



Exploring the Schemes for Green Climate Fund Financing: International Lessons



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SUMMARY

As a key issue in recent international climate summits, the Green Climate Fund (GCF) is confronted with the problem of insufficient financing. This paper intends to explore several schemes for raising the public finance of the GCF among developed countries. Lessons from three main ongoing international financing mechanisms have been drawn, including the United Nations (UN) membership dues, Official Development Assistance (ODA), and the Global Environment Facility (GEF). The indexes that reflect historical emission responsibility (HR) and ability to pay (AP) are also used to share the burden. Results reveal that the ongoing international financing mechanisms vary in their burden sharing results and the shares of existing donors are driven by highly complex reasons. Weighting the HR, UN, and GEF approaches with the Preference Score Compromises (PSC) method could yield a compromise scheme in which the regional contributions are highly similar to those under the GCF initial resource mobilization from 2015 to 2018. GCF financing heavily depends on contributions from the developed countries even if the donor parties are extended to emerging economics. This paper also finds that the decision of the United States to withdraw from climate finance will significantly increase the burden for other donors, particularly for the European Union the contribution share of which is predicted to increase to nearly 14 percentage points. The schemes proposed in this study can provide a useful reference for GCF financing.

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1. Introduction

Climate finance has been one of the core issues of world climate summits under the United Nations Framework Convention on Climate Change (UNFCCC) in recent years. As a milestone of climate negotiations, the 2009 Copenhagen Summit proposes to establish the Green Climate Fund (GCF). Developed countries have agreed to mobilize US \$100 billion per year “new” and “additional” funds by 2020 to help developing countries respond to climate change (UNFCCC, 2010, 2011; Yamineva, 2016). This funding will come from various public and private, bilateral and multilateral, and alternative sources. However, the GCF has not progressed smoothly and remains unclear as to how the 2020 target will be achieved, and factors influencing the fluctuations in support of contributor countries remain undetermined (Markandya *et al.*, 2015). The 2013–14 climate finance estimates released by the Organization for Economic Co-operation and Development (OECD) argues that climate finance reached USD 62 billion in 2014 and USD 52 billion in 2013. Regardless, these results were strongly challenged by

some developed parties (OECD, 2015). For example, the Government of India examines carefully the accuracy, methodology, and verifiability of the OECD report and identifies serious problems on all counts; the confirmed climate finance flowing to the developing world is only 4% of the reported total (Dasgupta, Shweta, & Singh, 2015; Donner, Kandlikar, & Webber, 2016).

The GCF is confronted with the problem of insufficient financing, and currently developed countries lack clear-cut rules or trajectories for raising their climate finance contributions (Kumar, 2015). The fast-start finance of USD 30 billion from 2010 to 2012 was collected through voluntary country pledges without clear modalities for distributing the contributions. While this approach may be considered pragmatic for providing modest short-term contributions, it could lead to disputes among donor countries and potentially interrupt contributions for greater amounts close to USD 100 billion in the long run (Cui, Zhu, Springmann, & Fan, 2014). Establishing a clear method for allocating the finance responsibilities among developed countries may contribute to stabilizing the finance contributions, and the final modalities of such an allocation method would be subject to political negotiations among them.

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The present study focuses on burden-sharing schemes for financing the GCF. This study was conducted based on two perspectives: historical emissions responsibility (HR) and ability to pay (AP). In addition, lessons from three main international financing mechanisms, namely, the United Nations (UN) membership dues, the Official Development Assistance (ODA), and the Global Environment Facility (GEF), are adopted to obtain five single-principle schemes for raising the GCF. Considering that different countries may have different preferences, the Preference Score Compromises (PSC) approach is introduced to weigh different single-principle schemes and thus obtain 31 composite schemes. We also evaluate the effectiveness of the proposed schemes by comparing them with the GCF initial resource mobilization from 2015 to 2018. The remainder of this paper is organized as follows: Section 2 presents the literature review, Section 3 introduces the five single-principle schemes for financing the GCF, Section 4 elaborates on how the GCF should raise fund on the basis of the PSC approach, Section 5 evaluates the effectiveness of the proposed schemes, Section 6 provides the sensitivity analysis, and Section 7 presents the conclusions and policy implications.

2. Literature review

Interest in the GCF has markedly increased since the 2009 Copenhagen Accord. The literature review elaborates on three aspects: the first category relates to how the GCF should raise funds; the second category relates to the distribution of the GCF among numerous developing countries; and the third category relates to balancing the usage of the GCF between mitigation activities and adaptation activities.

