Who Gets Green Aid from the World Bank?: The Determinants of the Bank's Global Aid Allocation for the Environment.

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Abstract

This article presents a statistical regression analysis of the International Development Association's (IDA) environmental aid allocation. The World Bank, as the largest multilateral donor for environmental sustainability, has been spending up to $3 billion dollars annually on environmental sustainability projects. Thus, the question needs to be raised what influences the Bank's allocation of aid for environmental sustainability. Who is the model recipient for the World Bank?

The research is based on logit and linear regression analysis for the period of 1995–2006 with a sample of 100 aid recipient countries. Additionally, the regression outputs were compared with World Bank aid policies. As the analysis will show, the World Bank's allocation of funds for environmental sustainability is influenced by poverty, political, economic and regional variables. Out of the environmental variables tested one was significant: CO_2 emissions. Overall, environmental aid is placed within the broader poverty alleviation framework of aid. The article suggests a revision of allocation policies to ensure a greater effectiveness of the Bank's environmental aid distribution.

1. Introduction

At a time when climate change has risen to be one of the most pressing priorities of national governments and multilateral institutions, the questions arise about the proposed solutions to tackle the problem. There is no longer doubt that we are all living in a rapidly changing environment, an environment on which we are so dependent for our livelihoods. At the same time major donors spend billions of dollars annually trying to decrease the world's environmental problems and attempt to mitigate climate change.

World Bank is the second largest donor (after Japan) and the largest multilateral donor of aid for environmental sustainability in terms of volume.[1] Between 1995 and 2006 the Bank allocated over $15.5 billion for environmental sustainability and over $7 billion only for the environment. According to the OECD Creditor Reporting System (OECD CRS), since the year 2000 the International Development Agency (IDA), a key institution of the World Bank, has spent over $2.5 billion for climate change alone.

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Despite these efforts, the global environment is still being extensively degraded. There is criticism arising that the amount of environmental aid allocated by donor institutions is not enough.[2] However, one needs to explore the current environmental aid allocation process of one of the largest environmental donors before increasing the amount in order to avoid repeating potential mistakes. It is, thus, necessary to answer the question: who gets aid for the environment?

The objective of this article is to explore the determinants of IDA's global environmental aid allocation using logit and linear regression analysis. This paper aims to determine whether aid is distributed according to environmental, political or economic factors. The goal is to present recipient countries' characteristics which increase the likelihood of obtaining funds from the World Bank (non-recipient country related factors will not be illuminated). The article will verify the perception that environmental aid is distributed to the most environmentally impoverished countries, which are at greatest need of environmental support. With environmental aid allocated according to political or economical categories, the environment may be degraded further and the link between environment and poverty in developing countries strengthened.[3]

Research on aid allocation for the environment is quite new, as it emerged with the growing interest in environmental issues which peaked in the early 1990s. Up to date, the only study investigating World Bank's environmental aid allocation is Bradley C. Parks' and Michael J. Tierney's research based on the PLAID database.[4] The study used the OLS (Ordinary Least Squares) model to uncover significant variables for the World Bank. According to their findings, the natural capital amount was a significant factor for the Bank. This paper will verify the finding.

The World Bank is probably the most criticized institution regarding environmental concerns and its environmental programs.[5] The World Bank has been faced with numerous challenges in its efforts to incorporate environmental issues into its operations. Nonetheless, the World Bank is the largest multilateral donor, allocating annually $1-3 billion (IDA funds only) for environmental sustainability projects. Hence, it is important to retrace the allocation of funds and illuminate the current distribution patterns.

2. World Bank's understanding of the environment

In the late 1990s there was a shift within the World Bank from viewing environmental problems as a separate sector to viewing them as part of development (World Bank 2000: 3). Environment started out with its "conservation focus and slowly emanated out to natural resource management, and then further out to infrastructure and reaching the more distant sectors, non-resource sectors"[6]. As the World Bank decided to mainstream environmental concerns into various projects and not to treat environmental issues as a separate category, this lead to the distortion of environmental aid figures, because projects with doubtful environmental components are found in the World Bank

Project Database under the Environment and Natural Resource Management theme.

One such project is the Highway Management Project in the Philippines (Project ID: P004597, dated from 1991–2000) which had the main objective of "improving the quality of the arterial highway network, thereby reducing transport costs and increasing the country's economic competitiveness" (sic). This project can be found under the Environment and Natural Resource Management theme, under the category of environment polices and institutions. The major components of the project are transportation (82%) and public administration, law and justice (18%). It is placed there because it contains environmental components. The corresponding Millennium Development Goal for this project attributed by the World Bank is Goal 7: ensuring environmental sustainability. A similar project is the Mexican Federal Roads Modernization Project (Project ID: P043163, dated 1997–2004) which had the goal of satisfying the needs of traffic growth reducing road transport system costs. It is also placed under the seventh Millennium Development Goal of ensuring environmental sustainability.

Transportation related projects are not the only controversial projects classified as projects with the environmental sustainability goal in the Project Database. One such questionable project under the water and sanitation category is the Armenian Second Irrigation Dam Safety Project (Project ID: P088499, 2004–2009). In the project details one can find the goal of environmental sustainability next to the project description of rehabilitating twenty-nine dams. The project is generated under the Environment and Natural Resource Management theme, despite the fact that the environmental benefit of dams is highly questionable.[7] World Bank's project classification system can be very misleading.

