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# **Do Aid Donors Coordinate Within Recipient Countries?**

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## Abstract:

Aid fragmentation and a lack of donor coordination have been widely recognized as principal problems impairing the effectiveness of aid. In particular, the importance of within-country division of labor has been highlighted in recent years. At the same time, rigorous quantitative analyses of within-country aid coordination are largely missing. Taking the whole donor pool (including NGOs) within an aid recipient country into account, we examine the coordination behavior of donors across regions and sectors. Our results indicate a modest degree of donor coordination within Cambodia, even after the 2005 Paris Declaration. In particular, the coordination efforts among bilateral donors seem rather limited, suggesting that their political and economic interests prevent closer coordination. With respect to the behavior of NGOs, we find them to be mainly active in the same regions and sectors as official donors, creating coordination problems between the two groups of donors. In addition, NGOs appear to cluster in the regional-sectoral space although there seems to be some sort of coordination among them.

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Keywords: donor coordination, bilateral donors, multilateral donors, international NGOs, national NGOs, Cambodia

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<sup>§</sup> Heidelberg University, Alfred-Weber-Institute for Economics, Bergheimer Strasse 58, 69115 Heidelberg, Germany, e-mail: [hannes.oehler@awi.uni-heidelberg.de](mailto:hannes.oehler@awi.uni-heidelberg.de).

## 1. Introduction

Recent international summits on the effectiveness of aid have put much emphasis on aid fragmentation and donor coordination. The Paris Declaration in March 2005 has outlined harmonization as one of the five principles to make aid more effective; donors committed themselves to more coordination in order to reduce duplication of aid efforts. The subsequent Accra Agenda for Action in 2008 has continued in this direction and emphasized that the division of labor among donors can be achieved “through improved allocation of resources *within* sectors, *within* countries, and across countries” (OECD 2008, §17, italics added).

Aid allocation and donor coordination on a regional and sectoral level within recipient countries have largely been neglected in the academic literature. According to the results of cross-country studies, donors are typically criticized for prioritizing their political and commercial interests and for neglecting the needs of the recipient countries when deciding on how to allocate aid (e.g., Alesina and Dollar 2000). Furthermore, studies on donor coordination conclude that aid allocation on a country level is largely uncoordinated between the different donors (e.g., Klasen and Davies 2011). However, the (more) important question of how aid funds are used within recipient countries is largely neglected. In fact, donors typically argue that studies on aid allocation across recipient countries do not capture their poverty focus within countries; in particular, high income inequality within many countries often implies that poverty affects large segments of the population (Nunnenkamp et al. 2012). More relevant for this study, duplication of aid efforts mainly occurs at the regional and sectoral level within recipient countries.<sup>1</sup> This leads to the well-known problems regarding aid fragmentation and a lack of donor coordination. Among them are high transaction costs (Acharya et al. 2006; Anderson 2011), administrative burden (Kanbur 2006, Lawson 2009, Roodman 2006), public administration being deprived of their best staff (Knack and Rahman 2007), blurred responsibilities among donors leading to a tragedy of the commons, moral hazard, and free rider problems (Dreher and Michaelowa 2010).

Since various projects are sector-specific and limited to particular regions within recipient countries, a disaggregated analysis on a regional and sectoral basis seems necessary to evaluate donor coordination.<sup>2</sup> Empirical studies have largely overlooked this issue so far. The costs of

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<sup>1</sup> Lawson (2010) provides some examples: oversupply of insecticide-treated bed nets in one region while the people in another region receive none; or geological surveys for a road or water project in a specific region conducted by more than one donor.

<sup>2</sup> Even in a relatively small country such as Cambodia, only about half of all projects by official donors in 2000-2007 are considered nation-wide projects.

coordination failure could have been overestimated if coordination at a regional-sectoral level actually occurred. On the other hand, “if donors are not only failing to coordinate at a national level, but also sub-nationally, the costs of failed coordination could be even higher than currently estimated” (Powell and Findley 2011: 3). The scarce literature analyzing donor coordination on a more disaggregated level than merely across recipient countries consists of Aldasoro et al. (2010), Nunnenkamp et al. (2013) and Powell and Findley (2011). The latter look at coordination between the World Bank and the African Development Bank across regions within six recipient countries in Sub-Saharan Africa. In contrast, Aldasoro et al. (2010) and Nunnenkamp et al. (2013) employ sector-specific aid data at the recipient country level to assess coordination between 19 major donors.<sup>3</sup> However, these studies likely fail to properly identify duplication of aid efforts. Arguably, the fact that two donors are active in the same region within a recipient country does not imply aid duplication if the two donors are active in different sectors. The same applies in cases where two donors are active in the same sector but in different regions of a recipient country.<sup>4</sup>

The present study contributes to closing these gaps. First, we evaluate the coordination behavior of donors in the regional-sectoral space within a recipient country, i.e., Cambodia. More precisely, we consider at the same time the regional *and* sectoral dimension of projects and assess whether donors take active projects by other donors into account when deciding on whether to start a project in a given region and sector. Second, the exceptionally comprehensive database on aid projects in Cambodia allows us to consider the whole pool of donors active in the country, including China as an important emerging donor as well as numerous international (and Cambodian) non-governmental organizations (NGOs). Donor countries outside the Development Assistance Committee (DAC) of the OECD and NGOs have largely been neglected in donor coordination studies although they have become important development actors in the last few decades. Arguably, the severity of the coordination problem between official donors and NGOs depends on whether the two groups tend to be active in different regions and/or sectors or whether their aid allocation pattern is relatively similar.<sup>5</sup>

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<sup>3</sup> Including EU institutions, the International Development Agency (IDA) and 17 major bilateral DAC donors.

<sup>4</sup> Furthermore, in the case of Powell and Findley (2011), the results may be biased because the other donors present in the recipient countries are not taken into account. For instance, a cluster of World Bank and African Development Bank projects in one area and no projects in another area does not necessarily imply a lack of coordination between the two donors. Possibly, the neglected area by the World Bank and the African Development Bank is covered by other donors implying that an engagement by the aforementioned donors is not necessary in this area.

<sup>5</sup> Again, studies on this question only exist in a cross-country context (e.g., Dreher et al. 2012b).

Our results indicate a modest degree of donor coordination within Cambodia, before as well as after the 2005 Paris Declaration alike. In particular, the coordination efforts among bilateral donors seem rather limited, suggesting that their political and economic interests prevent closer coordination. With respect to the behavior of NGOs, we find them to be mainly active in the same regions and sectors as official donors, implying coordination problems between the two groups of donors. In addition, NGOs appear to cluster in the regional-sectoral space although there seems to be some sort of coordination among them.

The structure of the paper is as follows: In Section 2 we derive our hypotheses from the related literature. Section 3 gives a descriptive analysis of the aid landscape in Cambodia and introduces the method employed. Empirical results are presented in Section 4, while Section 5 concludes.

