

The role of the G20 in governing the climate change regime

Joy Aeree Kim · Suh-Yong Chung

Accepted: 16 April 2012
© Springer Science+Business Media B.V. 2012

Abstract A wide array of institutions governing climate change has proliferated over the past years, influencing the rule-makings of the regime. One of them is the G20. When G20 leaders around the world convened in London to restore global economies, they stressed the importance of a ‘resilient, sustainable, and green recovery’ and reaffirmed their commitments to address climate change. This was followed by their agreement on phasing out inefficient fossil fuel energy subsidies over the medium term in Pittsburgh. The ‘coexistence of narrow regimes in the same issue-area’ could be described as ‘regime complexes’, which enable countries to adapt more readily, particularly when adaptation requires complex changes in norms and behavior. Given that responses to climate change would require changes in the domestic politics of different countries at different levels, loosely integrated institutions of regime complexes could be more advantageous for countries to adapt and in engaging with developing countries. This paper demonstrates that the G20’s highly informal institutional setup as well as its flexible cooperation tools could enable its members to customize their policies and better engage with third-party countries. In addition, the G20 group could collectively influence other key countries to reach an agreement on some of the key climate change–related issues, thereby facilitating the United Nations process of climate change.

Keywords Climate change · Governance · G20 · Environmental governance · Global governance

This paper is based on a draft presented at the 2nd UNITAR’-Yale Conference on Environmental Governance and Democracy, 17–19 September 2010, New Haven, USA.

J. A. Kim (✉)
Economics and Trade Branch, Division of Technology, Industry and Economics,
UNEP, 15 rue Millan, 75009 Paris, France
e-mail: joysky.kim@gmail.com

S.-Y. Chung (✉)
Division of International Studies, Korea University, Seoul, South Korea

Abbreviations

APP	Asia–Pacific Partnership on clean development and climate
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Green House Gases
G7	Group of 7
G8	Group of 8
G20	Group of 20
IEA	International Energy Agency
LPG	Liquid Petroleum Gases
MEF	Major Economies Forum on energy and climate
MEM	Major Economies Meeting on energy security and climate change
OECD	Organisation for Economic Cooperation and Development
PCF	Prototype Carbon Fund
SEFTA	Sustainable Energy Free Trade Areas
UNFCCC	United Nations Framework Convention on Climate Change
WEF	World Economic Forum
WTO	World Trade Organisation

1 Introduction

Global efforts to create regulatory arrangements for governing climate change have resulted in a proliferation of institutions. Such phenomena were further accelerated as the institutions governing global economies have set the path to a green economy in the midst of critical economic crisis. The movement toward a green economy among the global economic institutions was based on recognition that such a transition will be essential to go beyond the current crisis and address urgent challenges, that is, actions against climate change, enhancement of energy security, and creation of new engines for economic growth.

Among others, the G20 has emerged as a global economic institution influencing the rule-makings of the climate change regime. When G20 leaders around the world convened in London to restore global economies,¹ they stressed the importance of a ‘resilient, sustainable, and green recovery’ and reaffirmed their commitments to address climate change. At the Pittsburgh G20 Summit, they agreed on phasing out inefficient fossil fuel energy subsidies over the medium term. If effectively implemented, such commitments could encourage the conservation of energy, improve their energy security, reduce economically inefficient burdens on budgets, and provide a down payment on their commitment to reduce GHG emissions.

The proliferation of international institutions is in fact frequently observed across different regimes, although the degree might vary (Keohane and Victor 2010; Biermann et al. 2009). Scholarly debates are divided into pros and cons about such a phenomena. In particular, Keohane and Victor (2010) describe the proliferation of international

¹ This new international forum of finance ministers and central bank governors represents 19 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, Korea, Turkey, United Kingdom, United States), the European Union and the Bretton Woods Institutions [the International Monetary Fund (IMF) and the World Bank].

institutions governing climate change as ‘regime complexes’ and argue that regime complexes have two significant advantages: flexibility across issues and adaptability over time. Based on the regime complexes theory, this paper demonstrates that the G20 group could collectively influence other key countries to reach an agreement on some of the key climate change–related issues, thereby facilitating the United Nations process of climate change. Given that the changes required to respond to the climate change differ in different countries, the G20’s highly informal institutional setup as well as its flexible cooperation tools could enable its members to customize their policies in advancing the climate change agenda and to better engage with third-party countries.

