CIS WORKING PAPER

Nr. 69, 2011

published by the Center for Comparative and International Studies (ETH Zurich and University of Zurich)

Development cooperation and climate change: Political-economic determinants of adaptation aid

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Abstract

Since the UN Conference on Environment and Development in Rio 1992, bi- and multilateral donors stress that development assistance has increasingly been oriented towards climate friendly interventions. With respect to mitigation, prior analysis indicates that this corresponds to donors' self-reporting but finds little reflection in actual aid allocation. In this paper, we examine the case of adaptation. Based on extensive keyword search and hand-coding on the basis of individual project descriptions, we generate a specific coding system for the relevant adaptation categories of aid activities. After aggregation to a donor-year panel, we obtain a dataset that allows us to empirically test the effect of the international climate negotiation process and of donor-specific political variables that may reflect the development of voters' green preferences, on aid allocated to adaptation.

We find that, as opposed to mitigation aid, adaptation aid is significantly influenced by these factors. While this finding is not in line with donors' own rhetoric, it is well in line with a development-oriented focus of bilateral aid, which leaves the provision of global public goods such as mitigation to other areas of public policy making, and concentrates its climate change related activities on those specifically relevant for the individual recipient country.

Key words: Adaptation, development assistance, public choice

1 INTRODUCTION

Ever since the Rio conference in 1992, combining development and climate related efforts has been an international objective, embodied in the principle of 'common but differentiated responsibilities' (CISDL 2002). Correspondingly, OECD/DAC statistics show a substantial increase in climate mitigation-related aid. However, detailed keyword search in AidData[1] suggests that only about 25% of the corresponding projects are coded correctly by the reporting donors (Roberts et al. 2010, Michaelowa and Michaelowa 2011a). When looking at the actual development of mitigation aid over time, the oil price turns out to be the key major determinant. This has been the case before Rio just as afterwards, with stronger support, e.g., for hydropower plants, biomass and solar energy, whenever the oil price peaked. At the same time, the econometric analysis clearly rejects any positive effect of major landmarks in international climate change negotiations (Rio, Kyoto, Kyoto ratification). Finally, green preferences of the voters seem to matter much more clearly for donors' relabeling of aid activities, than for any substantive change towards mitigation (Michaelowa and Michaelowa 2011a, 2011b).

In this chapter, we will examine whether the same is true for adaptation. We will therefore examine the following questions:

- Has there been a real change in aid activities towards a greater emphasis on adaptation to climate change?
- And if so, what are the major drivers of this effect? Has the change come about as a consequence of the international treaties on climate policy (by increasing the supply of adaptation projects by aid agencies, and the demand for adaptation projects by recipient countries) or, more generally, of a stronger environmental consciousness in donor countries?

It should be noted that adaptation and mitigation differ substantially with respect to key basic characteristics, mitigation being a global public good, and adaptation mainly a regional/local public or even a private good. Only in a few cases such as the development of drought-resistant crops, adaptation takes the same global public good character as mitigation. In Section 2, we further discuss this conceptual distinction and its implications for development policy from a normative perspective. In Section 3 we describe the data as well as our coding procedure for adaptation aid. Section 4 presents the econometric analysis and Section 5 concludes.

[1] AidData is a comprehensive new aid database bringing together information from the OECD/DAC Creditor Reporting System and a variety of other sources at the level of individual aid activities ('project"-level).

2 ADAPTATION VERSUS MITIGATION AID: WHY DONORS MIGHT BEHAVE DIFFERENTLY

As we have seen above, donors pretend to respond to the challenges of climate change through a corresponding allocation of development aid, but de facto, mitigation-related aid has not increased in response to either the international climate negotiation process or greener preferences of their electorate. Why should we expect the picture for adaptation-related aid to be any different?

Let us assume that a donor agency's prime objective is the reduction of poverty in the world. Given the high vulnerability of many poor countries, climate change mitigation certainly contributes to this objective. At the same time, other aid activities may have an even stronger impact in this respect. This raises the questions of priorities (see also Michaelowa and Michaelowa 2007).