Viewing certain types of infrastructure projects (such as geothermal plants, dams, water provision and sanitation) as a part of the environmental sustainability concept, is not a unique characteristic of the World Bank. Japan, the largest environmental assistance donor in the world, holds a similar perception. Infrastructure-based aid for the environment constitutes from 50% to 80% of the World Bank's portfolio and 50 to 80% of Japan's portfolio (based on OECD figures). Both donors also issue low-interest loans for environmental projects.

The World Bank's primary mission is poverty alleviation and environmental issues are viewed within this context, as "the development of the [environmental] strategy is part of a larger process within the Bank to rethink how World Bank development assistance can become more effective in addressing poverty" (World Bank 2000: vii). Thus, environmental sustainability is considered a part of poverty reduction. Hence, it expected that aid for environmental sustainability will have a linkage to poverty measuring variables in the regression outputs.

Although, the World Bank is the second largest environmental aid lender, aid for the environment is not one of the top priority sectors. According to OECD CRS, between 1995 and 2006 aid for environmental sustainability constituted 12% of total World Bank funds and aid only for the environment made up 6% (figure 1).

Figure 1　IDA total and environmental funds, 1995-2008.
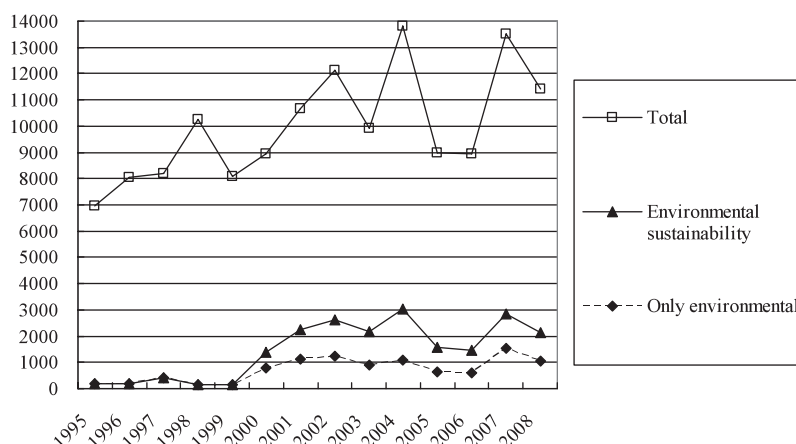
Note: In millions (US$2008).   Only IDA funds. Environmental sustainability includes: Only for
　　　environment, Environment and Gender, Environment and Participatory Development/Good
　　　Governance and Gender and Environment and Participatory Development/Good Governance.
　　　There are gaps in aid reporting prior to 1999. Source: Calculated from OECD CRS.

There has been a significant rise of aid for environmental sustainability, which also includes non-environmental components. Between 1995 and 2006, only 48% of aid for environmental sustainability is "only for the environment".   The majority includes other components such as gender and participatory development.

Measuring aid for the environment is a challenge due to the lack of an universally accepted definition. As Mark Lundell (Sector Leader) in World Bank Brazil explains: "Something that you would define as environment which would have natural resource management, sewage and water treatment, protected areas and conservation, quite a bit of agriculture. It's a perennial issue: what's the definition of environment?".[8]   This article uses the OECD definition for environmental sustainability explained in the following section.

3. Methodology

A set of thirty political, economic and environmental variables were tested using the logit and linear regression analysis to find patterns of global environmental aid allocation. Patterns based on what were the recipient characteristics that increased the chances of receiving aid from the World Bank between 1995 and 2006. The variables used were categorized into five topic categories, ranging from political to developmental issues, as environmental aid could also be determined by non-environmental categories (see table 1). The thirty variables used incorporate variables cited by the World Bank as key elements in their environmental policies and variables with potential explanatory

Table 1   List of selected variables used in regression analysis.

Category	Subcategoy	Variable	Stand. Dev.	Mean	Median	Min	Max	Variable name
Politica	Corruption level	Corruption Index (2005)	1.12	3.12	2.8	1.7	7.3	CI
	Democracy level	Economist's Democracy Index (2006)	1.81	5.09	5.53	1.6	8	DI
	Government effectiveness	Government Effectiveness Index (2005)	0.67	−0.47	−0.57	−2.16	1.27	GEI
	Geopolitical	South America						SAM
		Africa						AFR
		Asia						ASIA
		Population (in millions) (2007)	170	51	13	0.5	1305	PP
Economic	Economic	Foreign Direct Investment (general) (million US$) (2004)	6295	1870	310	0	54940	FDI
		Export amount (general) (million US$) (2004)	85207	33000	5000	43	655800	EX
		Import amount (general) (million US$) (2004)	78595	30738	7111	175	606543	IM
Poverty	Poverty level	Gross National Income per capita (in US$) (2005)	3784.25	2580.3	1040	100	18580	GNI
		Percentage of population under the national poverty line (various years)	16.4	38.71	37.25	4.6	71.30	PNPL
		Percentage of population living on $2a day (various years)	28.83	44.2	41.6	2	92.4	P$2D
Environ-mental	Energy	Percentage of energy usage as clean energy (2005)	8.4	6	2.8	0	43.8	CE
	Water	Percentage of population with access to improved water source (2004)	18.9	77.54	83	22	100	PIW
		Percentage of population with access to improved sanitation (2004)	25.9	59.43	59	9	100	PIS
	Air pollution	CO_2 emissions (million metric tons) (2002)	380	103.41	8.8	0.1	3507.4	CO2
	Biodiversity	GEF Biodiversity Index (2005)	18.1	10.46	3.9	0	100	GEF
	Environme-ntal policies	Number of environmental treaties ratified (until 2005)	0.94	8.2	8	4	9	NETR
		Environmental Policy Index (2005)	0.48	3.08	3	1.5	4	EPI

power due to political or economic reasons. There has been a special emphasis put on environmental variables in order to capture the exact variable which affects the allocation of funds.