## **2. Hypotheses and related literature**

### *Bilateral and multilateral official donors*

Aid fragmentation and the lack of donor coordination have been widely recognized as principal problems impairing the effectiveness of official aid (e.g., Easterly 2007, Knack and Rahman 2007, Morss 1984).<sup>6</sup> The literature evaluating donor coordination, however, mainly consists of cross-country studies: Berthélemy (2006a) uses aid by other official donors as an explanatory variable when analyzing the allocation decisions by individual donors. He argues a negative coefficient to imply that donors coordinate with each other. According to Berthélemy (2006a), the coefficient switches sign from significantly positive to significantly negative once donor country fixed effects are accounted for. In contrast, Klasen and Davies (2011) find a significantly positive coefficient by taking the endogeneity of aid by other donors into account.<sup>7</sup> Frot and Santiso (2011) also find evidence for herding among donors when applying a method used in the literature on financial markets. By using a different approach, Mascarenhas and Sandler (2006) come to the clear conclusion that none of analyzed 15 official donors behaved cooperatively when deciding on the allocation of aid. Taken together, the evidence shows that official donors largely fail to coordinate across recipient countries. It is however open to question whether this finding carries over to coordination *within* recipient countries. Analyses employing sector-specific aid data at the recipient country level provide first indications that coordination problems

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<sup>6</sup> The controversy on whether foreign aid has been effective to stimulate economic growth is ongoing (e.g., Rajan and Subramanian 2008, Clements et al. 2012).

<sup>7</sup> They use instruments borrowed from the spatial econometrics literature.

also exist within countries (Aldasoro et al. 2010, Nunnenkamp et al. 2013). Furthermore, Powell and Findley (2011) find a lack of coordination between the World Bank and the African Development Bank in four out of the total of six African countries studied.<sup>8</sup> This leads us to hypothesize:

*H1: Coordination among official donors is largely lacking within recipient countries.*

Taken at face value, the Paris Declaration in March 2005 should have improved donor coordination.<sup>9</sup> Donors agreed to “eliminating duplication of efforts and rationalizing donor activities to make them as cost-effective as possible” (OECD 2005: paragraph 3), acknowledging that aid fragmentation impairs effectiveness while “a pragmatic approach to the division of labour ... can reduce transaction costs” (paragraph 33). Nevertheless, a recent cross-country study finds no improvement in aid fragmentation and donor coordination after 2005 (Nunnenkamp et al. 2013). Analyzing within-country aid fragmentation and donor coordination, the OECD (2011)’s own monitoring comes to mixed conclusions: while aid fragmentation largely increased in the 2005-2009 period, progress has been made in the division of labor in the same period.<sup>10</sup> Therefore, we hypothesize:

*H2: Official donors started to coordinate more within countries after the Paris Declaration in 2005.*

The degree of coordination may differ between bilateral and multilateral donors. It has been widely shown that bilateral donors follow commercial and geo-political motives when deciding on how to allocate their funds (e.g., Alesina and Dollar 2000, Kuziemko and Werker 2006).<sup>11</sup> For

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<sup>8</sup> Note, however, that Powell and Findley (2011) employ a rather different approach than the one used in this study. In particular, they argue that the optimal level of geographic clustering of aid projects depends on how concentrated the need is in the recipient countries. As described in more detail in the empirical analysis, we account for varying needs by including regional-sectoral fixed effects.

<sup>9</sup> Note that data limitations for the most recent years prevent us from testing whether the Accra Agenda for Action in 2008 has been effective in improving coordination among donors.

<sup>10</sup> The OECD (2011) report acknowledges that emerging donors and NGOs are not taken into account in their analysis. A case study by AFRODAD (2007) on Kenya also comes to the conclusion that some coordination efforts can be observed in the last few years; some donors have withdrawn from particular sectors and donors have increasingly used so-called SWAps (sector-wide approaches) and contributed to common basket funds although there are still several lead donors in some sectors.

<sup>11</sup> However, some studies stress the heterogeneity among bilateral donors as some of them are regarded as more “altruistic donors” (e.g., Berthélemy 2006b).

instance, former colonial ties or the War on Terror may urge bilateral donors to keep up their aid efforts.<sup>12</sup> This may prevent them from coordinating with other donors. Although the aid allocation of international organizations such as the World Bank or the IMF also appears to be shaped by the political interests of major stakeholders, most prominently of the US (e.g., Dreher et al. 2009a, 2009b), this seems less pronounced than in the case of bilateral donors. In addition, bilateral donor agencies appear to have more of an interest than multilateral organizations to “plant their flag” in any field where it is highly visible in order to demonstrate their engagement to the tax payers at home and secure future funding (Nunnenkamp et al. 2013).

*H3: Multilateral donors coordinate more than bilateral donors.*

As mentioned above, a recent study shows that bilateral donors react to aid flows from other donor countries by increasing their own aid funds (Klasen and Davies 2011). This occurs particularly in recipient countries where the donors compete economically (in terms of exports) and politically (in terms of UN votes) with each other (Barthel 2012, Curtone 2012). The direct competition between bilateral donors suggests that they are more reluctant to coordinate with each other than multilateral donors. In addition, the focus of some multilateral organizations is restrained to specific sectors (e.g., the Global Fund to Fight AIDS, Tuberculosis and Malaria), which already implies a certain degree of coordination. Indeed, results of cross-country studies show that herding (i.e., the opposite of coordination) among multilateral donors is not as pronounced as in the case of bilateral donors (Barthel 2012, Frot and Santiso 2011). We expect that this finding spills over to coordination within countries.

*H3.1: Multilateral donors coordinate more among each other than bilateral donors do.*

*NGOs*

NGOs are typically not taken into account in studies dealing with aid fragmentation and donor coordination despite being important donors in many recipient countries. The reason is that data on NGO aid are scarce. If data on the aid allocation of international NGOs exist, they typically only cover NGOs based in one particular donor country with funds being allocated across

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<sup>12</sup> See Fleck and Kilby (2010) and Dreher and Fuchs (2011) for the War on Terror’s effect on US aid and aid by other bilateral donors.

recipient countries, with no additional information on how these funds have been used within countries. To assess coordination problems between official donors and NGOs, however, one would need to know whether the two groups tend to be active in different regions and sectors or whether their aid allocation patterns within countries are relatively similar.

The literature points to several reasons why the regional or sectoral focus of NGOs may differ from the focus of official donors. First, NGOs are widely believed to be more poverty oriented than official donors. The latter are often criticized since their projects are widely perceived as failing “to reach down and assist the poor” (Riddell and Robinson 1995: 2). This would imply that NGO activities are concentrated in poorer regions within a particular recipient country and in sectors that are more poverty-related (clean water, basic education, etc.). Second, NGOs are supposed to have a comparative advantage in difficult environments as they can more easily circumvent corrupt local governments and deal with local target groups directly (Riddell et al. 1995). NGOs acting according to their comparative advantage would, therefore, focus on regions with high levels of corruption which are likely to be neglected by official donors. Finally, NGOs are supposed to be more altruistic than official donors, i.e., their aid allocation is less likely to be shaped by commercial or political interests (Nancy and Yontcheva 2006: 3). This could have implications for the choice of both regions and sectors. For instance, NGOs may tend to work more in sectors that are not directly related to commercial interests (e.g., in social services instead of economic infrastructure) or in regions populated by people not representing the political constituency of the ruling recipient government.<sup>13</sup>

*H4.a: NGOs are active in other regions and sectors than official donors, thereby alleviating coordination problems between the two groups of donors.*