In addition, since mitigation is a global public good, by definition, it does not matter where mitigation takes place. The effect of one tonne of emission reduction is the same regardless of where it takes place. If two countries have the same needs and preferences, the benefits will be identical. Therefore, it does not matter whether a given amount of emissions is reduced in the country itself, in Switzerland, in the United States, or anywhere else in the world. The principle of non-excludability ensures that Mali cannot be exempted from the benefits of mitigation in the United States, and the principle of non-rivalry ensures that Mali will not benefit less if other countries benefit simultaneously. When the benefits are not higher if mitigation happens in Mali itself, why should we even speak of aid to Mali in this case? Since the location of the implementation is independent of the benefits, Mali is no more a distinct beneficiary of this measure than any other country.

Of course, there can be local benefits attached to the global public good of mitigation. For instance, a reduction of fossil fuel use will reduce local pollutants such as dust and SO_2. However, usually there exist a number of cheaper alternatives for the reduction of local pollutants, e.g. filters. Generally, the local benefits are – if they exist at all – only a minor side effect which we will not consider further in our discussion.

For adaptation, the situation is different. If Bangladesh adjusts to increased flooding in its delta area, this will not help anyone in Uganda or Peru, and not even those Bangladeshis who live in other areas of the country. Clearly, for adaptation, the public good characteristics of non-excludability and non-rivalry seldom reach beyond the country boarders.

Thus, with respect to adaptation, it makes much more sense to speak of development cooperation with a particular country. And the corresponding activities can be compared to other aid activities suggested for this country and included in the ranking of development priorities. An adaptation activity should then be carried out when it comes up sufficiently high on the list. Given that impacts of climate change are likely to be larger in low-latitude countries and crop yields are likely to decline already at low levels of warming (Schneider et al. 2007), the probability that some adaptation activities will indeed be high on the list is significant. This might be reinforced by the fact that

vulnerability of poor communities is typically much higher than for the population as a whole. Adaptation is thus often seen as strongly poverty-reducing (see Vernon 2008).

In contrast, with respect to mitigation, any such comparisons would have to happen at the global level. Given the magnitude of mitigation activities required to achieve a significant impact on poverty reduction, for many developing countries other activities would certainly enjoy a higher priority. Calculating this in detail would be extremely complex and, in practice, certainly go beyond the capacity of any development agency. Typically, donors first decide about their central partner countries (on the basis of poverty considerations, cultural and political relations, geostrategic reasoning, or economic interests), and then determine individual activities within these countries.

A development agency faithful to its key objective of poverty reduction may thus have reasons not to engage in mitigation activities, and yet engage in adaptation. The willingness to engage in adaptation may be reinforced by the fact that on the demand side, recipient countries will also request adaptation rather than mitigation. The reasons are just the same: Adaptation has a much more direct effect for the country concerned than mitigation, apart from the minor side effects mentioned above.

As a consequence, the aid agency may try to gain public support by adopting a strong climate change rhetoric, and by reporting all types of climate-related projects, but effectively only focus on adaptation.

Since the international climate negotiation process has raised the awareness aid agencies, governments and the general public on the relevance of protecting people in poor countries against climate change related natural hazards and disasters, we can expect this process to have had an impact on adaptation aid, even if it did not have any on mitigation aid. More specifically, following the earlier work on mitigation aid (Michaelowa and Michaelowa 2011b), we consider that there may be a direct or an indirect impact of the Rio summit with its agreement on the UN Framework Convention on Climate Change (UNFCCC) and the following (and still ongoing) international negotiations on the mitigation of climate change, which led to the signing of the Kyoto Protocol in 1997 and its entry into force in 2005. Any direct impact should be reflected in a clear difference between sectoral aid allocations before and after 1992, 1997 and 2005. An indirect effect could work via these negotiations and subsequent debates shaping public and government's preferences in donor countries. These indirect effects as well as possible lags linked to the time required to raise public awareness may of course make it more difficult to attach the effect to the individual years. Nevertheless, these years should mark structural shifts in the relevance of climate policy.

In addition, there may be an effect related to the general environmental attitudes in the donor countries, reflected in government composition or vote shares of environmental parties. We expect government and parliaments with green preferences to more closely follow the climate negotiation process and thereby to achieve stronger awareness of the adaptation problem. Therefore, we should expect changes in aid allocation for adaptation to follow changes in donor government composition, or, alternatively, in the vote share of environmental parties. Obviously, we would expect this effect to be smaller than the one for mitigation, given that mitigation contributes to preservation of

the environment, whereas adaptation only reduces the negative impacts of environmental change. Yet given that the final aid allocation is determined within the aid agencies, which according to our discussion above could have a general preference for adaptation over mitigation aid, even a somewhat milder public pressure for adaptation might have a noticeable effect.