The World Bank has a clear set of environmental objectives. It has been a part of its policy to focus on: pollution management and urban environmental improvements related to environmental heath, sustainable resource management (which includes land management, soil conservation, sustainable forest management and watershed management), environmental capacity building and global environmental issues (which includes issues like biodiversity and international waters) (World Bank 2000: 21‒23). Thus, the Bank represents a wide variety of focus policies, targeting the many areas of environmental assistance. Corresponding variables have been selected to verify the Bank's policies. Recipient countries with greatly degraded environments are expected to be the largest recipients of aid.

Moreover, economic variables were added because the World Bank is an economic institution which issues loans. Developing countries with higher FDIs or exports may become more likely recipients of aid, because they are more likely to repay the borrowed funds. Hence, three economic variables were tested.

However, the Bank is not a "normal" bank, as it's "mission is to fight poverty with passion and professionalism".[9] Additionally, the Bank assures that achieving poverty-focused growth and "long-term environmental sustainability are essential parts of this mission" (World Bank 2000: 8). The Bank continuously points out in its documents on poverty and the environment that "the poor depend on the environment in multiple ways".[10] Therefore, several poverty related variables have been tested. The presence of three poverty indicators in the outputs will verify the importance of the World Bank's mission.

IDA allocates aid to seventy-nine developing countries, countries which have GNI per capita less than $1 135 (the figure is calculated annually) and lack creditworthiness to borrow on market terms.[11] There is a policy emphasis made on allocation to African countries, thus, geopolitical variables have been added to illuminate any regional allocation patterns.

IDA has policies giving preference to countries with good quality of public administration and it looks at transparency, accountability, and corruption in the public sector.[12] Corruption, democracy and government effectiveness variables were added in order to verify the allocation policy. The aim of the article is to show what recipient country characteristics increase the chances of obtaining aid for the environment.

The above mentioned variables (regional, economic and political) are present in IDA's Country Policy and Institutional Assessment (CPIA) which is used, along with the country population size and GNI per capita, for IDA resource allocation.[13] The CPIA uses sixteen indicators to evaluate potential recipient countries.[14] The CPIA is disclosed to the public from 2005 and is updated annually.

Annual environmental aid amounts and the environmental definition used in the data were taken

from the OECD CRS (between August 2007 and September 2010).[15] According to the database, aid is considered environmental if:

> a) it is intended to produce an improvement, or something that is diagnosed as an improvement, in the physical and/or biological environment of the recipient country, area or target group concerned; or b) it includes specific action to integrate environmental concerns with a range of development objectives through institution building and/or capacity development.[16]

Aid figures which targeted to ensure *environmental sustainability* (a broader term than general environmental protection), were derived from the database. This includes infrastructure projects designed with integrated environmental protection components, water resource protection or sustainable forest management projects that could not be classified as general environment protection. Moreover, aid for environmental sustainability encompasses aid: only for the environment, aid for gender and environment, aid for environment and participatory development/good governance and aid for gender and environment and participatory development/good governance.

The data was collected for 100 countries during the period between 1995 and 2006 as a cumulative sum of aid (commitments US$ 2006), in order to avoid any potential annual variations. The recipient countries were chosen based on data availability, creating a bias by excluding smaller countries like Kosovo, Montenegro, Palau, Vanuatu. The data is not a time-series data, as it represents cumulative figures of aid for the sample countries. Linear and logit regressions, correlations were run using the SPSS program.

This paper presents a two-level (logit and linear) analysis of donor environmental sustainability assistance allocation patterns. The usage of the logit and linear regressions allows for the capture of variables with affect both types of distributions, which are independent from each other and, thus, allows to verify the coherency of donor's policies. The logit regression revealed the variables which influence whether a country will receive aid or not and the linear regression illuminated the variables which were significant in the extent of aid allocated. Different factors may influence the probability whether a country receives aid (or not) and different factors may influence whether a country will receive larger or smaller amounts of aid (once it already was become a recipient country). Identical sets of variables were tested for both the logit and linear regressions. Stepwise regression was used (forward elimination) to uncover statistically significant variables.

4. Regression results for the World Bank's funds for the environment

Some of the variables present in the logit and linear regression outputs are different. Thus, different variables influence whether a country will get aid and its extent. This finding also implies that the World Bank's policy is only partly coherent.

Moreover, outliers have been eliminated from the regression to avoid any data distortions (China has been eliminated due to distortions cause by large CO_2 emissions).　The results have been additionally checked for multi-correlation, eliminating any variables with the correlation coefficients higher than 0.499.　The regression models have been checked for robustness, and they do not undergo substantial changes if the sample size is decreased or increased.