First, many researchers regard climate finance as the core issue of climate change and that the future and destiny of the GCF depend on how developed countries could finance its funding (Donner, Kandlikar, & Zerriffi, 2011; Hannam, Liao, Davis, & Oppenheimer, 2015). This issue has attracted widespread attention, the discussion of which can be divided into three parts. The first part focuses on the financial instruments and channels for raising the GCF. For example, Hof, den Elzen, and Mendoza Beltran (2011) assess four proposals including auctioning emission allowances, tax on international aviation and shipping emissions, global carbon tax, and emissions trading levy to generate funds for the GCF; Jakob, Steckela, Flachsland, and Baumstark (2015) evaluate the potential magnitude of financial transfers from developed countries to developing countries by establishing the global carbon market; Horsch and Richter (2017) propose the issuance of climate bonds to increase climate finance, where future generations repay the bonds while reaping the benefits of the enacted climate mitigation policies. In addition to public finance, the role of the private sector in climate finance has also been discussed. Ockenden, Warrander, Eales, and Streatfeild (2012) consider methods to catalyze private investment using the public finance and propose a number of financial instruments, such as equity investments, debt financing, guarantees, direct subsidies, and so on. In general, although numerous financial instruments have been proposed for raising the GCF, most of them are mere conceptual analyses, lacking the empirical aspect. The appropriate financial instruments remain undetermined.

The second part of the discussion focuses on potential burden-sharing schemes for financing the GCF. The majority of scholars believe that the scheme should be designed based on both historical responsibility and economic capacity. Dellink *et al.* (2009) discuss the principles that guide a fair international burden-sharing scheme, including the political principles of historical responsibility and capacity to pay, as well as how they can be used to assign financing burden to individual countries. Cui *et al.* (2014) introduce

the PSC approach, which is based on environmental responsibility and economic capacity and identifies the United States (USA) and the European Union (EU) as the two largest contributors. Pickering, Jotzo, and Wood (2015) explore how varying degrees of international coordination may influence the fairness of the global financing effort. They find that a broader group of contributors may only slightly improve adequacy or equity unless it can converge on credible measures of responsibility and capacity. In general, although many scholars discuss the issue of how the GCF should raise funds, the proposed schemes or methods remain under study. In addition, although lessons from existing international financing mechanisms have not been summarized, they could provide a valuable reference for raising the GCF.

The third part focuses on the factors influencing national positions on climate finance. These studies mostly consist of qualitative analyses, which demonstrate the importance of bureaucratic politics for negotiation positions. Harrison and Sundstrom (2007) focus on the domestic drivers of mitigation policy and negotiation positions for the Kyoto Protocol. They argue that electoral incentives, normative commitments of policymakers, and political institutions may affect the bargaining positions of developed countries. Bailer and Weiler (2015) discuss the effect of different factors, including democratic structures, economic power, and domestic drivers on negotiating positions concerning mitigation finance and emissions reduction targets. Their findings suggest that developed countries can more easily “pay off” developing countries by promising mitigation payments than burdening their domestic industries with serious reduction targets. Halimanjaya and Papyrakis (2015) examine the links between donor country characteristics and the amount of aid allocated to activities related to climate change. Their findings indicate that the share of environmental expenditure positively affects the amount of aid committed to tackle climate change while paradoxically, wealthier donors seem less generous in terms of climate aid. Pickering and Mitchell (2017) identify domestic and international factors that may affect Australia’s support for climate finance. The results indicate that the political orientation of the government explains some but not all variations in Australia’s stance on climate finance and that international peer pressure may strengthen government resolve to support climate finance. The aforementioned study shows that GCF financing is a highly complex issue that involves numerous sovereign states. Domestic drivers include economic ability, public opinion, and government intention, as well as international peer pressure. Bargaining power can also affect national positions on climate finance. These factors also hinder donor parties from reaching an agreement on sharing the burden of financing the fund.

Second, developing countries are the recipients of the GCF, and its distribution among developing countries is discussed in several studies. Grasso (2010) develops a framework of procedural and distributive justice specifically designed for the international funding of adaptation to climate change and argues that the funds raised should be allocated by putting the most vulnerable first. Cui *et al.* (2014) construct an index by considering regional economic ability and climate damage to reflect the degree of capital shortage for climate adaptation activities; the results reveal that African countries with high levels of climate vulnerability could obtain the most funds. Halimanjaya (2015) assesses the relationship between the characteristics of developing countries and the amount of official climate mitigation finance inflow; the empirical results indicate that developing countries with higher CO₂ intensity, larger carbon sinks, lower per capita gross domestic product (GDP), and good governance tend to be selected as recipients of climate mitigation finance and receive relatively more of it. Several approaches have been proposed to allocate the funds among developing countries; regardless, they are still under study, and no specific scheme has been applied.

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