2 Regime complexes and climate change governance

According to Keohane and Victor (2010), the proliferation of institutions governing climate change could be described as ‘regime complexes’, which mean a ‘varied array of narrowly focused regulatory regimes’, and the elements of this regime conflict or mutually reinforce at times. They argue that there are little incentives for individual governments to accept a single common set of rules. Hence, it is more often witnessed that several narrow regimes coexist in the same issue area as observed with the climate change regime.²

Regime complexes, in Keohane and Victor’s view, have two significant advantages over politically feasible integrated and comprehensive regimes: flexibility across issues and adaptability over time. Integrated regimes are characterized by institutional monopolies, and their performance becomes ineffective as such core institutions dysfunction. This has been witnessed through the case of the UNFCCC and the Kyoto Protocol to a certain extent. They argue that, in the absence of rules binding all members of a common institution, countries are more flexible in adapting rules to distinctively different conditions on different issues or for different coalitions of actors. Consequently, they are more likely to adhere to some types of constraints on GHG emissions.

In addition, regime complexes enable countries to adapt more readily, particularly when adaptation requires complex changes in norms and behavior. Given that responses to climate change would require changes in the domestic politics of different countries at different levels, Keohane and Victor (2010) argue that loosely integrated institutions of regime complexes could be more advantageous for countries to adapt and particularly in engaging with developing countries.

These advantages, however, could only be realized under certain conditions. Buchanan and Keohane (2006) propose criteria by which regime complexes could be evaluated whether they are functional or dysfunctional: (1) coherence, which means that the various elemental regimes within the regime complexes are compatible and mutually reinforcing; (2) accountability, which implies that the elements of the regime complexes should be accountable to relevant audience including both states and non-governmental organizations as well as the public; (3) effectiveness is characterized by a reasonable level of compliance with rules; and (4) determinacy, which is measured by rules that have ‘a readily

² In theory, when the interests of all the most powerful actors converge across a broad issue area, the demand by such actors could yield a single institution to achieve their objectives through reducing contracting costs, providing focal points and enhancing information. As a result, credibility and capacity to monitor their compliance could be generated (Keohane 1984). The evolution of the general agreement on tariffs in trade (GATT), followed by the World Trade Organisation (WTO), is a case in point as the creation of a single integrated trade regime provided benefits to all members through the most favoured nation and national treatment principles.

ascertainable normative content' (Franck 1990). Therefore, realizing the advantages of regime complexes is subject to the extent to which individual institutions governing the climate issue adhere to these criteria collectively.

However, concerns are raised whether the proliferation of institutions governing climate change might hinder its effective performance. Biermann et al. (2009) describe it as 'fragmentation of governance' and argue that while loosely integrated institutions with small numbers of nations might be faster to reach on agreement with higher ambition, such an agreement might hinder the long-term trust and regime stability as it might provide disincentives for third-party countries to engage in the process. The limited memberships of the fragmented structure could also raise a question of equity with those whose interests are not accommodated in the decision-making process.

Others (Braithwaite and Drahos 2000; Busch 2007) also raised similar concerns. They argue that the existing multiple forums of regime complexes could result in forum-shifting, moving a regulatory agenda from one organization to another or pursuing the same agenda in more than one organization.³

However, Keohane and Victor (2010) argue that loosely integrated institutions of regime complexes have strong advantages in regulating climate change as specific problems involved in regulating climate change are so diverse that it is difficult for a single institution to solve such problems. In addition, diverse approaches are likely to attract a variety of supporters, and each of them is inclined to choose approaches that are aligned with their own interests and beliefs.

The following section discusses the advantages of regime complexes by examining how loosely integrated institutions governing climate change address diverse problems and enable their members to better engage with third-party countries.

3 Proliferation of institutions governing climate change

Initially climate change institutions were clustered around the United Nations Framework Convention on Climate Change (UNFCCC) with its universal membership. Although not strictly binding, UN decisions provide a framework of rules and mechanism in which the Member States fulfill their commitments. For instance, the global carbon market rules are derived from UN decisions. An attempt to create a comprehensive regime under the Kyoto Protocol to the UNFCCC, however, fell short of its expected effect since developing countries have no obligations under the Protocol and the United States has not yet ratified it.

So far, continuous attempts to produce a new international treaty, binding all major emitting countries, have not born fruits, though. Despite the efforts made by world leaders to achieve a legally binding climate treaty at the Copenhagen Summit in 2009, the UN process failed to build a coalition among the key Member States due to their conflicting interests (WBGU 2010). Instead, it ended with the Copenhagen Accord, which is a political instrument and not legally binding.

The Cancun Agreement adopted in 2010 has succeeded to achieve the commitments from all major polluting countries for the first time in the form of UN decisions, although it is still not legally binding. Subsequently, the Durban agreement in 2011 at least enabled countries to continue negotiating the post-Kyoto Protocol by providing a time frame for the negotiation starting in 2012 until 2015 (Aldersgate Group 2012). In addition, both the

³ Alter and Meunier (2009) argue that in order to resolve this problem, governments may also try to bundle issues across different forums.