Risk aversion, however, may weaken the incentives of NGOs to work in difficult environments where extreme poverty and high levels of corruption decrease projects’ chance of success. NGOs generally need to compete for funds, urging them to allocate aid strategically to where the probability of failure is low (Bebbington 2004). The principal-agent model of Fruttero and Gauri (2005) shows that the dependence of NGOs (the agents) on external funding (from official donors as principals) leads them to abandon their objectives such as poverty alleviation to

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<sup>13</sup> Nunnenkamp et al. (2012) analyze whether the political constituencies of state governments influence the allocation of World Bank projects within India. However, they do not find any significant effect.

some extent in favor of organizational imperatives related to future NGO operations and sustained funding. This occurs even if the principals and agents share the same development objectives. The asymmetric information of the principals on NGO projects implies that NGOs are tempted to produce visible results to assure future funding. Hence, NGOs tend to avoid locations where “the risk of a failure is so high that it could jeopardize the flow of funding from donors” (Fruttero and Gauri 2005: 761). In cases where official financiers tend to favor short-term and quantifiable results, NGOs may be especially reluctant to work in regions with entrenched poverty or in sectors where outcomes are difficult to quantify (e.g., empowerment of certain groups) (Edwards and Hulme 1995). This reasoning invites a counterhypothesis to H4.a. In particular, the aid allocation of NGOs which depend heavily on official financing may not be too different from that of official donors. Evidence from cross-country studies suggests a relatively similar aid allocation of bilateral donors and international NGOs (Dreher et al. 2012b, Dreher et al. 2012c, Koch et al. 2009, Nunnenkamp et al. 2009), with Nancy and Yontcheva (2006) being an exception. Dreher et al. (2012b) even find that in the case of NGOs based in Switzerland, the more that they depend on official financing, the more their aid allocation imitates that of official Swiss aid.

*H4.b: NGOs tend to be active in the same regions and sectors as official donors, creating coordination problems between the two groups of donors.*

In addition to coordination problems between NGOs and official donors, coordination among NGOs is another issue with respect to NGO aid. Barr and Fafchamps (2006) argue that the marginal benefit from the engagement of an additional NGO falls with the amount of aid a location receives from other NGOs. NGOs exclusively interested in maximizing the welfare gains of the recipient country’s citizens would thus be expected to focus their efforts in areas not already saturated with NGO aid. However, risk aversion may also work against coordinated aid allocation among NGOs. Fruttero and Gauri (2005, 761) argue that the principal’s (the official financier’s) ability to monitor and “determine whom to blame and whom to congratulate for development outcomes” is inversely related to the number of agents active in a particular location. Conversely, it is easier for a particular NGO to hide in a larger crowd of peers, where their own contribution is but a small part of the larger whole. Easterly (2002, 245) argues along similar lines and posits that it is “the joint product of the many agents [that] makes it hard to

evaluate the efforts of any one agent. . . . Hence, there is safety in numbers in the foreign aid business.” The empirical analysis by Barr and Fafchamps (2006) supports these expectations by showing that the location choices by national NGOs in Uganda are characterized by “excessive geographical clustering.”<sup>14</sup>

*H5: NGOs tend to allocate their funds in regions and sectors where other (international or national) NGOs are already active.*

### 3. Data and Method

The data for our analysis come from the CRDB/CDC database,<sup>15</sup> which has been developed by the Cambodian government as a response to the Paris Declaration in 2005. We consider the 2000-2007 period since a comparison between these data and those of AidData reveals that aid figures from the CRDB/CDC database are incomplete outside this period.<sup>16</sup> Figure 1 shows the number of projects approved each year by bilateral and multilateral donors and international and national NGOs. It can be seen that the number of projects approved by official donors increased substantially (although in 2007 a decline in the number of projects by multilaterals can be observed), while in the case of the NGOs, the number stayed relatively constant. This, taken together with the fact that the number of official donors approving projects stayed relatively constant over the years (Figure 2), reveals that aid proliferation by official donors increased in the 2000-2007 period.

Interestingly, the number of official donors approving a project in a given year was approximately the same as the number of international NGOs until 2005. A significant rise in the number of international NGOs only occurred in the last two years, the number exceeding twice that of official donors in 2007. Taken together, Figures 1 and 2 reveal that a single official donor tends to carry out many more projects than a single NGO. More precisely, the average NGO starts only one project per year, while the average official donor starts six. One may expect that

<sup>14</sup> Another study finds that “[n]orthern NGOs present in Kenya have not harmonized or aligned or even co-ordinated their activities.” Furthermore, “[t]he relationship between Northern NGOs and Kenyan CSOs is eclectic. There is a lack of clarity in terms of roles and responsibilities” (Skalkaer Consult 2007: 28).

<sup>15</sup> <http://www.cdc-crdb.gov.kh/> (accessed: March 2012).

<sup>16</sup> AidData is the most comprehensive dataset on foreign official aid, which combines different sources (OECD CRS, annual reports for aid by multilateral development banks and non-DAC bilateral donors etc.). Excluding China, which is not considered in the standardized dataset by AidData, the aid amounts of official donors in CRDB/CDC over the 2000-2007 period are slightly higher than the amounts in AidData (2.6% higher to be exact), although the figures vary in the individual years to a greater extent.

another difference between official donors and NGOs is the size of the projects. However, Table 1 reveals that this difference is not substantial. The difference instead lies in the variation of the size: official projects vary much more in this regard than NGO projects. Surprisingly, projects by national NGOs are, on average, slightly larger than projects by international NGOs. An explanation might be that official donors rely more on national NGOs as a channel to distribute aid, thereby enlarging the projects of national NGOs. In fact, a comparison of the sources of funds by international and national NGOs shows that the share of official financing is significantly higher for national NGOs compared to international NGOs (53.0% vs. 31.4%). Smaller local NGOs not receiving official funds may abstain from reporting to CRDB/CDC.

As pointed out in Section 2, NGO proponents argue that NGOs are more poverty-oriented than official donors, which may lead them to work in different regions and sectors than the latter. By calculating simple correlations between per capita aid by official donors and NGOs and infant mortality per province, we may get a first glance on the poverty orientation of the two donor groups.<sup>17</sup> For official donors, the correlation is almost zero and not significant at conventional levels ( $\rho = 0.06$ ).<sup>18</sup> For NGOs, on the contrary, the correlation is  $-0.51$  and significant at the five percent level. This means that a person living in a poor region (high infant mortality) receives less NGO aid compared to a person living in a rich region (low infant mortality). This is surprising and a closer look at the data reveals that this finding is largely driven by the concentration of NGO aid in the capital Phnom Penh. The capital receives the highest amount of aid per capita from NGOs, even though it has the lowest infant mortality (see Appendix A). Excluding Phnom Penh, the correlation is no longer significant, but still negative ( $-0.31$ ). All the same, these results indicate that the poverty orientation of NGOs within Cambodia is not more pronounced than that of official donors.

The correlation between per capita aid by official donors and per capita aid by NGOs across regions is positive, although not significant ( $\rho = 0.24$ ). This speaks against different regional allocation decisions by official donors and NGOs which would have required a negative correlation. Concerning the sectoral allocation of projects, we observe a similar focus by official donors and NGOs; when ranking the sectors based on the number of projects in 2000-2007, the

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<sup>17</sup> Per capita aid is calculated as an average over the 2000-2007 period. Data on infant mortality per province are taken from the 2010 Cambodia Demographic and Health Survey (CDHS), <http://www.measuredhs.com/pubs/pdf/GF22/GF22.pdf> (accessed: March 2012). Note that some provinces are merged in the CDHS. In these cases, we take the combined figures for the respective provinces. Cambodia is divided into 20 provinces and 4 cities (treated as provinces in our empirical analysis).

