sustainability Leadership, Ecofys, World Resources Institute, Nordic Council of Ministers.

Dubash, N. K. and A. Florini (2011). "Mapping global energy governance." Global Policy **2**(s1): 6-18.

Dzebo, A. and J. Stripple (2015) “Transnational adaptation governance: An emerging fourth era of adaptation.” Global Environmental Change **35**: 423-435.

Falkner, R. (2015). "International negotiations: Towards minilateralism." Nature Climate Change **5**(9): 805-806.

Fischedick, M., J. Roy, A. Abdel-Aziz, A. Acquaye, J. M. Allwood, J.-P. Ceron, Y. Geng, H. Kheshgi, A. Lanza, D. Perczyk, L. Price, E. Santalla, C. Sheinbaum and K. Tanaka (2014). Industry. Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. O. Edenhofer, R. Pichs-Madruga, Y. Sokona et al. Cambridge, UK and New York, USA Cambridge University Press.

Galvanizing the Groundswell of Climate Actions (2015a). Memorandum - UNFCCC Parties and Observers’ Views on Sub/nonstate Actions and Cooperative Initiatives, Available from: http://static1.squarespace.com/static/552be32ce4b0b269a4e2ef58/t/55b93e8ae4b0d0f8999a35aa/1438203530150/UNFCCC+Parties+view+on+groundswell.+27.7.15.pdf [Accessed 06 November 2015].

Galvanizing the Groundswell of Climate Actions (2015b). Memorandum - Accelerating the Action Agenda through Robust and Credible Climate Commitment from Non-state ActorsAvailable from: http://static1.squarespace.com/static/552be32ce4b0b269a4e2ef58/t/55a1426ae4b002de2595de4d/1436631658366/Accelerating+the+Action+Agenda+through+Robust+and+Credible+Commitments+-+General.pdf [Accessed 6 November 2015]

Galvanizing the Groundswell of Climate Actions (2015c). Catalyzing Climate Action for Resilient Development. Catalyzing Climate Action for Resilient Development, Bonn, Galvanizing the Groundswell of Climate Actions.

Galvanizing the Groundswell of Climate Actions (2015d). Memorandum - The Action Agenda after Paris: Galvanizing Climate Action in 2016-2020 and beyond. Available from: http://www.climategroundswell.org/blog-test/2015/7/30/the-action-agenda-after-paris-galvanizing-climate-action-in-2016-2020-and-beyond [Accessed 6 November 2015]

Hale, T. and Chambers, L. (2014) BSG Policy Memo - Design considerations for a registry of sub- and nonstate actions in the UN Framework Convention on Climate Change. BSG Policy Memo, Blavatnik School of Government, Oxford, 24 February. Available from: http://www.bsg.ox.ac.uk/sites/blavatnik/_les/documents/2014-UNFCCCClimateRegistry-PolicyMemo.pdf [Accessed 06 November 2015]

Hale, T. and C. Roger (2014). "Orchestration and transnational climate governance." The Review of International Organizations **9**(1): 59-82.

Hoffmann, M. J. (2011). Climate governance at the crossroads: experimenting with a global response after Kyoto, Oxford University Press.

Hsu, A., A. S. Moffat, A. J. Weinfurter and J. D. Schwartz (2015). "Towards a new climate diplomacy." Nature Climate Change **5**(6): 501-503.

Hu, A., Y. Xu, C. Tebaldi, W. M. Washington and V. Ramanathan (2013). "Mitigation of short-lived climate pollutants slows sea-level rise." Nature Climate Change **3**(8): 730-734.

IAE-PVPS (2015). 2014 Snapshot of Global PV Markets - Photovoltaic Power Systems Programme. St. Ursen, Switzerland, IAE-PVPS**:** 16.

Mosteller, D., and A. Hsu (2015). “Getting to Two Degrees: Measuring What Cities, Companies, and Others Have Promised”. Retrieved 25 October, 2015, from http://epi.yale.edu/the-metric/getting-two-degrees-measuring-what-cities-companies-and-others-have-promised.

New Climate Economy (2014). Emission Reduction Potential Technical Note. London, UK, The Global Commission on the Economy and Climate,**:** 26.

New Climate Economy (2015). Seizing the Global Opportunity - Partnerships for better growth and a better climate: The 2015 New Climate Economy Report. New Climate Economy Report. Washington, DC; London, UK, The Global Commission on the Economy and Climate**:** 75.