Cancun and Durban Agreements demonstrate that the Member States were able to reach an agreement on specific issues. One such example is the establishment of the new Green Climate Fund on finance (The Climate Institute 2010; Aldersgate Group 2012).⁴

Despite some progress made at Cancun and Durban, whether there will be a second commitment period under the Kyoto Protocol covering all major economies remains to be seen. While the EU made an announcement of its own climate target for the second commitment period in Durban, no other major countries including Japan, Canada, United States, China, and India followed the suit (Aldersgate Group 2012). Thus, the political feasibility of reaching a new climate treaty in the short term seems questionable.

The limitations of the UN process in creating a new climate treaty could be attributable to, among others, its inability to build a political coalition among the key countries. For example, as observed over the past 3 years, power dichotomy between the United States and China has proved to be a stumbling block for the progress of global climate negotiations. In order to address this issue, several proposals have been put forward. The German Advisory Council on Global Change (WBGU), for instance, proposes to forge sub-global alliances. A pilot coalition could be built involving an ambitious group of key countries such as India, Brazil, Egypt, Indonesia, South Korea, Japan, and the Maldives.⁵ These countries may enhance their collective influences over other key countries that may ease the battleground between the United States and China. The WBGU also points out that the division of the parties under the UNFCCC Annex I and non-Annex I countries is an outdated dichotomy and proposes some differentiation within the group of non-Annex I countries.

It appears that the current power dynamics within the existing governance framework of the UN constitute barriers to achieving an outcome that could guarantee a reasonable level of compliance by major polluting countries. As Smith and Heinbecker (2010) state it, 'the UN with its 192 members, is too big and unwieldy, and too sensitive to conflicting interests and ideologies, to reconcile the regional differences on its own. The five countries that came together to cut the basic deal in Denmark—the United States, China, Brazil, India, and South Africa—are too narrow a group to attract the requisite followers. The EU, Japan, South Korea, Mexico, and Canada are too important to an equitable and sustainable solution to be left on the sidelines'.

The repeated setbacks of the UN process to create a new climate treaty over time have naturally spawned a proliferation of institutions that aim at galvanizing consorted endeavors among the smaller number of states and other stakeholders.⁶ One such example is the Asia–Pacific Partnership on clean development and climate (hereinafter APP). Initially, the creation of the APP largely led by the United States, and it was intended to shape an alternative path to the Kyoto Protocol while stressing the cooperation of research and deployment of clean technologies among seven countries in the region (Australia, Canada, China, India, Japan, Korea, and the United States). These countries account for more than half of the world's economy, population, and energy use. The APP emphasizes the importance of market and technology and encourages the engagement with the private

⁴ Another concrete achievement at the Cancun meeting was to agree on measures to improve transparency of domestic efforts to reduce emissions. This includes an international review process of countries' actions by technical experts. The monitoring measure was a key sticking point between China and the US (The Climate Institute 2010).

⁵ The WBGU points out that these countries would also be core driving force for 'green innovation', leading to a rapid transition to a climate-friendly world economy (WBGU 2010).

⁶ Aftermath of the Copenhagen Summit, the need for a polycentric approach via bilateral and regional cooperation was reiterated as a means to revitalise climate talks (E3G 2010; Torney and Grup 2010).

sector. Based on the public–private partnership, the APP has developed a series of projects that the participating governments and the private sector work together. For instance, as a main implementation arm, several Task Forces were created to improve the use of existing energy and industrial technologies and overcome market barriers to deploy these technologies in the five heavy industry sectors (aluminum, buildings and appliances, cement, coal mining, and steel) and three energy supply sectors (cleaner fossil energy, renewable energy, and distributed generation and power generation and transmission) (APP 2006).

The creation of the APP was followed by the formation of the Major Economies Meeting on energy security and climate change (MEM) of 17 states and the United Nations in 2007, which aimed for a more flexible strategy to cut down emissions through its own rule-makings. The MEM was further developed and renamed as the Major Economies Forum on energy and climate (MEF)⁷ in 2009a. By facilitating a candid dialogue among the major developed and developing economies, the MEF intends to help generate a political leadership required to achieve a successful outcome at the climate change negotiation (MEF 2009a). The MEF has also adopted an approach to promote globally coordinated clean technology actions through its global partnership for low-carbon and climate-friendly technologies. While identifying ten key climate-friendly technologies that address more than 80 % of CO₂ emission reduction at the energy sector,⁸ global partnership has developed its plans to support innovation, accelerate deployment of clean technologies, and facilitate information sharing among the participating countries (MEF 2009b). Such initiatives taken by the MEF demonstrate its large potential to expedite the development and deployment of climate-friendly technologies through its networks among the member countries.

Multilateral development banks have also contributed to the rule-makings of the climate change regime with a particular focus on assisting developing countries for their climate change mitigation and adaptation efforts. For instance, the World Bank is actively involved with the Kyoto Protocol's clean development mechanism by channeling the Prototype Carbon Fund (PCF) investment. Furthermore, its adoption of the strategic approach to climate change and development has played a critical role in securing necessary financial resources, disseminating the information and developing cooperative projects. Several financial mechanisms such as the special climate change fund, the least development countries fund and GEF–NGO networks have also been established to provide financial resources to developing countries.