<sup>18</sup> The significance levels used in this paper are one, five and ten percent.

eight most important sectors are the same for both groups of donors.<sup>19</sup> If we calculate aid amounts by sector, the differences between official donors and NGOs are, however, more pronounced. For instance, “Transportation” is the third most important sector for official donors, a sector which is not covered at all by NGOs. Finally, the correlation between sector-specific amounts of official aid and sector-specific amounts of NGO aid across regions is almost zero and not significant ( $\rho = 0.07$ ).

The descriptive statistics have already revealed some interesting patterns. To evaluate the coordination behavior among the different donors more rigorously, we perform logit estimations with the basic specifications:

$$\begin{aligned} Pr(Project_{dpst} = 1) &= F(\beta * Projects\ by\ other\ donors_{pst} + u_{ps} + v_d + y_t + e_{dpst}) \\ Pr(Project_{dpst} = 1) &= F(\beta * Log\ aid\ by\ other\ donors_{pst} + u_{ps} + v_d + y_t + e_{dpst}) \end{aligned}$$

where the dependent variable  $Project_{dpst}$  is a dummy variable equal to one if donor  $d$  starts a project in province  $p$  and sector  $s$  in year  $t$ .  $Projects\ by\ other\ donors_{pst}$  or  $Log\ Aid\ by\ other\ donors_{pst}$  are the number of projects or the (logged) sum of committed aid funds, respectively, by other donors active in province  $p$  and sector  $s$  in year  $t$ . We control for province-sector fixed effects  $u_{ps}$  to account for sector-specific needs which vary across provinces.<sup>20</sup>  $v_d$  and  $y_t$  are donor and year dummies, respectively, and  $e_{dpst}$  is an error term. Robust standard errors are clustered by province-sector pairs.

As the main variable of interest we use the number of active projects by other donors. More precisely, we accumulate, for each province-sector-year combination, all projects by other donors which are active in the respective year. The variable measures the degree of aid duplication in the regional-sectoral space when donor  $d$  is confronted with the decisions whether

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<sup>19</sup> These sectors are: “Governance & Administration,” “Agriculture,” “Health,” “Education,” “Rural Development,” “Community and Social Welfare,” “Environment and Conservation,” and “HIV/AIDS” (sorted by their importance for official donors; see Appendix B for a complete list of sectors). While these sectors account for almost 100 percent of the NGO activities, the projects of official donors are somewhat more diversified, with other sectors accounting for 21 percent of all projects. In particular, a substantial number of projects can be observed in the sectors “Transportation” and “Water and Sanitation” (99 and 80, respectively). However, to make the subsequent analysis comparable between official donors and NGOs, we refrain from including these sectors.

<sup>20</sup> However, we cannot control for changes in sector-specific needs over the period under consideration (2004-2007 as described below). Nonetheless, we can reasonably well assume that we only cover sectors in which needs do not change dramatically within the few years studied. In particular, the analysis does not include emergency and food aid.

or where to start a project. Alternatively, we use the sum of the aid funds by other donors (accumulated in the same way as the projects). Possibly, a donor may take into account the amount of aid allocated in the regional-sectoral space by other donors rather than the number of projects. In other words, a (large) donor may still intend to realize a project in a province and sector where only small, although many, projects are in place. In a final specification, we include both variables at the same time. The consideration of projects by other donors may depend on the size of these projects. In other words, we need to control for the total funds spent on these projects when evaluating the attention of donors to duplication of aid efforts.

We exclude nation-wide projects and limit our analysis to the eight sectors with a relevant number of projects by both official donors and NGOs in 2000-2007.<sup>21</sup> Importantly, we limit the time dimension  $T$  of the dependent variable to the 2004-2007 period. At the same time, when constructing the explanatory variables (i.e., *projects by other donors* and *log aid by other donors*), we not only consider projects that started between 2004 and 2007 but also projects that started between 2000 and 2003 if they are active in year  $t$  ( $t = 2004, \dots, 2007$ ). Note that the average duration of projects is 3.8 years. By not considering the years 2000-2003 in  $T$ , we avoid the possibility that the explanatory variable is biased: In  $t = 2000, \dots, 2003$  we would disregard many relevant projects, approved before the year 2000 and active in the years thereafter.<sup>22</sup>

#### 4. Results

##### *Bilateral and multilateral official donors*

First, we examine the coordination behavior of bilateral and multilateral donors. NGOs are considered in the next subsection. The results of the baseline specification are presented in column (1) of Table 2. The variable of interest, *projects by other donors*, turns out to be negative and significant, at the one percent level. This means that the likelihood of a bilateral or multilateral donor starting a project decreases with the number of projects already in place in a certain province, sector and year. Calculating marginal effects, we find that an additional active project by another bilateral or multilateral donor predicts a decrease in the likelihood of starting a project by 0.5 percent. This corresponds to a decrease of 1.5 percent when the change in the number of other projects is one standard deviation (3.3). Despite being statistically significant,

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<sup>21</sup> About half of the projects are excluded because they are nation-wide projects. Additionally, about 20 percent of the projects are located in sectors which are not considered in the analysis.

<sup>22</sup> Recall that the CRDB/CDC dataset is incomplete before 2000.

the effect seems quantitatively very small. This result indicates a modest degree of coordination among official donors, going in the direction of hypothesis *H1*.<sup>23</sup>

In columns (2) and (3), we split the sample into the periods before and after the Paris Declaration, i.e., 2004-2005 and 2006-2007. We include the year 2005 in the pre-period because 2005 has arguably been too early to observe an effect of the Declaration. We find the marginal effects to be almost identical before and after the Declaration.<sup>24</sup> This result does not confirm hypothesis *H2*. Rather, it is in line with Nunnenkamp et al.'s (2013) finding that the Paris Declaration has not made a difference.

The question whether multilateral donors respond to the projects of other official (bilateral and multilateral) donors to a higher degree than bilateral donors is evaluated in column (4). We interact our variable of interest, *projects by other donors*, with a multilateral donor dummy.<sup>25</sup> Note that interaction effects cannot be inferred from the coefficients in logit estimations (Ai and Norton 2003).<sup>26</sup> Rather, marginal effects for bilateral and multilateral donors, respectively, have to be calculated. The marginal effects in Table 3 do not support hypothesis *H3* (i.e., multilateral donors generally coordinate more than bilateral donors) as the difference in the marginal effects is not significant.

A more nuanced picture emerges if we look at how bilateral and multilateral donors respond to their respective peers (i.e., other bilateral or multilateral donors, respectively) (marginal effects in Table 3 based on column (5) of Table 2). We find that the effects are significantly different at the one percent level. This indicates that multilaterals respond more strongly to projects of other multilaterals than bilateral donors do to projects of other bilateral donors. In other words, multilateral donors coordinate more among each other than bilateral donors do, confirming hypothesis *H3.1*. However, we also find that bilateral donors respond to projects by multilateral donors to a similar degree as multilaterals do amongst themselves. This is in line with the reasoning in Section 2, i.e., political and economic competition among bilateral

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<sup>23</sup> Nonetheless, we cannot take some specific forms of coordination into account that may play a role. In particular, we miss sector-wide approaches (SWAps), common pools, and delegated responsibility to lead donors.