NRDC (2015). Comparison of 2015 Montreal Protocol Amendment Proposals. Side Event - NRDC at the 36th Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol, Paris, Natural Resources Defense Council (NRDC)**:** 2.

Pattberg, P., F. Biermann, S. Chan and A. Mert, Eds. (2012). Public Private Partnerships for Sustainable Development. Emergence, Influence and Legitimacy. Cheltenham, Edward Elgar.

Pauw, P., R.J.T. Klein, P. Vellinga, F. Biermann (2015). “Private finance for adaptation: do private realities meet public ambitions?” Climatic Change, published online 6 November 2015, doi:10.1007/s10584-015-1539-3.

Ramanathan, V. and Y. Xu (2010). "The Copenhagen Accord for limiting global warming: Criteria, constraints, and available avenues." Proceedings of the National Academy of Sciences **107**(18): 8055-8062.

Smith, P., M. Bustamante, H. Ahammad, H. Clark, H. Dong, E. A. Elsiddig, H. Haberl, R. Harper, J. House and M. Jafari (2014). "Agriculture, forestry and other land use (AFOLU)." Climate change: 829-833.

Szulecki, K., P. Pattberg and F. Biermann (2011). "Explaining Variation in the Effectiveness of Transnational Energy Partnerships." Governance **24**(4): 713-736.

UN (2014a). "Climate Summit 2014 - Catalyzing Action." Retrieved 18 October, 2015, from http://www.un.org/climatechange/summit/.

UN (2014b). UN Climate Summit Set to Raise Ambition, Mobilize Finance, and Generate Action to Tackle Climate Change. New York, UN.

UNEP (2015). Climate commitments of subnational actors and business: A quantitative assessment of their emission reduction impact. Nairobi, United Nations Environment Programme (UNEP).

UNFCCC (2015a). "About the LPAA." Retrieved 18 October, 2015, from http://climateaction.unfccc.int/aboutlpaa.aspx.

UNFCCC (2015b). “Synthesis report on the aggregate effect of the intendednationally determined contributions.” 30 October, 2015. Paris, UNFCCC.

UNFCCC (2015c). NAZCA - the Non-State Actor Zone for Climate Action, UNFCCC. Retrieved 18 October, 2015, from http://climateaction.unfccc.int/.

UNFCCC (2015d). “Private Sector Initiatives – database of actions on adaptation.” Retrieved 8 November, 2015, from http://unfccc.int/adaptation/workstreams/nairobi_work_programme /items/6547.php.

Van Asselt, H. (2014). The fragmentation of global climate governance : consequences and management of regime interactions, Cheltenham, UK: Edward Elgar

Widerberg, O. and P. Pattberg (2015). "International Cooperative Initiatives in Global Climate Governance: Raising the Ambition Level or Delegitimizing the UNFCCC?" Global Policy **6**(1): 45-56.
World Energy Council (2015). 2015 World Energy Trilemma Report. London, World Energy Council**:** 53.

Annexes

Annex 1. GAFCA database and research methodology

Structure of the database

GAFCA contains data on 52 climate actions. To capture specific actions and to increase the reliability of the database, sub-projects and programmatically distinguishable activities were included as separate actions, even when they were collectively announced as single commitment at the 2014 UN Climate Summit. For instance, the Global Energy Efficiency Accelerator Platform was included in the database as five separate actions: 'District Energy Accelerator'; 'Building Efficiency Accelerator', 'Efficient Appliances Accelerator'; 'Lighting Efficiency Accelerator/en.lighten', and 'Vehicle Fuel Efficiency Accelerator/Global Fuel Economy Initiative'. GAFCA contains basic descriptive data on climate actions such as 'name of climate action,' website URL, and contact information. Moreover, GAFCA gathers data in six analytical categories: 'actors,' 'organizational characteristics,' 'geography of implementation,' 'functions,' 'outputs,' and 'Function-Output-Fit.' Data in the latter three categories was particularly useful in assessing the progress of climate actions one year after their announcement at the 2014 UN Climate Summit.

Actors

Data on actors provides an aggregate view of patterns of participation in climate actions. For instance 'who participates in climate actions;' 'which type of actors lead climate actions;' 'how many and which types of businesses are involved in climate action.' This data could be used to determine the extent to which climate actions involve underrepresented voices in the formal climate regime. Moreover, analysis of patterns of participation could also indicate to what degree climate actions are 'northern driven', or orchestrated by international organizations. These questions are particularly relevant in the context of UNFCCC climate negotiations, in which developed countries have encouraged further engagement with non-state and sub-national actors, while some developing countries and NGOs are concerned about, for instance, the 'privatization' of aspects of climate governance.