Several global economic forums have also begun to take up the issue of climate change over the past few years. The World Economic Forum (WEF), for instance, attempts to re-design existing institutions, policies and regulations in order to narrow down governance gaps, prevent systemic failures and restore growth with global leaders and multi-stakeholders. Through its global redesign initiative on resources and sustainability, an unprecedented multi-stakeholder dialogue, the WEF has provided a set of proposals to address climate change, that is, prioritizing 'quick-start' climate initiatives for financing;

⁷ The 17 major economies participating in the MEF are: Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the United Kingdom, and the United States. Denmark, in its capacity as the President of the December 2009 conference of the parties to the UN framework convention on climate change, and the United Nations have also been invited to participate in this dialogue.

⁸ Ten key technologies include advanced vehicles, bio-energy, carbon capture, use and storage, buildings sector energy efficiency, high-efficiency, low-emissions coal, marine energy, smart grids, solar energy and wind energy.

assisting low-carbon growth plan in China; establishing sustainable energy free trade areas (SEFTA); and campaigning sustainable consumption (WEF 2010).

In addition, the G20, which replaced the G8 on non-security issues, has begun to discuss the specific issues concerning climate change as the London Summit 2009 expanded its mandate from international economic cooperation to green growth.⁹ Announced for the first time by the finance ministers of the G7 on September 25, 1999 in Washington DC, the creation of the G20 was intended to establish an informal mechanism for a dialogue among industrialized countries and emerging markets with a view to promoting international financial stability. As a consultative body rather than a decision-making body, the G20 was designed to encourage consensus-building on international issues (Canada 1999). It was only at the Pittsburgh Summit in 2009 where the G20 emerged as a premier and permanent forum for international economic governance, replacing the conventional role that the G7 followed by the G8 had been playing as the steering committee for the world economy until then (Kirton 2010).¹⁰

In terms of membership, G20's geographical and economic representation is overlapping with that of the APP or the MEF as they all ultimately aim to secure a strategic cooperation that is indispensable for the goal of the climate change regime. Yet the G20 is distinctive in terms of the breadth of its agenda with its higher institutional standing. In addition, various institutions governing climate change serve different purposes by addressing diverse issues related to climate change. While APP and MEF are focusing on the development and deployment of clean technologies, initiatives made by multilateral development banks attempt to mobilize financial resources required to move toward a low-carbon economy. The WEF and the G20 on the other hand, aim to create an informal mechanism for dialogue with different stakeholders. As such, different functions that each institution delivers could be complementary and mutually reinforcing, bringing international efforts one step closer to achieving the goal of the climate change regime.

4 The role of the G20 in advancing the climate change agenda

As Keohane and Victor (2010) argue, loosely integrated institutions of regime complexes could be more advantageous for countries to adapt and particularly in engaging with developing countries. In order for such advantages to be realized, they assert that, there are certain criteria to be met. Building on such a theoretical framework, this section will examine the potential effectiveness of the G20 in addressing key climate change issues by creating an issue-specific coalition. Unlike the concerns raised by Braithwaite and Drahos (2000) as well as Busch (2007) that the existing multiple forums of regime complexes could result in a forum-shifting, the case of the G20 demonstrates that it could play an instrumental role in facilitating the UN process.

4.1 Complementary and reinforcing role of the G20 in governing climate change

The G20 has developed an innovative way of ensuring appropriate geographical and economic representation from various parts of the world. The G20 now accounts for about

⁹ Over the past 5 years, the issue of climate change always has been the agenda of the G8 Summit, particularly when G8 leaders met with leaders from the five key developing countries (G8 + 5).

¹⁰ Like the G7, but unlike larger international organizations such as the United Nations, the World Bank and the IMF, the G20 has no permanent secretariat.

two-thirds of global population and 85 % of global GDP and more than 80 % of global trade is taking place in G20 countries.

Smith and Heinbecker (2010) argue the G20 is a group big enough to include all the key countries whose cooperation is indispensable to address climate change, as it represents more than 80 % of the global GHG emissions. At the same time, securing the participation of key countries in discussing on the possible solutions can also facilitate reaching an agreement while avoiding lengthy negotiations.

In many ways, the G20 plays a distinctive yet complementary role in governing climate change. For instance, while the G20 convenes an informal yet intense high level forum, both the APP and the MEF aim for clean technology deployment by seeking a private–public partnership and global partnership, respectively. In addition, the G20 intends to address a different set of issues concerning climate change such as financing, fossil fuel subsidies and a broader engagement with stakeholders by building an issue-specific coalition. It has also successfully induced its members' political commitments in these issue areas. As a result, the G20 and other climate change governing organizations could be mutually reinforcing by addressing diverse issues related to climate change solutions and delivering different functions.