<sup>24</sup> The marginal effects are also similar if we exclude 2005 from the pre-period (not shown). However, the marginal effect of the pre-period is not significant anymore (p-value = 0.12), possibly because of the drop in the number of observations.

<sup>25</sup> In order to include the multilateral donor dummy, individual donor dummies need to be excluded here and for the rest of the estimations in this subsection.

<sup>26</sup> According to Greene (2010), the decision of including an interaction term in a regression should depend on whether it improves the goodness of fit. Nevertheless, an interaction effect can also be present in logit models where the interaction term is not significant (Berry et al. 2010). We opt to always keep the interaction terms in the estimations as the loss of efficiency is only marginal with the present number of observations.

donors prevents them from coordinating with each other. It seems that duplication of aid efforts is less likely to occur in the case of multilateral aid.

Table 4 presents the alternative specifications. In columns (1)-(5), Table 2 is replicated with the sum of aid funds instead of the number of projects by other donors as the explanatory variable. The results are qualitatively similar throughout, with two major exceptions: First, we now find multilateral donors generally reacting more strongly to aid funds by other donors than bilateral donors do, independent of whether the aid is bilateral or multilateral (see marginal effects in Table 5, based on column (4) of Table 4). Second, the effect of aid funds from bilateral peers turns out to be insignificant for bilateral donors. In other words, we do not find any evidence of coordination among bilateral donors when it comes to the amount of aid allocated within Cambodia. If bilateral aid in specific regions and sectors is high, bilateral donors seem to be reluctant to step back and leave the field to other donor countries. As noted before, the reason may lie in their political or economic interests in (important) regions and sectors where other bilateral donors are also present.

Quantitatively, the marginal effect of the sum of aid funds is smaller than the effect of the number of projects. An increase in aid funds by one standard deviation leads to a decrease in the likelihood of starting a project by only 0.7 percent (based on column (1) of Table 4). In addition, the pseudo  $R^2$  is higher in the estimations using the number of projects as the explanatory variable. Hence, donors seem to pay attention to the number of projects rather than the amount of aid spent by other donors when deciding how to allocate their aid funds. This is quite plausible considering that projects by other donors are easy to spot, while amounts spent on projects are often unknown to outsiders.

The estimations in columns (6)-(10) include both variables, i.e., number of projects and aid amounts. Controlling for the sum of aid funds by other donors, the marginal effect of the number of projects by other donors is still significant at the one percent level and similar in size as above (see Table 5, based on column (6) of Table 4). The other previous findings also carry over to the new specification. Note, however, that the difference between bilateral and multilateral donors in how they react to their peers' projects is now only significant at the ten percent level, while the difference is still significant at the one percent level when looking at the peers' aid funds (see Table 5, based on column (10) of Table 4).

### *International and national NGOs*

We now turn to the results with respect to international and national NGOs active in Cambodia. To evaluate the conflicting hypotheses, i.e., whether NGOs engage in different regions and sectors than official donors (*H4.a*), or whether NGOs tend to be active in the same regions and sectors as official donors (*H4.b*), we include *projects by official donors* as the explanatory variable and no province-sector fixed effects in column (1) of Table 6.<sup>27</sup> The marginal effect in the respective column of Table 7 turns out to be positive and significant at the five percent level. This indicates regional-sectoral clustering of NGOs with official donors, implying coordination problems between the two groups of donors. In column (2), we differentiate between projects by bilateral and multilateral donors in the explanatory variables. It turns out that clustering only occurs with multilateral donors. Nevertheless, the insignificant effect of bilateral projects is still in line with *H4.b* as it shows that the regional-sectoral aid allocation of NGOs is not significantly different from that of bilateral donors. In column (3), we differentiate between international and national NGOs. The marginal effects in the respective column of Table 7 show that both international and national NGOs cluster with multilateral donors, but not with bilateral donors. Nevertheless, neither international nor national NGOs allocate their aid to different regions and sectors than bilateral donors.

In columns (4)-(6) of Table 6, we augment the model with province-sector fixed effects again. In this way, we account for the fact that sector-specific needs vary across provinces.<sup>28</sup> Accordingly, it might be justifiable that the different donors largely neglect some provinces in sector-specific aid allocation decisions. The marginal effect in column (4) of Table 7 is not significant at conventional levels implying no coordination of NGOs with official donors. This finding is in contrast to the results with respect to coordination among official donors where we find at least a modest degree of coordination among bilateral and multilateral donors. By differentiating between projects by bilateral and multilateral donors, the marginal effects in column (5) of Table 7 reveal weak evidence of coordination with bilateral donors, but no coordination with multilateral donors. By looking at the different results for international and national NGOs in column (6), we only find a negative and significant effect in the case of national NGOs with bilateral donors.

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<sup>27</sup> Note that NGO fixed effects are included in columns (1), (2), (4) and (5) of Table 6, i.e., in the columns where the International NGO dummy is not included.

<sup>28</sup> See: <http://www.measuredhs.com/pubs/pdf/FR249/FR249.pdf> (accessed: November 2012).

Now we turn to the question whether NGOs tend to allocate their funds in regions and sectors where other (international or national) NGOs are already active (columns (1)-(3) of Table 8 and 9). To test this, we do not include province-sector fixed effects.<sup>29</sup> The positive and significant marginal effect in column (1) of Table 9 clearly reveals regional-sectoral clustering among NGOs. By differentiating between international and national NGOs in column (2), we find clustering of international and national NGOs among their respective peers. Furthermore, international NGOs engage predominantly in regions and sectors where national NGOs are already active. Conformity of locations seems to be important for NGOs to hide in the crowd.<sup>30</sup> In contrast, national NGOs do not appear to take the projects by their international counterparts into account when deciding where to start a project. Finally, when including the explanatory variables of both Table 6 (7) and 8 (9), i.e., projects by international and national NGOs as well as projects by bilateral and multilateral donors, in column (3), all the presented results remain qualitatively unchanged.

In relation to the point above, it should be noted that similar location choices may also be based on need considerations. NGOs may work in the same regions and sectors because of the urgent needs in these fields. In columns (4)-(6), we therefore augment the model with province-sector fixed effects again. By controlling for province-sector fixed effects, we assess coordination among NGOs abstracting from similar location choices of NGOs across regions and sectors. The negative and significant marginal effect in column (4) indicates that, in contrast to the results with respect to coordination of NGOs with official donors, NGOs seem to coordinate with each other. By differentiating between international and national NGOs we find that NGOs take account of projects by international and national NGOs to a different degree: On the one hand, national NGOs do not take the projects by their peers into account. Likewise, the evidence of international NGOs considering the projects of their national counterparts is weak (negative marginal effect only significant at the ten percent level). On the other hand, both international and national NGOs clearly take projects by the peers of international NGOs into account (both marginal effects significant at the one percent level).<sup>31</sup> When again including the explanatory

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<sup>29</sup> In Table 8, NGO fixed effects are included in columns (1) and (4).

<sup>30</sup> For international NGOs, however, an alternative explanation is also possible: as they prefer to closely work together with their national counterparts when implementing their projects they may choose regions and sectors where (enough) national NGOs are present.