Organizational characteristics

GAFCA gathers data on organizational characteristics, such as monitoring arrangements, staff, duration of actions, and target setting. Deeper institutionalization of non-state and sub-national initiatives has been associated with greater effectiveness in current studies of public-private partnerships (cf. Pattberg et al. 2012). Some organizational characteristics could influence the likelihood that a climate action will be effective. Moreover, target-setting could indicate the potential of climate actions, and the areas to which climate actions seek to contribute (e.g. mitigation or adaptation). Early indications of potential and target-setting can be helpful for governments and international organizations when they decide to highlight particularly ambitious climate actions. Early indication of target-setting and institutionalization could also prevent an overly close association between formal (intergovernmental) climate process and actions that will likely turn out to be 'business as usual.'

Geography of implementation

GAFCA gathers data on the countries of implementation of climate actions. This type of data allows for a better understanding of the geographic focus of climate initiatives—for instance: 'which

countries benefit most from investments through climate initiatives?' In the context of global climate governance, this question is extremely relevant because the greatest financial and policy deficits related to climate change are found in developing countries, in particular the least developed ones. By revealing geographic imbalances in implementation, aggregate analysis can help international organizations and governments undo some of these imbalances.

Functions

In contrast to most current climate action tracking initiatives and research projects that primarily focus on mitigation, GAFCA applies a method that works equally well for actions with other goals. GAFCA classifies twelve different functions that climate actions potentially fulfil in the context of global climate governance (see Table 1). This allows for a better understanding of the role that climate actions play in various climate policy areas, including mitigation, resilient development and adaptation. A clear conception of the functions of climate actions is essential for the progress assessment in this report. For instance, a climate action that aims at raising awareness should be assessed by different indicators than an action that aims at standard setting.

Function category	Definition
Knowledge production	Production of knowledge, information, innovation (scientific or applied)
Knowledge dissemination	Dissemination of knowledge, including dissemination of 'good practices'
Technical implementation and 'on the ground' action	Implementation of previously existing technologies, (mitigation and/or adaptation) plans and policies, including pilot and demonstration projects
Institutional capacity building (governments and formal institutions)	Building new social institutions (with or without legal status, for instance new partnerships) or expanding existing support organizations
Norm and standard setting	Setting up new norms or standards or spreading the use of such new norms, including the certification of products. Excluding internal (organizational) norm-setting and policies.
Campaigning	Campaigns, including raising public awareness on a given topic, and education of the public at large
Lobbying	Lobbying, restricted to pressure applied on governmental actors from non-governmental ones
Participatory management	Participatory management and involvement of local communities in policy programmes
Training and non-state and sub-national capacity building	Training of employees, other social actors, or students (including school training if new curriculum is introduced with a specific content related to climate change)
Funding	Providing funds for climate related project, or raising funds.
Product development	Developing new or renewed climate-friendly commercial products and services
Policy planning	Planning at national or regional levels (including the production of large policy plans, development or planning of policy instruments)

Table 1 Function categories

Outputs

Outputs, or the attributable and tangible products of climate actions, are a minimal condition for effectiveness. An action that does not produce any output could safely be assumed to be ineffective by all measures. By contrast, the production of outputs at least indicates the existence and productivity of a climate action. Without matching outputs, effectiveness (in particular 'outcome' [behavioural change] and 'impact' [degree of problem solving]) is very unlikely. While changes in the environment or behavioural change are difficult to attribute, outputs are much easier to attribute to a certain climate action.

GAFCA classifies 26 types of output (see table 2). Gathered data on these types of output will render a more accurate view of the production of climate initiatives, and the actual role they play in climate governance. The presence – or absence – of outputs also serves as a strong indicator of subsequent (higher order) effectiveness of climate actions.

