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Vulnerability, good governance, or donor interests? The allocation of aid for climate change adaptation

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ABSTRACT

Developed countries provide increasing amounts of aid to assist developing countries adapt to the impacts of climate change. How do they distribute this aid? While donors agreed to prioritise "particularly vulnerable" countries, we know from the general aid allocation literature that donors (also) use aid as a foreign policy tool to promote their own economic and political goals. In this paper, we analyse data on bilateral adaptation aid from 2010 through 2015 to assess to what extent adaptation aid is provided in response to recipient need (that is, vulnerability to climate change impacts) as opposed to recipient merit (that is, good governance) and donors' interests. In contrast to previous research, we find that donors partly take into account vulnerability to climate change. Countries that are physically more exposed to climate change tend to be more likely to receive some adaptation aid and also receive more adaptation aid per capita, as do poorer countries, small island developing states and—to a lesser extent—least developed countries. Countries with lower adaptive capacity, however, do not receive more adaptation aid; instead, donors reward well-governed countries with adaptation aid as well as use adaptation aid to promote their own economic interests. Furthermore, adaptation aid flows very closely follow general development aid flows. The extent to which adaptation aid is new and additional thus remains unclear.

1. Introduction

Certain climate change impacts are no longer avoidable; adaptation—"the process of adjustment to actual or expected climate and its effects" (IPCC, 2013, p. 1758)—is hence urgently needed, and nowhere more so than in the Global South. Developing countries, while having contributed the least to global greenhouse gas emissions, bear the brunt of climate change impacts, and at the same time have the least resources to cope and adapt. Recognising this "double injustice", developed countries agreed in the 1992 United Nations Framework Convention to Climate Change (UNFCCC) to assist "particularly vulnerable" developing countries to adapt to climate change (UNFCCC, 1992, Article 4.4). At the 2009 Copenhagen Summit, developed countries confirmed this commitment and put forward concrete numbers for the first time. Beyond US$30 billion so-called fast-start finance for the period 2010 through 2012, developed countries pledged to "mobilise" US$100 billion in "new and additional resources" every year for both mitigation and adaptation in the Global South by 2020 (UNFCCC, 2009, Decision 2/CP.15, para. 8). The Paris Agreement repeated this 100-billion-target and specifically called on developed countries to "significantly increas[e] adaptation finance" (UNFCCC, 2015, Preamble, para. 114).

Adaptation finance, much more so than mitigation finance, is largely drawn from public aid budgets (Khan & Roberts, 2013). While this raises questions regarding the additionality of adaptation finance to regular development assistance (a point highlighted by vulnerable developing countries), there are clear synergies between adaptation and development (Ayers & Abeysinghe, 2013; Ayers & Huq, 2009). We focus on bilateral development aid targeting adaptation, or adaptation aid, which comprises the largest share of global adaptation finance (Ayers & Abeysinghe, 2013; Weikmans, 2016).

Who receives bilateral adaptation aid? In principle, there is widespread agreement in policy and academic discourse that those "particularly vulnerable" to the adverse effects of climate change should be prioritised (Barr, Fankhauser, & Hamilton, 2010; Duus-Otterström, 2016; UNFCCC, 1992, 2009; van Renssen, 2011). In practice, research of development aid as well as adaptation aid suggests that donors use aid to further their own economic and political interests as well as to reward recipients for good

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governance and "good" (economic) policies (e.g. Alesina & Dollar, 2000; Berthélemy, 2006; Clist, 2011b; Robertsen, Francken, & Molenaers, 2015; Robinson & Dornan, 2016; Younas, 2008).

Here, we test various models of aid allocation. We assess to what extent donors allocate adaptation aid to countries that are vulnerable to climate change (that is, based on recipient need) or to countries that are of economic or political interest to the donor (that is, based on donor interests). We also test whether recipient merit plays a role in adaptation decisions, given the potential for institutions and policies to facilitate effective adaptation. Unlike previous studies, our analysis uses a dyadic dataset covering adaptation aid flows from 2010 through 2015 across all donors and all recipients reported in the OECD Creditor Reporting System. Following Cragg (1971), we use a two-stage model so as to distinguish between the decision to provide adaptation aid to a recipient country (the selection stage) and the decision as to how much aid is distributed to those selected recipient countries (the allocation stage). In line with previous studies, we find that donors take into account their own (economic) interests as well as recipients' governance when allocating adaptation aid. In contrast to previous studies, we further find that donors also consider vulnerability, notably the physical component of vulnerability. Countries that are physically more vulnerable to climate risks are more likely to receive adaptation aid and also tend to receive higher levels of adaptation aid per capita. Finally, adaptation aid flows closely follow overall development aid flows. To what extent support for adaptation is thus new and additional to official development assistance, as agreed internationally, is questionable.