<sup>31</sup> However, this result may reflect crowding out of other NGOs by international NGOs rather than coordination in a more narrow sense; in particular national NGOs may be kept off from engaging in a region and sector where international NGOs are already active.

variables of both Tables 6 (7) and 8 (9), the results remain largely unchanged. A notable exception is that, in contrast to above, projects by bilateral donors are not only taken into account by national but also by international NGOs.

## 5. Conclusion

Recent international summits have put emphasis on aid fragmentation and donor coordination in order to improve the effectiveness of aid. In the 2005 Paris Declaration, donors promised to render aid more effective by “eliminating duplication of efforts and rationalizing donor activities to make them as cost-effective as possible” (OECD 2005: paragraph 3). Aid coordination *within* developing countries has been highlighted as a particularly crucial issue in the 2008 Accra Agenda for Action. Nevertheless, rigorous quantitative analyses of within-country aid coordination are largely missing. This study helps to close this gap by investigating the degree of donor coordination among all official donors and NGOs present in Cambodia.

We find merely modest coordination among donors between 2004 and 2007. In particular, bilateral donors seem not to coordinate with each other, in direct contrast to the commitments formulated in the Paris Declaration in 2005. This suggests that aid continues to be regarded as a political or commercial tool in the competition among donor countries. In contrast, coordination appears to be more advanced with respect to multilateral aid.

It cannot be ruled out that donor coordination has improved in more recent years. We fail to capture the possible impact of the Accra Agenda for Action in 2008 that highlighted the importance of within-country division of labor. However, large and sudden changes are unlikely to occur as long as aid is used as a means to foster political and economic interests and donor countries have an interest to “plant their flag” in any field where it is highly visible in order to demonstrate their engagement to the tax payers at home and secure future funding (Nunnenkamp et al. 2013).

A particular challenge for the future will be the inclusion of the numerous international (and national) NGOs in coordination efforts (besides important non-DAC donor countries like China). NGOs do not appear to work in different fields than official donors, implying coordination problems between the two groups of donors. The situation is being aggravated by the fact that NGOs appear to cluster in the regional-sectoral space although there seems to be some sort of coordination among them once similar location choices across regions and sectors are controlled for.

It is open to question whether the findings of the present study carry over to other recipient countries. Only further research on other countries can show to what extent these results can be generalized. The crucial point here lies in the availability of data that allows identifying the locations of projects within countries. Some other recipient governments have taken the effort to collect data on official aid in their country (e.g., Mozambique).<sup>32</sup> The initiative by AidData of geocoding projects by official donors is also promising in this regard.<sup>33</sup>

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<sup>32</sup> However, to the best of our knowledge, no other recipient country has included NGO aid in their databases.

<sup>33</sup> See: <http://www.aiddata.org/content/index/AidData-Raw/geocoded-data> (accessed: November 2012).

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Figure 1: Number of projects by official donors and NGOs

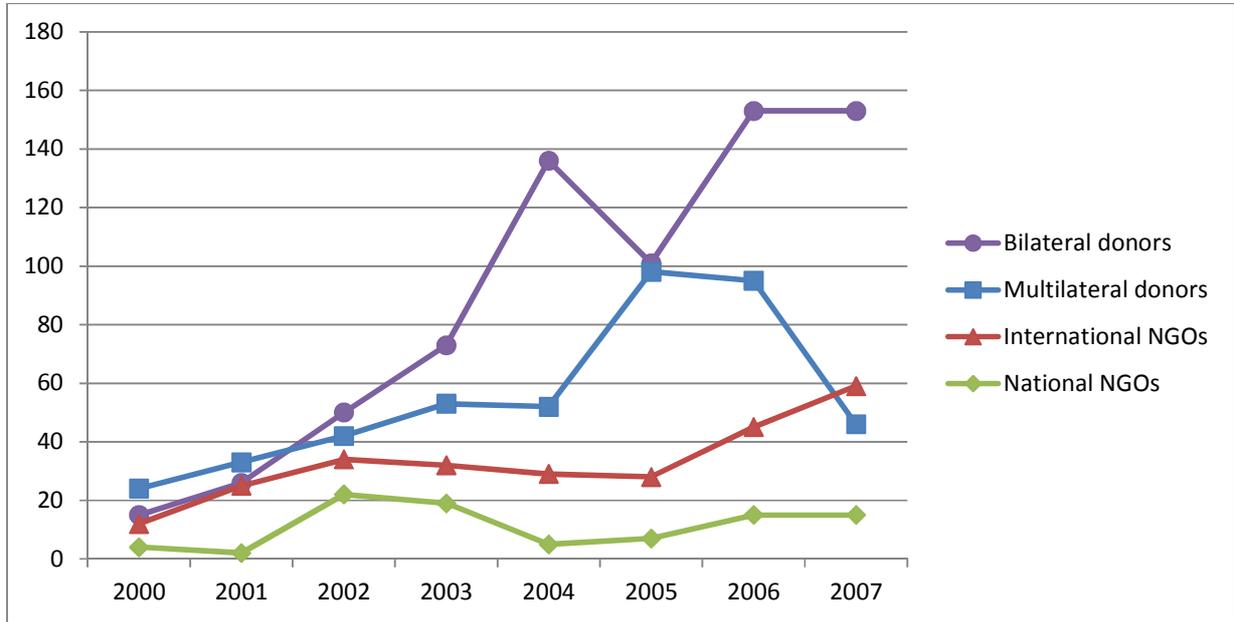


Figure 2: Number of official donors and NGOs

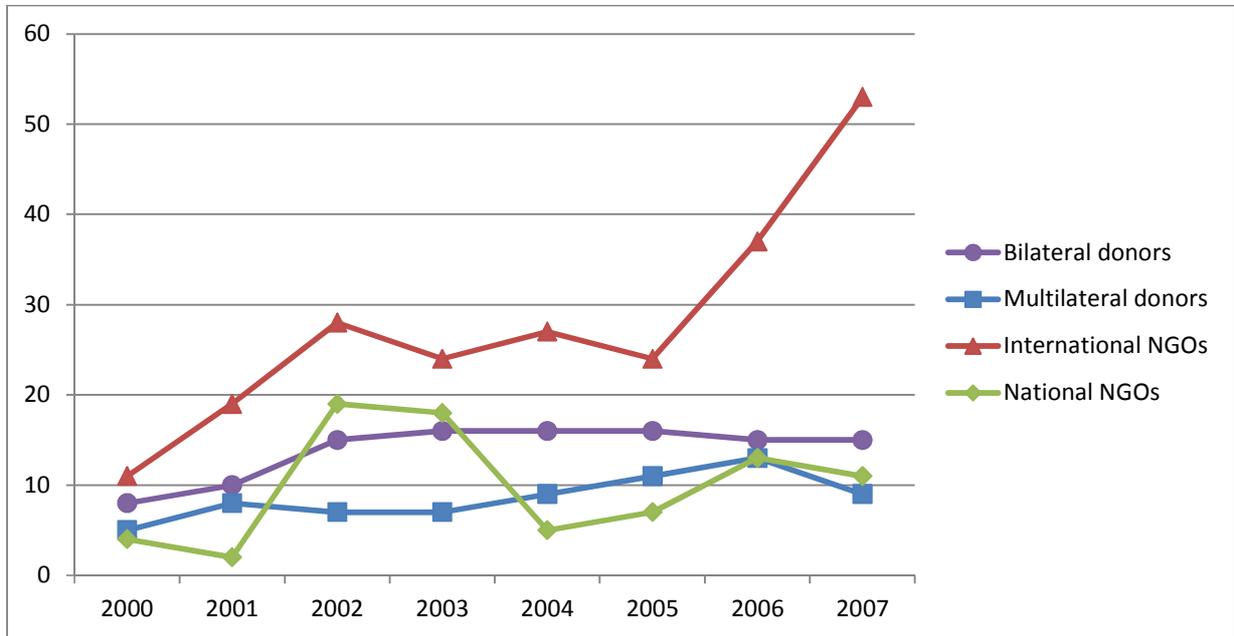


Table 1: Average project size by donor (2000-2007)