The G20's distinctive role as an informal mechanism to facilitate a high level dialogue could be attributable to its contextual characteristics. Kirton (2010) describes three defining contextual characteristics of the G20 as follows: small-group plurilateralism in memberships and participation; direct delivery by leaders through face-to-face summitry; and institutionalization in a highly informal and intense forum. He argues that such characteristics create 'a club of equals' in which all can lead or follow through flexible and issue-specific coalitions in pursuit of collective responsibilities and goals. By integrating all issues in mutually reinforcing and innovative ways, the G20 is well fit to cope with uncertainty and complexity with a focus on the future of global order in its entirety.

Suominen (2009) also argues that the so-called G system including the G20 and the G8 is considered suitable for the fast changing world of global finance due to its flexible coordination tools without heavy obligations. Yet, this flexibility enables the members to make deeper commitments in a relatively shorter period of time than would be possible in the G20 on its own, let alone in other bigger forums by allowing the members to customize policies. Therefore, the strengths of the G system in general could be characterized as 'agility, responsiveness, and customization'.

The flexibility and agility of the G20 in building issue-specific coalitions for common goals have already been proven when the twenty major economies quickly agreed on deploying green stimulus package during the recent global economic crisis. When the G20 leaders convened in London and agreed to a \$1.1 trillion stimulus package in 2009, they expressed political wills to set a recovery path to the low-carbon economy for the first time. The G20 stressed 'a fair and sustainable recovery for all' and made a commitment by stating that 'we will make the transition toward clean, innovative, resource efficient, low-carbon technologies and infrastructure ... we will identify and work together on further measures to build sustainable economies'.

As part of their implementation measures, some G20 governments adopted sizable 'green fiscal' measures including support for renewable energy, carbon capture and sequestration, energy efficiency, public transport and rail, and improving electrical grid transmission, as well as other public investments and incentives for environmental protection (Barbier 2009).

Furthermore, the G20 reaffirmed their commitments to 'address the threat of irreversible climate change, based on the principle of common but differentiated responsibilities and to

reach agreement at the UN Climate Change Conference in Copenhagen in 2009' (London Summit Leaders' Statement 2009). The issue of climate change was discussed in further details at Pittsburgh Summit in 2009 in the context of the 'framework for strong, sustainable and balanced growth'.

G20's accountability, however, is yet to be proven in the absence of overarching surveillance and enforcement mechanisms. For instance, despite pledging to build an inclusive, green and sustainable recovery, 'green stimulus' measures in G20's economic recovery packages in response to the 2008–2009 recessions turned out to be short of major global green recovery efforts. Nearly \$3 trillion has been spent on fiscal stimulus around the world. Yet, as of 1 July 2009, only about 17 % of \$2.7 trillion that G20 economies committed to fiscal stimulus were spent on low-carbon, energy, efficiency or environmental improvement measures. In terms of GDP, the total green stimulus investments only amounted to around 0.7 % of the G20's GDP (Barbier 2010a).¹¹ This insufficient implementation of the green stimulus policy would limit the effectiveness in 'greening' the global economy (Barbier 2010b).

4.2 G20's effectiveness in addressing key issues related to climate change

If the division between Annex I and non-Annex I countries was the biggest barrier for the UN process to achieve successful outcomes to address climate change, a sense of being equal among the G20 countries could enable them to surpass such a division and to create a common ground. Despite the absence of compliance mechanisms, G20's ability to build a coalition on specific climate change issues has already produced some concrete outcomes in the following areas, demonstrating its effectiveness in advancing climate change agenda.

4.2.1 *Financing for climate change*

The issue of finance was one of a few areas in the UN climate change negotiation that has achieved some fruitful outcomes. The Copenhagen Accord, for instance, succeeded in achieving collective commitments by developed countries to provide \$30 billion in fast-start finance for developing countries in 2010–2012 and mobilize \$100 billion a year in public and private finance by 2020. At the Cancun meeting, the establishment of a new 'Green Climate Fund' was agreed to help mobilize \$100 billions a year by 2020 to support a low-carbon economy. The Fund, if implemented successfully, is expected to channel billions of dollars of investment in clean energy sector (Pew Centre Global Climate Change 2010).

In achieving such successful outcomes on finance in the UN process, the G20 played an instrumental role. Acknowledging the importance of climate change finance in striking a climate deal at the UN climate change negotiation, G20 leaders agreed to intensify their efforts to support the negotiation process on finance and requested their finance ministers to prepare possible plans for climate change finance in the run-up to the Copenhagen meeting.