We thus formulate the following hypotheses:

H1: With every new international climate policy agreement donors increase aid to adaptation.

H2: Greener donor government preferences lead to higher aid for adaptation.

H3: Greener public preferences in donor countries lead to higher aid for adaptation.

The following section will present the data on the basis of which these hypotheses will be tested.

3 THE DATA

AidData (2010) provides information for over 750,000 aid activities for 21 bilateral DAC donor countries starting in the 1970s. Our dependent variable is the share of adaptation activities in total aid. We calculate this share both in terms of project numbers and in terms of financial commitments. Detailed project descriptions enable us to specify projects according to all relevant project categories.

Our coding procedure was based on the following three steps (Michaelowa and Michaelowa 2011a, Appendix 1):

First, we decided about a comprehensive list of keywords relevant in the context of climate change adaptation. Besides the direct use of the keyword 'adaptation', strengthening of resilience against and relief of impacts of meteorological extreme events was looked at with the keywords 'flood', 'drought', 'storm' (including cyclone, hurricane, typhoon), as well as 'disaster', 'urgency', 'compensation'. The setup of early warning and meteorological coordination systems was also included. Moreover, dyke / sea wall projects as well sea-level-related projects were looked at. Resource availability improvement integrated rural development projects were also included if they strengthened overall resilience or led to a better management of water / agricultural resources, even if they did not have an explicit disaster-related component.[2] We purposefully chose a wide range of terms to ensure that all activities that would today be

[2] The following adaptation-related keywords were entered into the AidData search engine: Adaptation, early warning, disaster, compensation, insurance, dyke, seawall, resource, *ressource*, relief, *urgence*, urgency, *inondation*, inundation, flood, rehabilitation, river, drought, storm, cyclone, hurricane, typhoon, dry, sea level. The list also includes some French terminology (in italics) since not all project descriptions were translated into English. As we did not do a search for all terms in all possible languages, however, some projects that only had non-English terminology are likely to have been overlooked.

considered as adaptation will also be taken into account in earlier periods, where the adaptation vocabulary did not exist.

Second, we manually assessed the actual relevance of these aid activities to exclude those that did not actually contribute to adaptation. This procedure led us to delete the vast majority of aid activities because the keywords appeared in a different context. Choices were not always obvious, however. While it is simple to exclude non-meteorological disasters such as earthquakes, tsunamis or civil war, it is much more difficult to assess whether a resource-related project can be seen as a resilience-enhancing activity. Especially regarding water resources, frequently projects relate to digging a few wells. Such projects with a limited scope were excluded; this required a subjective case-by-case decision. Another problem could be that the terminology used to describe aid projects might have changed over time so that certain projects in earlier years may have escaped our attention. However, this effect should also be limited through our effort to keep the range of keywords sufficiently large.

Finally, we double checked the mismatches between our coding and the donors' own classification of projects when reporting to the OECD/DAC (Michaelowa and Michaelowa 2011a). We thus tried to reduce the risk that any project was omitted in our coding simply for having escaped our initial mechanical search procedure. This led us to reconsider a total of 8 854 projects which did not previously appear in our list of climate-relevant aid activities. Where necessary, our own adaptation codes were revised accordingly.

Eventually, mean values across individual aid activities were computed for all donor-year combinations to obtain the final variables, i.e., adaptation-related activities as a share of total aid activities and as a share of total commitments, by donor and year. The descriptive statistics below illustrate the composition of these variables and their variation over time.

Table 1 provides a break-down of adaptation aid by type of adaptation considered (across all donors and years). On average, the share of adaptation in total development assistance is below 1%, but this average hides strong differences between countries and over time. For both 1983 and 1984, the United Kingdom's share of adaptation projects within overall aid activities is over 20%. Other donor-year combinations where adaptation aid exceeds 10% of either aid activities or commitments are Ireland (2008), Japan (1998, 1999), and again the United Kingdom (1987).

Adaptation commitments are about evenly spread between water related (avoided flooding, but also measures to cope with drought), resource related, and disaster related adaptation. The latter appears much stronger in terms of aid activities, accounting for almost half of all adaptation projects. This reflects that many of the emergency activities are relatively small in terms of aid volumes.