Table 2 and table 3 present logit and linear regression results for the World Bank.　All the variables are significant at 1% and 5% error and the linear regression output variables explain 51% of the data.

Table 2　World Bank logit regression output.

Donor	Variable	Coefficient	t statistic	$-$2 log likelihood	Sample size
World Bank	P$2D	0.049	3.122***	66.37	72
	CI	$-$1.042	2.059**		
	fdi	0.643	2.816***		

***significant at 1%, **significant at 5%
Note: Capital letters represent linear variables and small letters are the logs of variables.

Table 3　World Bank linear regression output.

Donor	Variable	Coefficient	t statistic	Adjusted R_2	Sample size
World Bank	P $2D	0.635	4.083***	0.511	32
	ASIA	36.030	3.974***		
	co2	6.463	2.731***		

***significant at 1%
Note: Capital letters represent linear variables and small letters are the logs of variables.

The regression outputs present an array of environmental, poverty related, economic, political and regional factors which are statistically significant in aid allocation.　Developing countries with larger populations living under $2 a day, with higher corruption levels and higher levels of FDI are more likely to obtain funds for environmental sustainability from IDA.　Developing countries with larger populations living under $2 a day, located in Asia with larger CO_2 emissions are more likely to obtain *larger* amounts of environmental aid.

Yet, one has to remember that statistically significant variables do not imply causality.　The Bank may not purposefully target these countries, as donor intentions cannot be proven, thus, the pattern may be coincidental.　The following part of the article presents an analysis of the above variables and checks them against IDA policies.

5. Is the World Bank green?

As mentioned in the previous section, the World Bank has numerous environmental policies. The logit and linear regressions were run to test the policies and to reveal which environmental variables play a statistically significant role in determining aid allocation (logit regression) and the extent of aid given (linear regression). The logit regression output showed no environmentally significant variable. Therefore, no environmental variables influence whether a not a country will receive funds for the environment.

The linear regression results for the World Bank show that countries with large CO_2 emissions have a better chance of receiving larger amounts of aid. The focus on pollution is justified as "a key challenge for sustainable development".[17]   Moreover, the CO_2 indicator is an indicator of the contribution to the global air pollution (in contrast to the local air pollution). Thus, countries which get increased environmental assistance are usually the ones with more global polluting significance.

Since more polluting countries are more likely to receive increased funds from the Bank, what are the dominant project types of the World Bank? The primary interest has been in water and sanitation, energy and agriculture, as the largest amount of the Bank's funds was dedicated to these sectors (see figure 2). In the context of the Bank's mission this prioritization is also justified as the above sectors are related to poverty and productivity of the poor. Thus, countries with larger CO_2 emissions, which attract more aid, are more likely to receive increased funds in the form of water, sanitation, energy and agriculture projects.

Figure 2   World Bank's aid for the environment by sector (cumulative) 1995–2006.
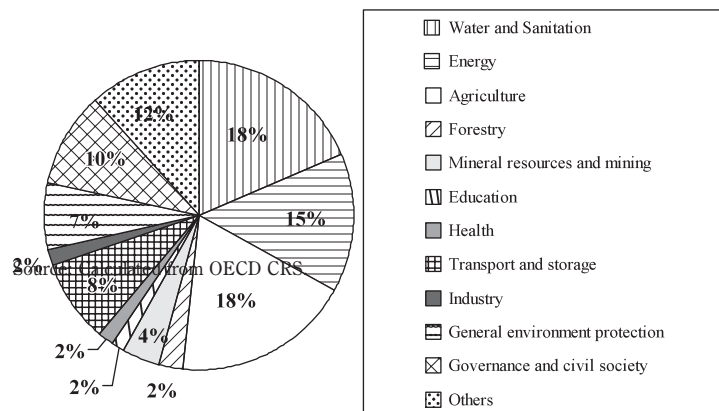
Moreover, there has been a slight increase in environmental aid for social infrastructure (which includes water provision), with a simultaneous decrease of environmental aid for economic

Figure 3   World Bank's aid for the environment by sector, 1995–2008.
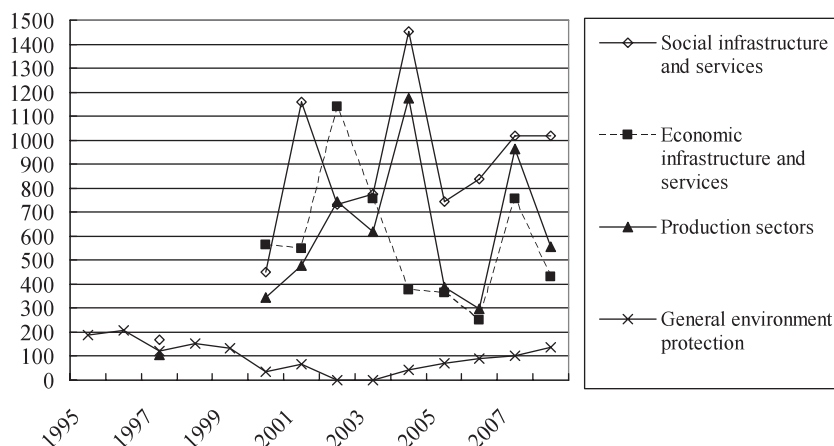
Note: Social infrastructure and services includes: education, health (and water), government and civil
      society. Economic infrastructure and services includes: transport, communication, finance and
      energy.   Production sectors include: agriculture, forestry, fishing, industry, mining and
      construction. Amounts in millions (US$2008). There are gaps in reporting prior to 1999. Source:
      Calculated from OECD CRS.

infrastructure during the period analyzed (see figure 3).