Data type	Explanation/Key
OUT_PUB_RES	Any publication by the initiative (not by individual partners) documenting academic research, data-gathering for implementation, policy and action research.
OUT_PUB_ADV	Any publication by the initiative (not by individual partners) arguing in favour of the partnership cause with a wider audience than policy makers (public); including campaign material, newsletters, petitions, and promotion materials (such as posters, leaflets, and brochures).
OUT_PUB_STA	Any publication by the initiative (not by individual partners) setting out policy and/or procedural standards (excluding internal operating procedures) for application to climate or sustainable development issue.
OUT_PUB_EDU	Any publication by the initiative (not by individual partners) aimed at training, including best practice manuals and instruction materials.
OUT_PUB_POL	Any publication by the initiative (not by individual partners) arguing for specific policies (whether regional, national or transnational) with public policy makers to regulate and or manage climate (and sustainable development) issues.
OUT_PUB_EMR	Any publication by the initiative (not by individual partners) indicating emissions reductions as a result of an initiative's activities.
OUT_PUB_REP	Any publication by the initiative (not by individual partners) pertaining transparency and accountability towards its partners, stakeholders and wider audiences (such as annual reports, and [self-] evaluations).
OUT_DTB	Databases and systematically organized and retrievable information, including significant changes to existing databases.
OUT_EVO_S2S	Science-to-science events (co-)organized by the initiative.
OUT_EVO_SCP	Science policy interface events (co-) organized by the initiative.
OUT_EVO_POL	Policy-policy exchange events (co-) organized by the initiative.
OUT_EVO_POP	Popular events (co-) organized by the initiative, since New York Summit.
OUT_EPA_S2S	Participation by the initiative in science-to-science events.
OUT_EPA_SCP	Participation by the initiative in science policy interface events.
OUT_EPA_POL	Participation by the initiative in policy to policy exchange events.
OUT_EPA_POP	Participation by the initiative in popular events.
OUT_ITT	Construction or improvement of new and existing physical facilities as well as the application. Indicate with '1' when an action produced this output.
OUT_SOM	Active and operational websites (including sub-domains), and social media accounts.
OUT_INS_ORG	Organizations, institutions and new partnerships and initiatives, (partly) brokered or set up by the initiative (excluding the initiative itself).
OUT_INS_PIN	New or enhanced public policy tools and instruments.
OUT_INS_PAR	New partners involved in the initiative and/or in public policy processes.
OUT_FUN_RAI	Funding raised for new and existing projects relating to climate action.
OUT_FUN_PRO	Funding distributed for new and existing projects relating to climate action.
OUT_COM_PRS	Any marketable or marketed new or enhanced products and services with benefits from a climate and/or sustainable development perspective, excluding consultancy services.
OUT_COM_CON	Provision of professional advice relating to climate (and sustainable development) .
OUT_OTH	Other type of output not in the list.

Table 2 Output categories

Function-Output Fit

To determine the output effectiveness and progress of a wide variety of climate actions, this research employs the Function-Output-Fit (FOF) as a measure to strategically indicate output effectiveness.[12] FOF has previously been applied to 'Partnerships for Sustainable Development' (Pattberg et al. 2012). However, for this research, function and output data categories have been adapted to better reflect the characteristics of climate actions. FOF is derived from data on functions and output, and indicates the consistency between outputs and functions. In terms of measuring effectiveness, FOF goes beyond mere output measurement, as it not only indicates production, but also whether produced outputs are consistent with (self-) declared functions. For instance, a climate initiative that declares training as its function could be expected to produce a curricular programme and to organize seminars. A training initiative that produces knowledge (and nothing else) may be considered 'active,' but its output would not fit its declared function. FOF carries little additional information on individual initiatives, but its application to larger sets of actions allows for systemic situation analyses (cf. Andonova 2014, Chan 2014), to illustrate larger trends and aggregated patterns of effectiveness by region or by sector. International organizations, as well as other entities that seek to orchestrate non-state climate actions, could use data on FOF to more strategically engage with non-state and sub-national actors (cf. Abbott and Snidal 2009, Chan and Pauw 2014, Hale and Roger 2014).[13] For example, a below average FOF in one region could indicate the need for additional support, or the reconsideration of instruments that may have been considered universally applicable. Conversely, actions with an above average FOF in a certain region or sector may merit in-depth research, and perhaps recognition in international processes (such as the UNFCCC) as 'highlights' or 'best practices.' Furthermore, as noted earlier, FOF only measures what has been produced by climate actions so far. Considering that the climate actions announced at the UN Climate Summit are only a year out, it is possible that more outputs may materialize as actions mature, resulting in a higher FOF. This possibility is yet another reason for climate actions to be systematically reviewed as they progress.

The determination of FOF requires an explicit and well-defined range of governance functions and explicit and well-defined categories of outputs as outlined above. In addition, FOF requires a theoretical linking between functions and outputs in order to determine whether and to what extent a climate action's function(s) is matched by fitting outputs (see table 3).