In November 2009, the finance ministers met in St. Andrews, USA and among other international financial concerns discussed financing options for climate change. The

¹¹ Despite such deficiency, Barbier (2010a, b) argues that given its sheer size of population, GDP and GHG emissions, coordinated actions by the G20 for green growth would also have a profound effect on "greening" the world economic recovery and sends a strong message of the importance of revising the world economy and addressing pressing global challenges to the rest of the world.

discussion focused on the following issues that have provided the ground for the negotiations on climate change at the Copenhagen meeting: (1) necessity to increase significantly and urgently the scale and predictability of finance to implement an ambitious international agreement; (2) potential of public finance as a leverage for private investment; (3) importance of national policy frameworks and the level of emissions reductions needed to increase the scope of carbon markets; (4) necessity of coordinated, equitable, transparent and effective delivery mechanisms for discussed financing options; and (5) assurance of coordinated support for country-led plans and reporting mechanisms across all financing channels including multilateral, regional and bilateral ones (St. Andrews Meetin's Communiqué 2009).

Moreover, in order to define financing options and institutional arrangements, the finance ministers agreed on setting up the G20 Climate Finance Experts Group. The Group was assigned to prepare a report that assesses the required scale of international public financing to address climate change; outlines public sector contributions-who should contribute and how financial resources can be allocated; identifies potential source of public sector funding; and addresses how to measure climate finance (G20 Climate Finance Experts Group 2010). Such intensive efforts made by the G20 have eventually contributed to advancing the issue of finance in the UN process.

4.2.2 *Phasing out inefficient fossil fuel subsidies*

Another issue area that the G20 has been more successful than any other institutions is its commitments on phasing out inefficient fossil fuels subsidies. While the issue of energy subsidy reforms has been a thorny issue to discuss at other global forums, including the WTO, G20's initiatives have successfully raised the profile of that issue in the international arena and helped build a momentum globally for fossil fuel subsidy reforms. At the Pittsburgh Summit, the G20 leaders have committed to phasing out inefficient fossil fuel subsidies over the medium term, which would encourage the conservation of energy, improve their energy security, reduce economically inefficient burdens on budgets, and provide a down payment on their commitment to reduce GHG emissions.

In order to achieve this goal, the G20 established a working group on energy. Under the supervision of the Finance and Energy Ministers, the G20 energy experts have reviewed a fossil fuel subsidy program in their own countries and developed strategies and timeframes for phasing out inefficient fossil fuel subsidies. The working group has also requested the International Energy Agency (IEA), the Organization for Economic Cooperation and Development (OECD) and the World Bank to prepare for a Joint Report analyzing the scope of global energy subsidies and offering recommendations for the rationalization and phasing out of inefficient subsidies. The Joint Report demonstrated that eliminating fossil fuel subsidies by 2020 would reduce GHG emissions in 2050 by 10 %.

Some progress has been observed in delivering leaders' commitments on reducing energy subsidies. As part of the G20 leaders' commitments in Pittsburgh, the G20 countries have developed strategies and timeframes for implementing national policies to rationalize and phase out inefficient fossil fuel subsidies. According to the Joint Report (G20 submission 2010), as of 11 June 2011, 12 countries have submitted their strategies and timetables.¹²

¹² These countries are Argentina, Canada, Germany, India, Indonesia, Italy, Korea, Mexico, Russia, Spain, Turkey and the United States.

In addition, India has announced to deregulate retail gasoline prices and decided to raise the prices for diesel, kerosene, and liquid petroleum gases (LPG), with a goal to phase out diesel subsidy over time. Mexico has also begun to phase out motor fuel subsidies, while providing support for low-income households (US Department of State's Bureau of International Information Programmes 2010).

If the G20 member countries successfully implement their strategies to rationalize and phase out inefficient fossil fuel subsidies in the promised time frame, it would have a substantial impact on primary energy demand at the global level as well as on energy-related carbon dioxide emissions reductions.

4.2.3 Engaging wider stakeholders: Seoul Business Summit

The G20 has also taken an innovative initiative to engage with the private sector by developing an institutional mechanism through which the private sector interacts directly with global leaders. The importance of the private sector's role in deploying green technologies and creating green jobs has been widely touted, yet few institutions provide such mechanisms.¹³ Under the auspices of the Seoul Summit in 2010, the Seoul Business Summit Meeting was held for the first time, which gathered approximately 120 global business leaders to ensure strong, sustainable and balanced growth. The Seoul Business Summit Meeting focused on four areas such as trade and foreign direct investment; finance; green growth; and corporate social responsibility (Seoul G20 Business Summit: Findings and Recommendations from Participants 2010).