Both agriculture, energy and water management require infrastructure investment and development, therefore, there is a concentration of funds for these activities, as the Bank mainly issues environmental loans.[18] Yet, despite the large sums gathered for the sectors, they are not the dominant variables determining environmental aid allocation, as only one (energy regarding CO_2 emissions) had any explanatory power for the logit and linear regressions. They do represent, however, the types of projects IDA focuses on.

Therefore, out of all the environmental policy focus areas, it is air pollution which is the key focus area for the Bank when it allocates aid. There was no other environmental variable which showed any statistical significance, hence the regression output did not confirm any of the other environmental focus areas as important determinants of environmental aid allocation of the Bank.

6. World Bank – not driven by economics?

The Bank views environmental degradation as an obstacle to economic growth (World Bank 2000: 3). However, economic growth will not be substantially compromised because of environmental degradation as "economic growth implies environmental change in a changing social context" (World Bank 2000: 8). Moreover, achieving growth in poor countries is considered an essential part of reducing poverty, thus fulfilling the Bank's mission. Therefore, World Bank's polices provide a justification for the presence of economic motivations, as "integrating the environment into the CAS

[Country Assistance Strategy] is most successful when there is a strong connection to economic outcomes" (World Bank 2000: 25).

One economic variable proves to be statistically significant in the logit regression output. The level of foreign direct investments (FDI) is positively correlated to the chances of obtaining funds from the Bank. This finding implies that countries with a more favorable business environment with numerous financial opportunities for private companies are more likely to receive loans for the environment. The statistical significance of the FDI variable, situates aid for the environment in a broader framework of the Bank's activities. As the Bank sees a large role for private companies in developing economies it tends to favor business-friendly countries as recipients. Moreover, countries with great investments are more likely to repay borrowed funds (loans are on concessional terms). Yet, an alternative hypothesis could be made: countries with larger FDI levels are more likely to apply for World Bank funds for environmental infrastructure.

No economic variable was present in the linear output influencing the extent of aid received. Therefore, only the FDI variable is significant for the World Bank, increasing the chances of obtaining aid. However, does the Bank have any regional preferences?

IDA purposefully targets seventy-nine poorest countries, thirty-nine of which are in Africa. African countries outnumber other countries as recipients. Although, IDA has the policy of targeting African countries, there is no region of preference in the World Bank's Environmental Strategy materials for environmental funds. This was confirmed by the logit output, as no region proves significant in determining whether or not to allocate funds. However, the linear regression analysis of World Bank's aid shows a strong correlation to Asian countries. Being a region in Asia greatly increases the chances of receiving additional environmental aid from the Bank.

The World Bank, as one of the largest environmental aid donors, has been present on all continents (see figure 4). However, environmental aid has not been distributed equally, with Asian countries receiving almost half (49%) of environmental aid.

However, the proportion of environmental funds allocated to Asian and African countries has been quite balanced. As figure 5 shows, Asia and Africa have been the two dominant recipients of environmental funds. The two regions are also the majority recipients of total IDA aid, because the allocation of IDA's resources is determined primarily by each recipient's rating in the annual CPIA, population and GNI per capita. Africa is given political priority, but Asia still obtains a larger volume of funds.

The population variable, which is one of the indicators for general IDA loan distribution, did not prove statistically significant. Hence, environmental funds are not affected by country population size and population size does not affect the distribution of IDA funds for the environment.
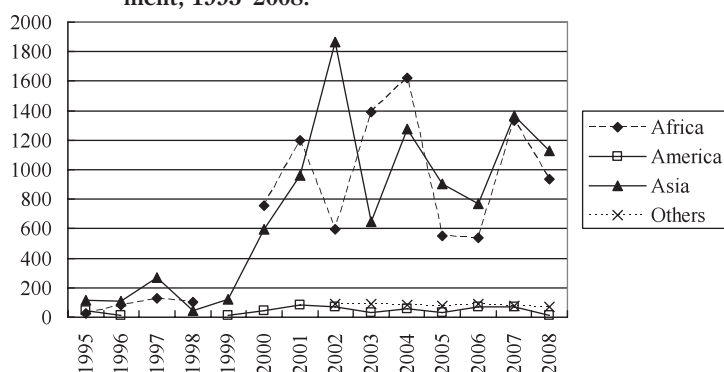
**Figure 4   Regional distribution of World Bank's aid for
the environment (cumulative) 1995–2006.**
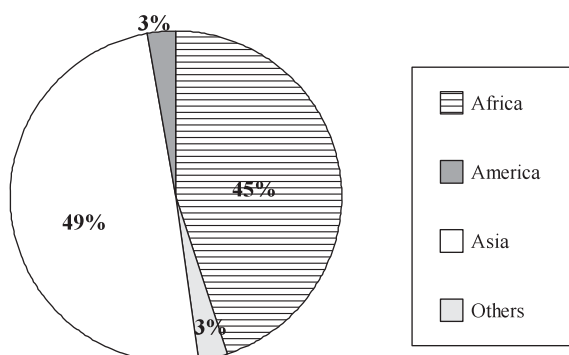
Note: America includes North, Central and South America. Others
      includes Europe and Oceania.
Source: Calculated from OECD CRS.