Functions	fitting outputs
knowledge production	PUB_RES; DTB; EVO_S2S; EPA_S2S
knowledge dissemination	PUB_EDU; DTB; EVO_S2S; EVO_SCP; EVO_POL; EVO_POP; EPA_SCP; EPA_POL; EPA_POP; SOM
technical implementation and 'on the ground' action	ITT; PUB_EMR
institutional capacity building	INS_ORG; INS_PIN; EVO_POL; EPA_POL
norm and standard setting	PUB_STA
Campaigning	PUB_ADV; EVO_POP; EPA_POP; SOM
Lobbying	PUB_POL; COM_CON; EVO_POL; EPA_POL
participatory management	INS_PAR; PUB_REP; EVO_POP
training and non-state and sub-national capacity building	PUB_EDU; EVO_POP

[12] The FOF measure has been applied before in Pattberg, P. et al. (2012). For this research, function and output categories have been adapted to better reflect those found among climate initiatives.

[13] In the context of orchestration in global governance (cf. Abbott and Snidal 2009) effectiveness analyses inform state, intergovernmental organizations, as well as others (cf. Hale and Roger 2014), to strategically steer, empower, support, and mobilize non-state action (Chan and Pauw 2014).

Funding	FUN_RAI; FUN_PRO
product development	COM_PRS
policy planning	PUB_POL; EVO_SCP; EVO_POL; EPA_SCP; EPA_POL; INS_PIN

Table 3 Function-Output-Fit

Annex 2: List of climate actions presented at the 2014 UN Climate Summit

A total of 29 'action statements' and 'commitments' were presented at the 2014 UN Climate Summit. Many of the action statements subsumed different initiatives, sometimes clustering actions that existed prior to the summit. Such clustering and the subsuming of different initiatives complicate an analysis that is specific enough to make statements about e.g. the organization or the performance of an activity. To allow a more accurate investigation, we therefore counted different initiatives as separate actions. To determine these actions, we studied whether activities in the statements were described separately (e.g. by using different names, addressing different issue areas, having distinct logos and/or websites, or involving different sets of partners). For instance, the Energy Accelerator Platform was presented as one initiative at the summit, but a closer reading of the action statement shows that the initiative can be disaggregated in actions addressing vehicles, lighting, appliances, buildings and district energy systems (the first two actions existed prior to the summit). Rather than counting the Energy Accelerator Platform as one action, we considered it as five different actions. According our understanding and definition of climate actions, which includes subsumed and clustered initiatives, we find more climate actions than action statements and commitments, namely 52 climate actions.

	Name of climate action	Action area
1	Africa Climate-Smart Agriculture Alliance	Agriculture
2	Africa Union-NEPAD Agriculture Climate Change Programme	Agriculture
3	Solutions from the Land: Adaptive Management to Meet Food, Fiber, Energy and Environment Goals	Agriculture
4	Partnership to Create an EverGreen Agriculture	Agriculture
5	World Bank: Scaling up CSA for Impact	Agriculture
6	IFAD: Small Farms, Big Impacts: Helping Smallholder Farmers Adapt to Climate Change (Adaptation for Smallholder Agriculture Programme (ASAP)	Agriculture
7	CSA Youth Group: Mainstreaming Youth and Persons Living with Disabilities in Climate-Smart Agriculture	Agriculture
8	Costa-Rica: Environmental Services Recognition Program	Agriculture
9	Nigeria: National Agricultural Resilience Framework and the Planting with Peace Program	Agriculture
10	CCAC Agriculture Initiative	Agriculture
11	ICO: Encouraging the global coffee sector towards climate smart agriculture	Agriculture
12	Kellogg's Commitment to Help Improve Smallholder Livelihoods and Climate Resiliency	Agriculture
13	McDonald's Commitment on Sustainable Beef	Agriculture
14	Walmart Climate Smart Agriculture	Agriculture
15	WFP: R4 Rural Resilience Initiative Expansion to Malawi and Zambia	Agriculture
16	Global Alliance for Climate-Smart Agriculture	Agriculture
17	Global Research Alliance for Agriculture (GRA) on Agricultural Greenhouse gasses	Agriculture
18	GFAR: Empowering Farmers Organisations on Climate Change Through Better Foresight	Agriculture