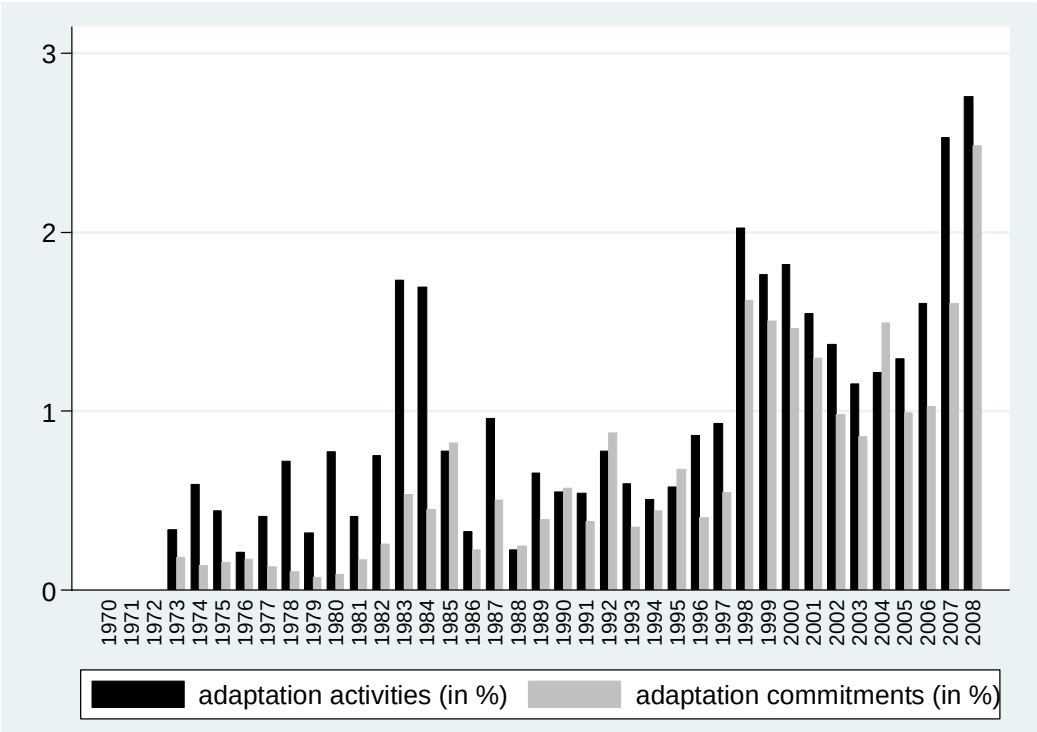
Table 1: Adaptation aid by type of adaptation, 1970-2008

	Mean	Std. Dev.	Min	Max
Share of aid activities (in %)				
Adaptation, total	0.92	1.78	0	23.39
-water related	0.29	0.64	0	7.38
-wind related	0.12	0.36	0	3.90
-resource related	0.23	0.49	0	5.95
-disaster related	0.41	1.50	0	23.39
-other	0.03	0.21	0	4.41
Share of commitments (in %)				
Adaptation, total	0.72	1.24	0	13.90
-water related	0.25	0.59	0	6.53
-wind related	0.08	0.29	0	4.71
-resource related	0.24	0.63	0	9.47
-disaster related	0.22	0.74	0	13.78
-other	0.03	0.18	0	2.75

Source: AidData (2010), authors' coding.

Figure 1 shows the development of adaptation aid over time, both in terms of project shares and in terms of commitment shares. The data again show that so far, adaptation plays only a relatively limited role in development cooperation. However, we observe a general upward trend in adaptation aid, despite strong inter-annual variability throughout most of the observation period, with shares ranging from below 0.5% to almost 3%.

Figure 1: Adaptation aid as a share of total development assistance



Note: The nil-values for 1970-1972 may not be representative since the overall number of aid activities covered during these years is extremely small. The same is true for the overall volume of commitments.
Source: AidData (2010), authors' coding.

The variability is mainly due to projects established to support victims of meteorological extreme events. For example, hurricane Mitch which devastated Central America in 1998 led to a peak of projects in 1998-2001. The 1992 peak (most clearly visible in the commitment shares) is linked to the 1991 cyclone in Bangladesh that killed 140 000 people and a strong drought in Southern Africa. The 1983-84 peak falls into the driest period of the century in the Sahel. However, since the early 2000s, a clear upward trend can be found that is not linked to specific disasters.