**Figure 5   Regional distribution of World Bank's aid for the environ-
ment, 1995–2008.**

Note: Amounts in millions (US$2008). America includes North, Central and South
      America. Other includes Europe and Oceania. Data prior to 1999 is incomplete.
Source: Calculated from OECD CRS.

7. The World Bank and politics

The Bank itself is aware that corruption is a developmental problem (World Bank 1998: 1). The
World Bank's own evaluation report talks of inadequate controls against corruption in its operations,
which implies that the Bank does not have adequate safeguards to protect its aid from being misused
(World Bank 2009: xviii).   Therefore, the Bank has made plans to mainstream concerns about
corruption into its lending practices (World Bank 1997: 51).

IDA uses the Country Policy and Institutional Assessment (CPIA), along with population size and
GNI per capita, to establish priority recipients. The CPIA has sixteen points of evaluation, with the

sixteenth being "transparency, accountability, and corruption in the public sector". How does corruption influence the Bank's environmental aid allocation?

Despite all the mentioned drawbacks of lending to corrupt countries, countries with higher levels of corruption are more likely to receive environmental aid from the World Bank. It was the only political variable which proved significant in the logit regression output. No political variable was significant in the linear regression output, revealing that countries which receive increased amounts of aid are not affected by political factors analyzed in the model.

Why do corrupt countries receive environmental aid from the World Bank? Corrupt practices do not help resolve environmental problems and in many countries, corruption is considered to be one of the principal causes of environmental destruction. Al Gore points out the case of the rainforest of Sarawak, East Malaysia, were logging concessions were sold personally by the minister of environment (Gore 1992: 180). However, environmental assistance from the Bank reflects broader activities of the Bank which has policies about specifically working with corrupt countries on certain issues. The World Bank explains in its documents that good governance and anti-corruption are important elements of its poverty alleviation mission and for this reason there are numerous anti-corruption programs undertaken by the World Bank.[19] Thus, to work on anti-corruption initiatives, one has to work with corrupt countries.

Moreover, in the 2007 Implementation Plan for Strengthening Bank Group Engagement in Governance and Anticorruption, the Bank assured that it "is committed to remaining engaged in the fight against poverty, and seeking creative ways of providing support, even in poorly-governed countries— 'don't make the poor pay twice'" (World Bank 2007: 33). According to the Bank's Project Database, from 1995–2006, $3 billion were spent on programs with anti-corruption components (for IDA alone). Therefore, environmental sustainability assistance may be situated in this broader policy framework.

Should more corrupt countries be receiving environmental assistance, because of a possible increased level of environmental degradation? This research reveals that more corrupt countries do not show additional signs of environmental degradation. However, the more a country is corrupt-free, the higher the access of a population to clean water (correlation coefficient 0.512) and to adequate sanitation (correlation coefficient 0.437). Therefore, the more corrupt countries will have a smaller access. If one takes fifteen of the most corrupt countries and fifteen of the least, the difference between their access to clean water and sanitation will be respectively: 31.1% and 38% of the population (see figure 6).

Thus, the World Bank may ignore corruption practices and direct funds into water and sanitation sectors (as these sectors constitute 18% of the Bank's global environmental portfolio), because there is a greater need for these types of projects in more corrupt countries.. The specific global focus on water and sanitation can be the reason why corruption issues do not play such an important role in

**Figure 6　Comparison between corrupt and less-corrupt
country water and sanitation access.**
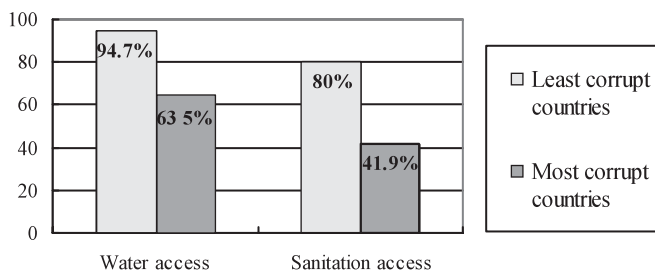
Source: Data from researcher's database.　Based on Transparency International.
Corruption Perceptions Index 2005.　Web. 4 June 2010.
<http://www.transparency.org/policy_research/surveys_indices/cpi/
2005>, and World Bank. *World Development Indicators 2007*.　Washington,
2007: table 2.15.

environmental aid allocation (which does not imply that they do not have any effect on implemented
projects in those sectors).

　　Additionally, the corruption variable is highly positively correlated with government effectiveness
(0.839), therefore the higher the corruption perception index (the *less corrupt* a country is), the higher
the level of government efficiency.　Yet, the government effectiveness variable did not prove
significant on its own.　The World Bank's interest in capacity building can be viewed within this
context, as it tries to increase capacity of institutions, it will deal with countries that are also corrupt.

　　However, by allocating environmental aid to more corrupt countries, the Bank is sending an
opposing signal to its strategy.　Moreover, allocating assistance to corrupt countries undermines its
effectiveness, and remains a controversial issue (although more corrupt countries are in greater need
of such assistance in water and sanitation sectors).