	Average project size (in US\$)	Std. Dev.	Min	Max
<b>NGOs</b>	<b>3,803,388</b>	<b>7,841,503</b>	<b>65,515</b>	<b>56,700,000</b>
International NGOs	3,760,726	7,174,211	65,515	56,700,000
National NGOs	4,032,883	10,900,000	76,000	55,100,000
<b>Official donors</b>	<b>4,992,827</b>	<b>13,700,000</b>	<b>2,982</b>	<b>244,000,000</b>
Bilateral donors	4,280,994	13,300,000	3,503	244,000,000
Multilateral donors	6,026,640	14,200,000	2,982	144,000,000

Table 2: Logit estimations, whole period, before vs. after Paris Declaration, bilateral vs. multilateral donors

	(1) 2004-2007	(2) 2004-2005	(3) 2006-2007	(4) 2004-2007	(5) 2004-2007
Projects of other bi- and multilateral donors	-0.300*** (0.040)	-0.965*** (0.180)	-0.849*** (0.114)	-0.345*** (0.040)	
Multilateral donor				0.234* (0.130)	0.217 (0.135)
Projects * Multilateral				-0.055*** (0.021)	
Projects of (other) bilateral donors					-0.194*** (0.061)
(Other) bilateral projects * Multilateral					-0.105** (0.052)
Projects of (other) multilateral donors					-0.436*** (0.071)
(Other) multilateral projects * Multilateral					-0.030 (0.031)
Constant	0.586* (0.337)	9.937*** (1.486)	-2.115*** (0.248)	-0.079 (0.339)	-0.253 (0.331)
Observations	20,608	7,682	7,488	20,608	20,608

Notes: Robust standard errors clustered by province-sector pair in parentheses; province-sector pair and year dummies included in all columns; donor dummies included in columns (1)-(3); \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 3: Marginal effects based on Table 2, columns (4) and (5)

	column (4) Projects by other donors	column (5) Projects by other bilateral donors	column (5) Projects by other multilateral donors
Bilateral donor	-0.009*** (0.001)	-0.005*** (0.002)	-0.011*** (0.002)
Multilateral donor	-0.010*** (0.001)	-0.008*** (0.002)	-0.012*** (0.002)
Observations	20,608	20,608	20,608

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4: Logit estimations, *Log aid funds* as (additional) explanatory variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	2004-2007	2004	2005-2007	2004-2007	2004-2007	2004-2007	2004	2005-2007	2004-2007	2004-2007
Projects by other bi- and multilateral donors						-0.285***	-0.360***	-0.319***	-0.348***	
						(0.040)	(0.054)	(0.051)	(0.041)	
Multilateral donor				0.651***	0.413**				0.643***	0.393**
				(0.203)	(0.173)				(0.219)	(0.188)
Projects * Multilateral									-0.013	
									(0.024)	
Projects by (other) bilateral donors										-0.223***
										(0.075)
(Other) bilateral projects * Multilateral										0.031
										(0.066)
Projects by (other) multilateral donors										-0.403***
										(0.067)
(Other) multilateral projects * Multilateral										-0.013
										(0.039)
Log aid funds by other bi- and multilateral donors	-0.076***	-0.087***	-0.104***	-0.068***		-0.056***	-0.066***	-0.074***	-0.044**	
	(0.014)	(0.018)	(0.017)	(0.018)		(0.016)	(0.019)	(0.018)	(0.022)	
Log aid funds * Multilateral				-0.047***					-0.046**	
				(0.014)					(0.018)	
Log aid funds by (other) bilateral donors					-0.012					0.006
					(0.016)					(0.022)
Log (other) bilateral aid funds * Multilateral					-0.050***					-0.056***
					(0.012)					(0.017)
Log aid funds by (other) multilateral donors					-0.107***					-0.074***
					(0.017)					(0.021)
Log (other) multilateral aid funds * Multilateral					0.005					0.000
					(0.013)					(0.019)
Constant	-0.740***	-0.378	-0.368	-2.030***	-1.251***	1.325***	2.185***	1.859***	0.672	0.770
	(0.259)	(0.320)	(0.302)	(0.302)	(0.381)	(0.419)	(0.508)	(0.487)	(0.483)	(0.537)
Observations	20,608	10,688	16,732	20,608	20,608	20,608	10,688	16,732	20,608	20,608

Notes: Robust standard errors clustered by province-sector pair in parentheses; province-sector pair and year dummies included in all columns; donor dummies included in columns (1)-(3) and (6)-(8); \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 5: Marginal effects based on Table 4, columns (4), (5), (9) and (10)

	Marginal effects based on Table 4								
	column (4) Aid funds of other donors	column (5) Aid funds of (other) bilateral donors    Aid funds of (other) multilateral donors		Projects of other donors	column (9) Aid funds of other donors	Projects of (other) bilateral donors	column (10) Projects of (other) multilateral donors	Aid funds of (other) bilateral donors	Aid funds of (other) multilateral donors
Bilateral donor	-0.002*** (0.000)	-0.000 (0.000)	-0.003*** (0.000)	-0.008*** (0.001)	-0.001** (0.001)	-0.005*** (0.002)	-0.010*** (0.002)	0.000 (0.001)	-0.002*** (0.000)
Multilateral donor	-0.003*** (0.000)	-0.002*** (0.000)	-0.003*** (0.000)	-0.009*** (0.001)	-0.002*** (0.000)	-0.005*** (0.002)	-0.010*** (0.001)	-0.001** (0.000)	-0.002*** (0.000)
Observations	20,608	20,608	20,608	20,608	20,608	20,608	20,608	20,608	20,608

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 6: Logit estimations, international and national NGOs, coordination with official donors, coefficients

	(1)	(2)	(3)	(4)	(5)	(6)
Projects by official donors	0.074*** (0.025)			-0.021 (0.038)		
Projects by bilateral donors		0.038 (0.064)	-0.131 (0.108)		-0.081* (0.048)	-0.258** (0.101)
Projects by multilateral donors		0.094*** (0.030)	0.149*** (0.042)		0.030 (0.056)	0.098 (0.065)
International NGO			-0.035 (0.156)			0.011 (0.181)
Projects by bilateral donors * INGO			0.204*** (0.078)			0.210** (0.084)
Projects by multilateral donors * INGO			-0.071** (0.031)			-0.089** (0.040)
Constant	-5.255*** (0.114)	-5.232*** (0.125)	-5.202*** (0.188)	-5.783*** (0.333)	-5.755*** (0.321)	-5.707*** (0.364)
Observations	109,824	109,824	109,824	85,228	85,228	85,228