In this paper, we would like to examine whether, over and above the random variation related to meteorological extreme events, there is some variation that can be explained by political-economic variables related to the negotiation process as specified in our hypotheses. We therefore proceed now with the operationalization of our explanatory variables. Green public preferences in donor countries are measured as the percentage of green seats in national parliaments (Armingeon et al. 2008). Environmental preferences of the donor government are proxied by the index of cabinet composition developed by Schmidt (1992) and updated by Armingeon et al. (2008). The index takes on values from 1 (hegemony of right-wing and centre parties), to 5 (hegemony of social-democratic and other left parties). As ecological preferences are only imprecisely reflected on a left-right dimension (Knill et al. 2010, p. 304), the ideal indicator would more closely reflect party positions (e.g., the indicator based on the assessment of party manifestos by Cusack and Engelhardt 2002), but such data is not available for the whole time period under consideration.

To reflect direct policy change in response to international agreements we construct indicator variables for the periods from 1992 (post Rio), from 1997 (post Kyoto), and from 2005 (post Kyoto ratification) onwards.[3]

In addition, we will consider the use of country fixed effects to control for any donor specific characteristics that do not vary over time, and of time fixed effects to control for meteorological extreme events. Moreover, we consider a general time trend. The specification of the econometric model will be discussed in more details in the following section.

4 ECONOMETRIC ANALYSIS

As there can be no negative project shares, the data are censored at zero. This suggests the use of a tobit model. The tobit model assumes that there should be no conceptual difference between the mechanisms determining (1) whether or not there is adaptation aid at all, and (2) if so, which share is being allocated for this purpose. On theoretical grounds, there is no reason to believe that the determinants should be different, and this is confirmed by an empirical testing of separate equations. In addition, tobit might be problematic in panel regressions if we require country fixed effects. As indicated above, such fixed effects need to be considered here, in particular since we do not control for

[3] These indicator variables are dummies taking the value of 1 for all years including and after the respective conference, and zero otherwise.

any specific differences between donors otherwise. However, a Hausman test carried out on the basis of simple linear models consistently suggests that the country effects may be considered as random. This confirms that a tobit model with country random effects can be used in our context.

The following tables present the results of these regressions, which are carried out in an identical way for adaptation aid as a share of total aid activities (table 2) and as a share of total commitments (table 3). In each table, Regression 1 only includes the key explanatory variables required to test our hypotheses, i.e., the dummies reflecting central milestones of the international climate negotiations (to test H1), government composition (to test H2), and the share of green seats in donor parliaments (to test H3). To this base model, regression 2 adds a general time trend (year), regression 3 adds dummies for the meteorological events mentioned above, and regression 4 adds all of these variables jointly. Additional regressions were carried out using year fixed effects, but the latter did generally not turn out to be significant in the context of aid projects, and prevented the convergence of the model in the context of commitments. We thus hope to capture the relevant year effects through the more specific controls we have included in the models.

All regressions without the general time trend provide clear support to Hypothesis 1. Two out of the three landmarks of international climate negotiations are significantly, and positively associated with subsequent aid allocated to adaptation. According to table 2, ceteris paribus, after the Rio conference, the share of aid activities related to adaptation increased by 0.3 percentage points (Reg1a) or 0.4 percentage points (Reg3a). After the Kyoto conference, this share increased by yet another 0.5 percentage points (Reg1a) or 0.4 percentage points (Reg3a). And in Reg3a, the post Kyoto ratification period adds another 0.3 percentage points (not significant in Reg1a). Given the overall share of adaptation aid, these values are substantial. Results for commitment shares in table 3 look pretty similar (see Reg1b, Reg3b).

However, when adding a general time trend in Regressions 2 and 4, it becomes clear that the effect of the negotiation milestones is difficult to disentangle from this general trend. The general upward trend towards greater shares of adaptation aid is highly significant and wipes out the significance of most of the negotiation dummies. Only the post Kyoto period remains positively significant in Reg2a and b, suggesting an effect of the Kyoto conference over and above the general trend. Conversely, the dummy indicating the period after the ratification of the Kyoto Protocol becomes negatively significant in Reg2b suggesting that the overall positive Kyoto effect is reduced to 0.06 percentage points (0.21-0.15) after ratification, and thus becomes hardly distinguishable from the general time trend.