　　Despite that "worldwide trends pose new challenges and opportunities for environmental
stewardship" and one of the trends is the spread of democratization, the level of democracy is not a
significant factor is World Bank aid allocation (World Bank 2000: 28).　The largest World Bank
environmental aid recipients are not the ones with the highest levels of political freedom (the
democracy average for both groups is 5).　Both, the logit and linear World Bank regression outputs
confirm that the World Bank's environmental aid distribution is not influenced by other (aside from
the corruption level) political variables, snch as the level of democracy or religion, which signifies that
other (non-political) types of variables influence aid distribution.

8. The World Bank is linking environment with poverty

　　One of the World Bank's principles is "focusing on environmental interventions benefiting the

poor" (World Bank 2000: 6). As the Bank's primary mission is poverty alleviation, environmental problems are viewed from the poverty context and resolving them has the goal of accomplishing the primary mission. As the Bank underlines the importance of its overall goal:

> The linkages between environmental conditions and human welfare are extraordinarily complex. Human development depends on the ability of the environment to provide a variety of goods and services and to sustain these into the future. People rely on their environment for food, drinking water, shelter, energy, and medicine. ... A sound strategy to ensure environmental sustainability must therefore be an important element of the poverty-focused development strategy of the World Bank Group (World Bank 2000: 8).

As the fragment emphasizes, environmental sustainability is considered as an "element"—not a goal in itself—of the Bank's main mission. Therefore, does the Bank allocate assistance for environmental sustainability to the poorer countries? Or do the policies remain unconfirmed?

Both the linear and logit regression outputs revealed that the $2 a day poverty variable is statistically significant. Countries with larger populations living on $2 a day are more likely to receive environmental aid from the World Bank and they are also more likely to received increased amounts of aid. These poverty-focused outputs confirm the strong policy focus of the Bank on poorer countries. Poverty is an important issue for the Bank as it present in both the outputs and signifies that the Bank's environmental funds are part of the broader operational framework.

However, should the World Bank's environmental loans be allocated to countries with larger populations living on $2 a day? Although, poverty alleviation is the mission of the Bank, the poorest countries may not need specifically aid for the environment, as they may not suffer from exceptional levels of environmental degradation.

As the author's database shows, the $2 a day poverty variable is negatively correlated to access to clean water (-0.721) and sanitation (-0.831) and positively correlated to the deforestation rate (0.398). Therefore, the larger the population living on $2 a day, the smaller the access to clean water and sanitation and the higher the deforestation rate. This is additionally visible if one takes the fifteen countries with the largest population percentage living under $2 a day and compares to fifteen countries with the smallest percentage living under $2 a day (see figure 7).

Countries with larger percentages of the population living for $2 a day should receive environmental assistance as they suffer from greater levels of environmental degradation. On average, between the countries with the largest and smallest percentage of the $2 a day population there is a difference of additionally 30% of the population not having access to clean water, 49% of the population not having access to adequate sanitation and the annual deforestation rate difference is 2%.

It is visible from the Bank's policies and regression outputs that aid for the environmental sustainability is treated as a part of the broader allocation framework of the world Bank. Poverty indicators are more significant than environmental ones in regard to environmental aid allocation,

Figure 7 Size of $2 a day population and environmental degradation indicators.
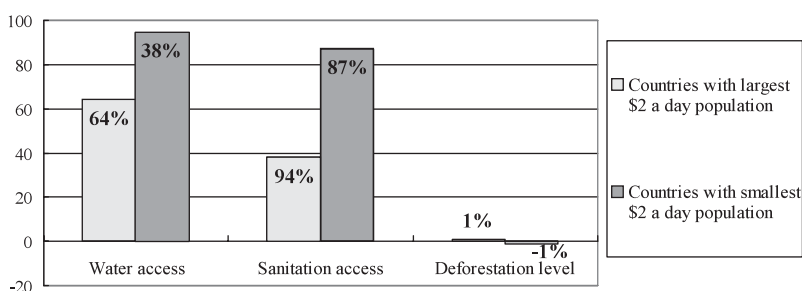
Note: Substitution of the $2 a day variable with the national poverty variable provides a similar
distribution.

Source: Calculated from author's database. Based on World Bank. *World Development Indicators 2007*. Washington, 2007: table 2.15 and table 3.4.

Table 4   Top five World Bank aid recipients, 1995–2006.

	General aid	Environmental aid
World Bank (IDA)	*India* *Vietnam* Bangladesh Pakistan *Ethiopia*	*India* *Vietnam* Tanzania *Ethiopia* Sri Lanka

Note: Countries in italics are present in both types of aid.
Source: Calculated from OECD CRS.

because they appear in both regression outputs and they are clearly stated in the Bank's documents as the top priority area. If the five top recipients of IDA's aid are compared for general and environmental aid, there is a significant overlap (see table 4). Three of the five top aid recipients remain the same for both groups. Thus, aid for the environment is strongly connected to overall IDA funds.

9. Conclusions

The World Bank's environmental sustainability funds are allocated according to environmental (CO_2 emissions) and non-environmental categories (corruption and FDI levels, Asian countries and the $2 a day poverty). Apart from environmental issues, political, economic and poverty motivations also play a role in aid allocation. Overall, funds for environmental sustainability are placed within the Bank's poverty alleviation mission. IDA has a policy on focusing on poor countries (particularly in Africa) which are in need of external financing. Environmental funds distributed by IDA only party confirm IDA's policies: poor countries are the most likely recipients of environmental aid, yet Asian countries receive greater amounts than African. More corrupt countries are also more likely to

receive aid (despite IDA's CPIA).