Notes: Robust standard errors clustered by province-sector pair in parentheses; year dummies included in all columns; NGO dummies included in columns (1), (2), (4) and (5); province-sector pair dummies included in columns (4)-(6); \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 7: Logit estimations, international and national NGOs, coordination with official donors, marginal effects

	(1)	(2)	(3)		(4)	(5)	(6)	
			International NGO	National NGO			International NGO	National NGO
Projects by official donors	0.0002** (0.0001)				-0.0001 (0.0001)			
Projects by bilateral donors		0.0001 (0.0002)	0.0003 (0.0003)	-0.0005 (0.0004)		-0.0002* (0.0001)	-0.0002 (0.0002)	-0.0009*** (0.0003)
Projects by multilateral donors		0.0003*** (0.0001)	0.0003*** (0.0001)	0.0006*** (0.0002)		0.0001 (0.0001)	0.00004 (0.0002)	0.0004 (0.0002)
Observations	109,824	109,824	109,824	109,824	85,228	85,228	85,228	85,228

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 8: Logit estimations, coordination among international and national NGOs, coefficients

	(1)	(2)	(3)	(4)	(5)	(6)
Projects of other NGOs	0.093*** (0.009)			-0.416*** (0.090)		
International NGO		0.052 (0.132)	-0.007 (0.168)		0.028 (0.154)	0.015 (0.196)
Projects by (other) international NGOs		0.010 (0.028)	0.036 (0.031)		-0.540*** (0.143)	-0.547*** (0.111)
Projects by (other) international NGOs * INGO		0.054** (0.024)	0.021 (0.031)		0.048** (0.023)	0.025 (0.032)
Projects by (other) national NGOs		0.363*** (0.080)	0.274*** (0.096)		-0.095 (0.169)	-0.248 (0.205)
Projects by (other) national NGOs * INGO		-0.176** (0.083)	-0.082 (0.099)		-0.145* (0.077)	-0.089 (0.097)
Projects by bilateral donors			-0.152 (0.104)			-0.465*** (0.148)
Projects by bilateral donors * INGO			0.203** (0.091)			0.162** (0.075)
Projects by multilateral donors			0.127*** (0.039)			0.070 (0.072)
Projects by multilateral donors * INGO			-0.074** (0.036)			-0.066* (0.039)
Constant	-5.527*** (0.091)	-5.564*** (0.150)	-5.651*** (0.174)	-4.955*** (0.168)	-4.944*** (0.243)	-3.569*** (0.737)
Observations	109,824	109,824	109,824	85,228	85,228	85,228

Notes: Robust standard errors clustered by province-sector pair in parentheses; year dummies included in all columns; NGO dummies included in columns (1), (2), (4) and (5); province-sector pair dummies included in columns (4)-(6); \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 9: Logit estimations, coordination among international and national NGOs, marginal effects

	(1)	(2)		(3)		(4)	(5)		(6)	
		Internationa l NGO	National NGO	Internationa l NGO	National NGO		Internationa l NGO	National NGO	Internationa l NGO	National NGO
Projects by other NGOs	0.0002*** (0.0000)					-0.0008*** (0.0001)				
Projects by (other) international NGOs		0.0002*** (0.0001)	0.00004 (0.0001)	0.0002*** (0.0001)	0.0001 (0.0001)		-0.0015*** (0.0003)	-0.0015*** (0.0003)	-0.0015*** (0.0003)	-0.0014*** (0.0003)
Projects by (other) national NGOs		0.0007*** (0.0002)	0.0013*** (0.0003)	0.0007*** (0.0002)	0.0009*** (0.0003)		-0.0007* (0.0004)	-0.0003 (0.0005)	-0.0010** (0.0005)	-0.0007 (0.0006)
Projects by bilateral donors				0.0002 (0.0001)	-0.0005 (0.0003)				-0.0009** (0.0005)	-0.0012*** (0.0004)
Projects by multilateral donors				0.0002** (0.0001)	0.0004*** (0.0001)				0.00001 (0.0002)	0.0002 (0.0002)
Observations	109,824	109,824	109,824	109,824	109,824	85,228	85,228	85,228	85,228	85,228

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix A: Infant mortality and per capita official aid and NGO aid per province

Province	Infant mortality	Per capita official aid (in US\$)	Per capita NGO aid (in US\$)
Preah Vihear	95	14.4	33.6
Stung Treng	95	37.1	25.7
Mondul Kiri	82	107.2	31.8
Ratanak Kiri	82	20.9	46.4
Kampong Chhnang	78	21.5	42.2
Svay Rieng	78	13.2	24.8
Kracheh	76	60.2	32.7
Takeo	68	20.6	50.6
Kampong Speu	65	15.7	69.5
Prey Veng	64	17.2	21.2
Banteay Meanchey	61	22.8	34.9
Kandal	61	29.8	44.8
Kampot	60	31.3	24.2
Krong Kep	60	4.1	32.5
Kampong Thom	57	31.5	39.9
Kampong Cham	54	21.8	36.4
Pursat	53	17.6	30.2
Koh Kong	50	6.9	43.3
Krong Preah Sihanouk	50	95.1	80.9
Siem Reap	50	38.8	122.4
Battambang	45	28.6	60.3
Krong Pailin	45	8.8	11.3
Otdar Meanchey	42	22.3	35.0
Phnom Penh	13	39.3	124.4

Notes: Per capita aid is calculated as an average over the 2000-2007 period. Data on infant mortality per province are taken from the 2010 Cambodia Demographic and Health Survey (CDHS), <http://www.measuredhs.com/pubs/pdf/GF22/GF22.pdf> (accessed: March 2012). Note that some provinces are merged in the CDHS. In these cases, we take the combined figures for the respective provinces.

## Appendix B: Number of projects and aid funds by official donors and NGOs

Sector	Official donors		NGOs	
	# of projects	Aid funds	# of projects	Aid funds
Governance & Administration	378	937,000,000	55	32,500,000
Agriculture	358	707,000,000	65	9,436,127
Health	341	953,000,000	142	77,400,000
Education	267	564,000,000	197	147,000,000
Rural Development	252	654,000,000	66	21,500,000
Community and Social Welfare	186	197,000,000	328	237,000,000
Environment and Conservation	120	171,000,000	39	45,200,000
HIV/AIDS	109	474,000,000	122	99,300,000
Transportation	99	835,000,000	0	
Water and Sanitation	80	148,000,000	4	922,505
Manufacturing, Mining Trade	54	242,000,000	1	
Gender	48	35,500,000	2	1,466,981
Energy, Power & Electricity	43	339,000,000	0	
Information and Communications	34	125,000,000	2	
Culture & Arts	31	35,100,000	3	1,604,333
Banking and Business Services	26	70,500,000	0	
Emergency & Food Aid	26	48,900,000	3	
Tourism	25	34,200,000	0	
Urban Planning & Management	18	22,000,000	0	
Budget & BoP Support	6	89,700,000	0	
Other	51	82,800,000	1	2,165,777

Notes: Number of projects and aid funds are accumulated over the 2000-2007 period. The total aid funds spent by NGOs are downward biased as the aid amounts of NGO projects are sometimes missing. Multi-sector projects are counted more than once.