Table 2: Tobit regressions on adaptation aid as a share of aid activities (in %)

	Reg1a	Reg2a	Reg3a	Reg4a
Year		0.046***		0.047***
Post Rio	0.323***	-0.213	0.419***	-0.174
Post Kyoto	0.498***	0.213*	0.394***	0.048
Post Kyoto ratification	0.171	-0.075	0.276**	0.071
Green seats in parliament (in %)	0.033*	0.010	0.031*	0.012
Cabinet composition	-0.041*	-0.038	-0.044*	-0.043*
Hurricane Mitch (1998)			0.212*	0.311**
Cyclone Bangladesh and drought South Africa (1991)			0.332*	-0.126
Drought Sahel (1983-1984)			0.746***	0.625***
Log likelihood	-1123.0	-1104.2	-1108.1	-1091.2
p-value for Wald test	0	0	0	0

Notes:
The total number of observations is 780 (21 donors), out of which 355 are left-censored at 0. The table shows average marginal effects dE(adaptation |adaptation>0)/dx. Significance at the 1, 5, and 10% level is indicated by ***, **, and * respectively. All regressions are calculated with donor random effects. For details on the variables, see Appendix 1.

Table 3: Tobit regressions on adaptation aid as a share of aid commitments (in %)

	Reg1b	Reg2b	Reg3b	Reg4b
Year		0.028***		0.032***
Post Rio	0.298***	0.001	0.331***	-0.034
Post Kyoto	0.385***	0.210***	0.271***	0.037
Post Kyoto ratification	-0.005	-0.151**	0.108	-0.028
Green seats in parliament (in %)	0.005	-0.008	0.003	-0.009
Cabinet composition	-0.013	-0.007	-0.017	-0.011
Hurricane Mitch (1998)			0.241***	0.307***
Cyclone Bangladesh and drought South Africa (1991)			0.231*	-0.043
Drought Sahel (1983-1984)			0.136	0.089
Log likelihood	-765.49	-752.28	-757.88	-743.34
p-value for Wald test	0	0	0	0

Notes:
The total number of observations is 626 (21 donors), out of which 201 are left-censored at 0. The table shows average marginal effects dE(adaptation |adaptation>0)/dx. Significance at the 1, 5, and 10% level is indicated by ***, **, and * respectively. All regressions are calculated with donor random effects. For details on the variables, see Appendix 1.

The question is now what this implies for the overall assessment of Hypothesis 1. Reality does not quite follow the exact stepwise increase implied by the formulation that donors increase aid to adaptation with every new international climate policy agreement. The time trend together with the dummies for different time periods (including both negotiation periods and periods with meteorological extreme events) provide a more appropriate functional form for the development of adaptation aid over time. While this is inconsistent with the idea of clear jumps related to individual milestones of the negotiation process (apart from the Kyoto conference where this effect is significant), it is consistent with the idea that the negotiation process led to a general awareness rising about the relevance of adaptation in developing countries thereby leading to an increase in the share of aid allocated to adaptation. The simple dummies do not capture that it may take time for a change to set in, so that the increase is somewhat smoothed out over time. Let us take the example of the period starting with the early 2000s. Already in Figure 1, we noticed a clear upward trend unrelated to natural hazards. This coincides with a period in which adaptation played an increasingly important role as a topic within the negotiation process. This is obviously much better captured by a time trend than by a simple dummy variable for the period post 2005 (Kyoto ratification).

Thus, while H1 cannot be fully upheld in the details of its formulation, the empirical evidence is consistent with the essence of the argument that the international climate negotiation process comes along with changes in development assistance towards more aid for adaptation.

When it comes to the effect of greener public preferences as measured by the percentage of green parliamentarians (H3), we observe a similar effect, albeit only in table 2. Green public preferences do not seem to matter for the share of the aid volume committed to adaptation, but they turn out to be significant for the share of aid activities (Reg1a and Reg3a). In these regressions, an increase in green seats in parliament (as an indicator of general public environmental preferences) by 10 percentage points is associated with an increase of adaptation aid by 0.3 percentage points. Given that adaptation as opposed to mitigation is not at the centre of environmental interest, this outcome is remarkable, even if the result is significant only in some regressions. However, again, the introduction of the time trend in Reg2a and 4a supersedes this effect. This is a problem of collinearity as green parties have improved their vote shares over time.

Thus in a way, the time trend is able to capture national as well as international moves towards greater environmental sensitivity. Only in those models without the general trend, these developments can be distinguished.