In particular, business leaders gathered in Seoul discussed energy productivity, sustainable use of renewable energy sources and the creation of green jobs in the context of green growth. Prior to that, business representatives met in Tianjin, China to share their initial findings and delivered preliminary recommendations directly to the G20 finance ministers before the preparatory meeting in Washington, DC in October 2010 and the G20 Summit Sherpas.¹⁴ Based on the findings and recommendations, the Business Summit Meeting produced a joint statement (Seoul G20 Business Summit Joint Statement by Participating Companies 2010).¹⁵

Given that the Seoul Business Summit was the first of its kind throughout the short history of the G20, the sustainability and further development of such an institutional mechanism still remain to be seen in the following G20 meetings. Yet, the Business Summit Meeting demonstrates that G20's flexible cooperation tools and innovative instruments help better engage with key stakeholders. This process could ensure efficient diffusion of climate-friendly technologies through information exchange between the public and private sectors.

¹³ The WEF as well as the MEF also provide to a limited extent a forum that brings the private and the public sectors together.

¹⁴ 'Sherpas' are the personal representatives of world leaders at the G8/G20 summits, who lead and perform the heavy lifting for governments in shaping the global agenda.

¹⁵ Regarding the energy efficiency, business leaders urged the G20 governments to establish clear and consistent energy standards; develop long-term energy policies; provide new financing solutions to help companies make long-term investments for improved energy efficiency; and support education and R&D. They also emphasized the importance of encouraging substantial use of renewable and low-carbon energy by pursuing market-based carbon pricing, mandating regular meetings of energy-related ministers and strengthening international public-private partnerships. Finally the business leaders made recommendations to the G20 governments on creating green jobs by developing policy measures in relevant sectors such as buildings, power, industries and transportation.

5 Conclusion

The case of the G20 demonstrates that its flexible institutional characteristics allow it to play a distinctive yet complementary role in governing climate change by facilitating an informal high level dialogue among different key partners and addressing diverse issues related to climate change solutions. In particular, its ability to build issue-specific coalition has proved to be effective in delivering several key outcomes such as financing and phasing out fossil fuel subsidies.

Although its accountability still remains to be proven, the analysis of the G20 reveals that large potential exists for the G20 to facilitate the UN climate change negotiation process by building a coalition within a small group of key players and collectively influencing other key countries to reach an agreement on key climate change issues. In particular, the creation of two expert groups on finance and energy as well as the Business Summit shows the G20's agility and innovative solutions to draw strong attention to politically sensitive issues as well as its effectiveness to address them by forging a political coalition.

Furthermore, given that the changes required to respond to climate change differ in different countries, G20's flexibility allowing its members to customize their policies could be advantageous in advancing the climate change agenda and engaging third-party countries in the future. For instance, the commitments made by the G20 on fossil fuel subsidy reforms show that such a customization could lead to a better engagement with developing countries and induce their commitments.

In order to realize G20's potential, however, there is an urgent need to strengthen its accountability and transparency by upgrading its institutional setup including effective monitoring and enforcement mechanisms. The first step could be to extend the G8's Accountability Working Group or report on development to embrace the G20 issues.¹⁶ With its enhanced accountability and transparency, the G20 could further reinforce its distinctive and complementary role in forging a political coalition among broader range of countries and generating much needed political leadership to govern the climate change regime.

Acknowledgments Authors would like to thank the Korea University for its support. This paper is partially supported by the Korea University Research Grant.

References

- Aldagate Group. (2012). *A tale of two cities: From Durban to Rio*. January 26, 2012.
- Alter, K., & Meunier, S. (2009). The politics of international regime complexity. Symposium. *Perspectives on Politics*, 7(1), 13–24.
- Asia-Pacific Partnership on Clean Development and Climate. (2006). *Executive summary-task force action plans*. http://www.asiapacificpartnership.org/pdf/resources/ExecutiveSummary%20_31%20Oct%2006_%20_2.pdf.
- Barbier, E. B. (2009). *Rethinking the economic recovery: A global green new deal*. Report prepared for the Economics and Trade Branch, Division of Technology, Industry and Economics, UNEP, Geneva, April. <http://www.unep.org/greeneconomy/portals/30/docs/GGND-Report-April2009.pdf>.

¹⁶ Some propose that the G20 should extend an accountability framework to all G20 commitments and allow the expert groups to solicit and receive outside reports (international civil society statement ahead of the 2010 G20 Leaders Summit in Toronto. Available at: <http://www.halifaxinitiative.org/content/towards-a-global-leaders-forum>).