2. Literature review and expectations

A large and growing literature examines how donors allocate their development aid. McKinlay and Little (1977) and Dudley and Montmarquette (1976) were the first to distinguish between two different models of aid allocation: recipient need or economic assistance on the one hand, and donor interests or foreign policy on the other. According to the recipient need model, donors provide aid mainly to alleviate poverty in recipient countries, driven by "the simple desire to help the less fortunate" (Dudley & Montmarquette, 1976, p. 132). In contrast, according to the donor interest model, donors use aid instrumentally to promote their own economic, political or security interests. These two models lead to divergent expectations about which countries receive more aid. While we would expect that poorer countries receive more aid in a recipient need model, it is countries that are economically or politically important, for instance large trading partners or political or military allies, that receive more aid in a donor interest model.

In the 1990s, a third model of aid allocation was added: recipient merit. According to this model, donors provide higher levels of aid to recipients with "'good" institutions and policies in place. There are two reasons donors might provide higher levels of aid to countries with 'good' institutions and policies: (i) as a reward or way of incentivising the replication of such policies or institutions, or (ii) for the pragmatic reason that aid is considered more effective in well-governed countries and in 'good' policy environments (Berthélemy, 2006; Burnside & Dollar, 2000). While there is debate regarding what should constitute "good" institutions or policies, the aid allocation literature has generally adopted existing measures produced by the World Bank (the World Governance Indicators) and various think tanks when testing this model (Freedom House and Heritage Foundation, for example).[1]

[1] These tend to value democratic institutions, political stability, control of corruption, rule of law, and perceptions about the effectiveness of government and regulation.

A large and growing literature has tested these various determinants of aid allocation for overall development aid flows (e.g. Berthélemy, 2006; Clist, 2011b; Hoeffler & Outram, 2011), and increasingly also for specific aid flows, including 'green' or environmental aid (Hicks, Parks, Robert, & Tierney, 2008; Lewis, 2003) and aid for climate change mitigation (Halimanjaya, 2014). Another strand of research, often game theoretical, focuses on allocation of funding across sectors and in particular examines the ideal distribution of climate finance between adaptation and mitigation (Bréchet, Hritonenko, & Yatsenko, 2013; Buob & Stephan, 2013; Eyckmans, Fankhauser, & Kverndokk, 2016).

In the context of adaptation, recipient need means not only poverty but vulnerability to climate change: the more vulnerable a country is to the adverse effects of climate change, the more it needs to adapt, and the more support with adaptation it should receive. However, identifying vulnerable countries is not straightforward (Klein, 2009). The IPCC defines vulnerability as "[t]he propensity or predisposition to be adversely affected" (IPCC, 2013, p. 1758) and emphasizes two key dimensions of vulnerability: sensitivity, or physical predisposition to be affected, on the one hand, and lack of coping and adaptive capacities on the other (Field et al., 2012; IPCC, 2013, p. 1775). A range of indicators have been developed to quantify and compare the level of physical vulnerability to climate risks of different countries (DARA & Climate Vulnerable Forum, 2012; Germanwatch., n.d.; Guillaumont, 2013; Kaly, Pratt, & Mitchell, 2004; Moss, Brenkert, & Malone, 2001; ND-GAIN., n.d.). Some indicators also include adaptive capacity, although it is contested how adaptive capacity can be measured, given the breadth of the concept which includes aspects such as poverty, inequality, education, or infrastructure (Brooks, Adger, & Kelly, 2005; Fankhauser & McDermott, 2014; Yohe & Tol, 2002). Not surprisingly, all indicators of vulnerability have been criticised for conceptual, methodological and/or empirical flaws (Füssel, 2010). Measurements of vulnerability, especially at the national level, inevitably involve political judgement (Barnett, Lambert, & Fry, 2008).

Regardless of the difficulties involved in measuring vulnerability, many authors argue for prioritising the most vulnerable countries from a normative point of view (Duus-Otterström, 2016; Grasso, 2010a, 2010b)—in line with the UNFCCC principles and agreements (UNFCCC, 1992, 2009, 2015). To what extent are vulnerable countries prioritised in practice? Several studies empirically trace the geographic distribution of adaptation funding, for subsets of donors (Betzold, 2015) or of recipients (Robertsen et al., 2015; Robinson & Dornan, 2016), at the aggregate (Betzold & Weiler, 2017) or subnational level (Barrett, 2014, 2015), and for multilateral funds (Persson & Remling, 2014; Remling & Persson, 2015)—but not for all donors and all recipients at the dyadic level as we do in this paper.

Previous studies find only limited evidence that countries or communities that are more vulnerable receive more adaptation aid. If vulnerability has an influence, it is physical sensitivity rather than socio-economic adaptive capacity that is positively related to adaptation aid. Barrett (2014) for instance finds that high levels of physical vulnerability, as well as donor interests, drive adaptation aid distribution across subnational districts in Malawi. In contrast, socio-economic vulnerability is *negatively* related to adaptation aid. He thus concludes that "[t]he poorest, most marginalized, and climate vulnerable districts receive the least adaptation finance within Malawi" (Barrett, 2014, p. 131; see also Barrett, 2014, 2015). Studies that assess how the multilateral Adaptation Fund distributes its funding reach similar conclusions (Persson & Remling, 2014; Remling & Persson, 2015; Stadelmann, Persson, Ratajczak-Juszko, & Michaelowa, 2014). Vulnerability does not seem to be a criterion; rather, the Adaptation Fund approved "projects from high-income and less vulnerable countries with high