Although, the presence of some economic, poverty or regional variables is justified, due to the form of aid distributed (mainly non-interest loans) and the donor's mission, the current aid schemes should be reexamined whether they present the most optimal solutions possible to decrease environmental degradation. Environmental aid should have value in itself and be primarily driven by environmental indicators. Increasing sums of aid for the environment, in the situation of unchanged current distribution patterns, may not produce the desired results (especially in regard to corrupt countries). If the Bank remains focused on environmental factors, funds to mitigate climate change can prove to be more effective and environmental aid efficiently allocated. It is, thus, recommended that the Bank reexamines the current distribution pattern.

However, the paper explains only 51% of the allocation which leaves room for further analysis. The low percentage indicates the complexity of the Bank's allocation pattern and arising challenges in trying to capture it.

Notes

1 According to OECD CRS database, between 1995 and 2008 Japan allocated over $56 billion of aid for "only for the environment", while the World Bank (IDA) was second with over $10 billion.

2 See: Hicks, Parks, Roberts and Tierney 2008 and Jack M. Hollander. *The Real Environmental Crisis: Why Poverty, Not Affluence, Is the Environment's Number One Enemy.* California: University of California Press, 2003. Additionally, to achieve the goals of Agenda 21, $46 billion a year are required, however, only $6.9 billion are distributed annually (Hicks, Parks, Roberts and Tierney 2008: 52).

3 A large number of publications exists concerning the environment-poverty nexus. There is an emerging consensus that the two factors are interconnected and could be mutually enforcing. For further reference see: Robin Broad. "The Poor and the environment: friends or foes?". *World Development.* Vol. 22. No. 6, 1994: 811–822; Sara Scherr. "A downward spiral? Research evidence on the relationship between poverty and natural resource degradation". *Food Policy.* Vol. 25, 2005: 479–498 and World Bank. *Poverty and the Environment*: *Understanding Linkages at the Household Level.* Washington, 2008.

4 Bradley C. Parks and Michael J. Tierney. 2004. "Cooperation or Collusion: Explaining Bilateral and Multilateral Environmental Aid to Developing Countries." American Political Science Association Meeting. Chicago. 1–5 September 2004. Conference paper. See also: Hicks, Parks, Roberts and Tierney 2008. Both studies are based on the PLAID database (available at <http://www.aiddata.org/home/index>).

5 Among the academic critics concerning environmental issues are: Bruce Rich, Zoe Young, Phillipe Le Prestre, Jonathan A. Fox, Dave Brown.

6 Mark Lundell, Sector Leader of World Bank Brazil. Personal Interview. 14 December 2009.

7 See: Sanjeev Khagram. *Dams and Development: Transnational Struggles for Water and Power.* Ithaca and London: Cornell University Press, 2004 and Maude Barlow. *Blue Covenant. The Global Water Crisis and the Coming Battle for the Right to Water.* London: The New Press, 2007: 21–22.

8 Mark Lundell, Sector Leader of World Bank Brazil. Personal Interview. 14 December 2009.

9 World Bank. Web. 11 November 2009. <http://go.worldbank.org/3QT2P1GNH0>.

10 World Bank. Web. 1 February 2010. <http://go.worldbank.org/PZ1VKX8XD0>.

11 World Bank. Web. 20 September 2010. <http://go.worldbank.org/F5531ZQHT0>.

12 World Bank. *IDA's Performance-Based Allocation System for IDA15.* Web. 22 September 2010.

<http://siteresources.worldbank.org/IDA/Resources/IDA15Annex1.pdf>.

13   World Bank. 20 September 2010. Web. <http://go.worldbank.org/F5531ZQHT0>.

14   The CPIA rates countries against a set of sixteen criteria grouped in four clusters: (a) economic management; (b) structural policies; (c) policies for social inclusion and equity; and (d) public sector management and institutions. World Bank. *CPIA 2009 Assessment Questionnaire*. Web. 20 September 2010.
     <http://siteresources.worldbank.org/IDA/Resources/73153–1181752621336/CPIA09CriteriaB.pdf>.

15   OECD Creditors Reporting System. Web. 20 September 2009.
     <www.oecd.org/document/0/0,2340,en_2649_3444 7_37679488_1_1_1_1,00.html>.

16   OECD. Web. 23 September 2009. <www.oecd.org/dataoecd/4/6/38025362.pdf>.

17   World Bank. Web. 23 September 2009. <http://go.worldbank.org/HINX1JVCK0>. Additionally, the Bank emphasizes the severity of pollution problems: "acute respiratory infections from indoor air pollution ... are estimated to kill one million children annually in developing countries. A particularly heavy toll falls on poor families in South Asia (42% of total deaths) and Africa (28%). This has prompted the World Bank to include reduction of indoor air pollution as a critical element of its environment strategy" (World Bank. Web. 23 September 2009. <http://go.worldbank.org/NHFEVXQFE0>).

18   The percentage of infrastructure projects has been rising since 1991. In 2008 it reached 40% of all projects (World Bank 2008a: 58).

19   World Bank. Web. 1 March 2010. <http://go.worldbank.org/KUDGZ5E6P0>.

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