- Barbier, E. B. (2010a). Global governance: The G20 and a global green new deal. *Economics: The Open-Access, Open-Assessment E-Journal*, 4, 2010–2012. <http://www.economics-ejournal.org/economics/journalarticles/2010-2>.
- Barbier, E. B. (2010b). A global green recovery, the G20 and international STI cooperation in clean energy. *STI Policy Review*, 1(3), 1–15.
- Biermann, F., Pattberg, P., & van Asselt, H. (2009). The fragmentation of global governance architectures: A framework for analysis. *Global Environmental Politics*, 9(4), 14–40.
- Braithwaite, J., & Drahos, P. (2000). *Global business regulation*. Cambridge, MA: Cambridge University Press.
- Buchanan, A., & Keohane, R. (2006). The legitimacy of global governance institutions. *Ethics and International Affairs*, 20(4), 405–437.
- Busch, M. L. (2007). Overlapping institutions, forum shopping and dispute settlement in international trade. *International Organisation*, 61(4), 735–761.
- Canada. (1999). *New G20 forum: Backgrounder, Canada, Department of Finance*.
- E3G (Change Agents for Sustainable Development). (2010). *Building the 2°C coalition: European climate diplomacy after Copenhagen*. E3G discussion paper 1. E3G: London.
- Franck, T. (1990). *The power of legitimacy among nations*. New York: Oxford University Press.
- G20 Climate Finance Experts Group. (2010). *Providing public revenue to address global climate change*. Pre-decisional and for official use confidential author's draft.
- G-20 Submission. (2010). *Report to leaders on the G20 commitment to rationalize and phase out inefficient fossil fuel subsidies*. G-20 Toronto Summit, Canada, 26–27 June 2010. http://www.g20.org/Documents2010/expert/Report%20to%20Leaders_G20_Inefficient%20Fossil_Fuel_Subsidies.pdf.
- Keohane, R. (1984). *After hegemony: Cooperation and discord in the world political economy*. Princeton, NJ: Princeton University Press.
- Keohane, R., & Victor, D. V. (2010). *The regime complex for climate change*. Harvard project on international climate agreements, discussion paper 10–33. Harvard Kennedy School.
- Kirton, J. (2010). *The G20 Summit as an international negotiation process: Shaping the systemic Summit club for Toronto and Seoul*. In Paper presented at an international conference on 'G20 Seoul Summit: From crisis to cooperation' hosted by the Korean Association of Negotiation Studies, Seoul, Republic of Korea, May 19–20, 2010.
- London Summit Leaders' Statement. (2009). <http://www.londonsummit.gov.uk/en/summit-aims/summit-communicue/>.
- Major Economies Forum. (2009a). *Fact sheet: Executive summary*. <http://www.majoreconomiesforum.org/images/stories/documents/the%20major%20economies%20forum%20april%202010.pdf>.
- Major Economies Forum. (2009b). *Technology action plan*. <http://www.majoreconomiesforum.org/images/stories/documents/MEF%20Exec%20Summary%2014Dec2009.pdf>.
- Pew Centre Global Climate Change. (2010). *Sixteenth session of the conference of the parties to the United Nations framework convention on climate change and sixth session of the meeting of the parties to the Kyoto Protocol*. <http://www.pewclimate.org/.../cancun-climate-conference-cop16-summary.pdf>.
- St. Andrews Meeting's Communiqué. (2009). http://www.g20.org/Documents/2009_communique_standrews.pdf.
- Seoul G20 Business Summit Joint Statement by Participating Companies. (2010). <http://www.seoulg20businesssummit.org/en/media/reportV.asp?cate=PDS&cate2=ENG&page=1&search=&keyword=&boardno=255>.
- Seoul G20 Business Summit: Findings and Recommendations from Participants. (2010). <http://www.seoulg20businesssummit.org/en/media/newsletterV.asp?cate=LETTER&cate2=ENG&page=1&search=&keyword=&boardno=332>.
- Smith, G., & Heinbecker, P. (2010). *The G20 and climate change: The quintessential global governance issue*. West Waterlook: Centre pour l'innovation dans la gouvernance internationale.
- Suominen, K. (2009). Now that it's over, next challenges for the G20. *Vox: Research-based policy analysis and commentary from leading economists*, 3 Oct 2009. <http://www.voxeu.org/index.php?q=node/4045>.
- The Climate Institute. (2010). *The Cancun Agreement: A preliminary assessment*. Policy brief. <http://www.climateinstitute.org.au/our-publications/reports/772-the-cancun-agreement-a-preliminary-assessment>.
- Torney, D., & Grup, A. (2010). Editorial introduction: New directions in climate change policies. *St. Antony's International Review*, 5(2), 5–15.
- US Department of State's Bureau of International Information Programmes. (2010). *G20 Summit statement on global energy, climate change challenges; G20 members "scaling up" domestic efforts to reduce emissions*. The White House Office of the Press Secretary for Immediate Release. <http://www.america.gov/st/texttrans-english/2010/June/20100627185153SBlebahC3.450739e-02.html>.

- WBGU. (2010). *Climate policy post-Copenhagen: A three-level strategy for success*. Policy paper. Berlin: WBGU.
- World Economic Forum. (2010). *Global redesign initiative*. <http://www.schwabfound.org/en/events/ArchivedEvents/GlobalRedesignSummit2010/GlobalRedesignInitiativeReport/index.htm>.