19	Climate-Smart Agriculture (CSA) Booster	Agriculture
20	IFDC/VFRC: Yield, Income and Climate Gains Through Smart Rice Fertilization	Agriculture
21	Compact of Mayors	Cities
22	Compact of States and Regions	Cities
23	The Cities Climate Finance Leadership Alliance	Cities
24	Global Energy Efficiency Accelerator Platform	Energy
25	Vehicle Fuel Efficiency Accelerator / Global Fuel Economy Initiative	Energy
26	Lighting Efficiency Accelerator / en.lighten initiative	Energy
27	Efficient Appliances Accelerator / Global Partnership on Appliances and Equipment	Energy
28	Building Efficiency Accelerator	Energy
29	District Energy Accelerator	Energy
30	Africa Clean Energy Corridor (ACEC)	Energy
31	Global Geothermal Alliance	Energy
32	SIDS Lighthouses Initiative	Energy
33	Divest-Invest Global Movement	Finance
34	Global Investor Statement on Climate Change	Finance
35	Caring for Climate Business Leadership Criteria on Carbon Pricing	Finance
36	The New York Declaration on Forests	Forests
37	Oil and Gas Climate Initiative	Industry
38	The Oil & Methane Partnership	Industry
39	Green Global Freight	Industry
40	Phasing Down Climate Potent HFCs	Industry
41	Municipal Solid Waste	Industry
42	Integrating Risks into the Financial System 1-in-100 Initiative	Resilience
43	Resilient Cities Acceleration Initiative	Resilience
44	Climate Information for Climate Action	Resilience
45	Promoting Disaster and Climate Risk Resilience Through Regional Programmatic and Risk Financing Mechanisms	Resilience
46	African Risk Capacity (ARC), Extreme Climate Facility (XCF)	Resilience
47	Caribbean Catastrophe Risk Insurance Facility (CCRIF)	Resilience
48	Pacific Chapter on Promoting Disaster and Climate Risk Resilience	Resilience
49	The Urban Electric Mobility Vehicles Initiative (UEMI)	Transport
50	The International Railway Association (UIC) Low-Carbon Sustainable Rail Transport Challenge	Transport
51	The International Association of Public Transport (UITP) Declaration on Climate Leadership	Transport
52	Aviation Action Statement	Transport

Table 4 List of climate actions

Annex 3. GAFCA survey

Global Aggregator for Climate Actions (GAFCA) is a collaborative research project between the London School of Economic and Political Science (LSE) and the German Development Institute (DIE), and is led by Dr Robert Falkner and Dr Sander Chan. It aims at establishing one of the first and most comprehensive databases on climate initiatives by non-state and sub-national actors. The database will serve as the basis for comparative research into the roles and functions that these initiatives are performing. We also hope that the database will become a useful tool for the UNFCCC and the climate initiatives themselves. Initial results of our research will be published in the run-up to the Conference of the Parties (COP-21) in Paris later this year. Our project is supported by a research grant from the LSE's Grantham Research Institute on Climate Change and the Environment.

1. Please enter your name and position

2. Please enter the name of your organization/initiative (presented at the 2014 UN Climate Summit)

3. At what email address would you like to be contacted?

4. Which of the following best describe the functions that your climate initiative performs (if yes, please give examples or simply enter 'yes'; if no, please leave empty)

Knowledge production (Production of scientific or applied knowledge, information, innovation)

Knowledge dissemination (Dissemination of knowledge, including dissemination of 'good practices')

Implementation (Implementation of existing mitigation/adaptation plans, policies or technologies)

Institutional capacity building (building new, or expanding existing, institutions or partnerships with or without legal status)

Norm and standard setting (setting and/or spreading new norms and standards, e.g. certification schemes)

Campaigning and education (e.g. to raise public awareness, educating public audiences)

Lobbying governments

Participatory management (including involvement of local communities in policy programmes)

Training & capacity building (Training of employees, students and other actors, as well as curriculum development)

Funding (raising and/or providing funds for climate related projects)

Product development (developing climate-friendly commercial products and/or services)

Policy planning (developing policy plans or policy instruments at national or regional level)

5. Does your organisation/initiative perform other functions that are not captured above in question 4? (please give examples)

6. Please provide a brief list of the most significant outputs that your climate initiative has delivered (e.g. databases, publications, standards, events, institutions, products, etc.)

1

2

3

4

GAFCA Research Team

Dr. Sander Chan, German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE)
Dr. Robert Falkner, London School of Economics and Political Science (LSE)
Matthew Goldberg (LSE)
Jade Zhao (LSE)
Dr. Harro van Asselt, Stockholm Environment Institute (SEI)
Johanna Götz (DIE) (assistant)
Till Neukirch (DIE) (assistant)

Sponsors

German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE)
Climate Policy Innovation Fund, ESRC Centre for Climate Change Economics and Policy (CCCEP), LSE.

Further information

For more information on the project, please contact Dr. Sander Chan at sander.chan@die-gdi.de