While Hypotheses 1 and 3 can thus be partially confirmed by the empirical evidence, this is not the case for Hypothesis 2, at least if left-wing governments are considered as an acceptable proxy for green donor government preferences. Surprisingly, the computed marginal effect of left-wing governments is consistently negative, and significant in most regressions in table 2 (Reg1a, Reg3a, and Reg4a). This effectively implies that conservative governments tend to give a higher priority to adaptation projects within total aid. This might be explained by conservative governments being less enthusiastic regarding mitigation, while wanting to cater for global shifts in

preferences. As already noted above in the context of green public preferences, for adaptation commitments (table 3) national politics in the donor countries appears to be less relevant. Maybe in a small field such as adaptation aid, to please the local voters, it is initially more important to be able to name a few interventions, rather than to report their financial volumes.

5 CONCLUSIONS

Since the UN Conference on Environment and Development in Rio 1992, bi- and multilateral donors stress that development assistance has increasingly been oriented towards climate friendly interventions. With respect to mitigation, prior analysis indicates that this corresponds to donors' self-reporting but finds little reflection in actual aid allocation. Mitigation aid is driven primarily by the oil price, and political-economic variables do not play any role.

Using tobit regressions based on a self-coded panel dataset for adaptation aid, we find that the situation is different here. As opposed to mitigation aid, adaptation aid (as a share of total commitments and of total aid activities) shows a clear upward trend over time. While specific political influences on this development are difficult to disentangle from a general time trend, the evidence is consistent with the interpretation that this trend is driven by the increasing relevance of the topic at international climate negotiations. This interpretation is also consistent with the significance of the post-Rio and post-Kyoto variables, at least in those regressions in which the general time trend is not added to the explanatory variables. For adaptation aid as a share of aid activities, the increase of green preferences within donor countries also seems to contribute to the positive trend. Finally, conservative governments tend to give a higher priority to adaptation within total aid, which might be explained by their more critical stance with regard to mitigation.

We interpret this as the effect of a significantly increased awareness of climate change-related issues following the international negotiation process, which is reflected by the activities of aid agencies in the context of adaptation much more than in the context of mitigation.

While these results do not fully support our hypotheses, they show the relevance of political variables for the allocation of adaptation aid and the dynamics of adaptation aid over time. Its share has about doubled since the early 1990s, and at least tripled since the late 1970s. While at less than 3% of total aid, there is no need to fear that adaptation aid may in the foreseeable future dominate development cooperation, this is a remarkable development, and totally different from what we observe for aid allocated to mitigation activities.

While the limitation of climate aid dynamics to adaptation is not in line with donors' own rhetoric, it is well in line with a development-oriented focus of bilateral aid. Adaptation is much more clearly linked to the needs of any individual recipient country and can be easily compared to alternative interventions in that country in terms of its

relevance to poverty alleviation. Climate change mitigation, however, is a global public good and may be implemented, with the same effect for the developing world, in the United States, Australia, or Switzerland. From a development perspective, there is thus little reason to carry out the implementation in, say, Mali, and to label this activity 'development assistance'.

While inconsistent with their rhetoric, donor behaviour thus turns out to be consistent with the central mission of their activities. They leave the provision of global public goods such as mitigation to other areas of public policy making, and concentrate their climate change related activities on those areas specifically relevant for their partner country.

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7 APPENDIX: VARIABLE DESCRIPTIONS AND SOURCES

Variable	Source
Adaptatation, project share (in %)	AidData (2010) / authors' coding
Adaptation, commitment share (in %)	AidData (2010) / authors' coding
Post Rio: dummy (=1 if year≥1992, =0 otherwise)	
Post Kyoto: dummy (=1 if year≥1997, =0 otherwise)	
Post Kyoto ratification: dummy (=1 if year≥2005, =0 otherwise)	
Year (=annual trend variable, 1970-2008)	
Hurricane Mitch (dummy = 1 if year=1998, =0 otherwise)	
Cyclone Bangladesh and drought South Africa (dummy=1 if year=1991, =0 otherwise)	
Drought Sahel (dummy=1 if year =1983 or 1984, , =0 otherwise)	
Green seats (share of seats in the national parliament, in %)	Armingeon et al. (2008)
Cabinet composition (Schmidt-index: from 1: hegemony of right-wing and center parties, to 5: hegemony of social-democratic and other left parties)	Armingeon et al. (2008) following Schmidt (1992)