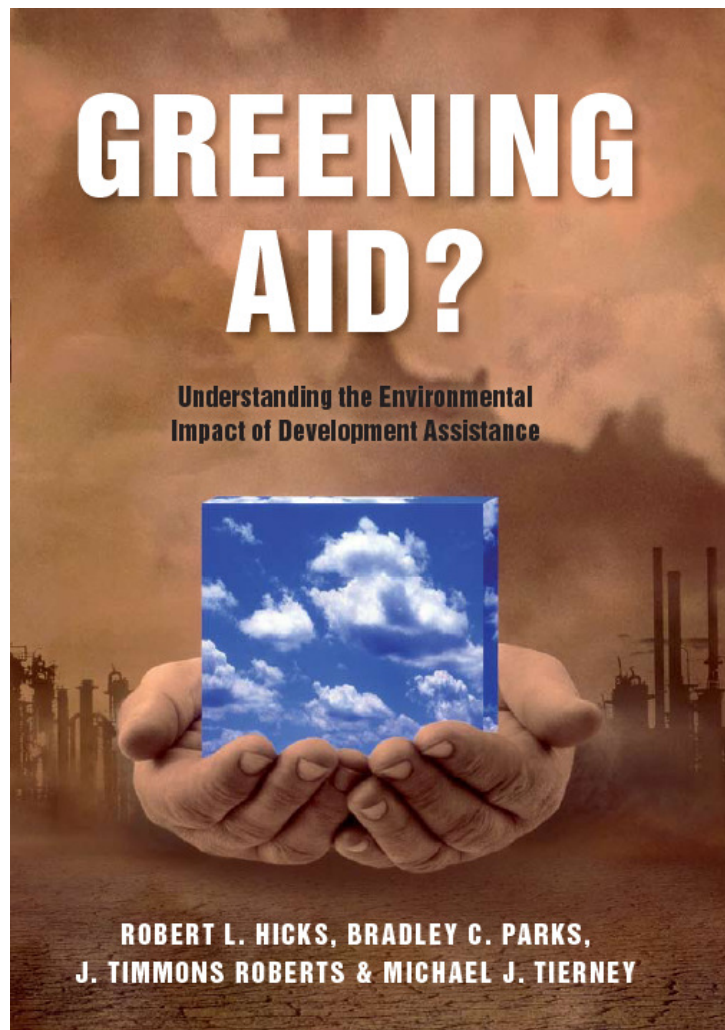


# **Greening Aid?**

## **Understanding the Environmental Impact of Development Assistance**



**Robert L. Hicks, Bradley C. Parks, Timmons Roberts,  
and Michael J. Tierney**



# Why Does This Topic Matter?

1. A lack of reliable information means limited accountability
2. Environmental aid is key to securing developing country participation in environmental agreements
3. Allocation patterns shape the expected effectiveness of environmental aid



# Previous research on environmental aid lacks reliable data...

- “Data are simply not collected and analyzed in a manner that informs policy makers interested in the issue”
  - The Intergovernmental Panel on Climate Change, 2001
- “ [We face] a number of difficulties in calculating the precise amount of environmental expenditure. There is no generally accepted definition of an ‘environmental project’.”
  - European Commission, 2006
- “Available data are highly distorted by the lack of any common definition of what is or is not ‘environmental assistance.’”
  - Connolly et al., 1996, *Institutions for Environmental Aid*



# The Project-Level Aid (PLAID) Research Initiative

- Launched in 2003
- Bilateral and multilateral aid data collected at the project level for 1970-2000 period
  1. 21 major bilateral donors, 40+ multilateral donors
  2. Total Project Count: 428,663
  3. Total Dollars: \$2.3 trillion
- All projects systematically coded based on their expected environmental impact

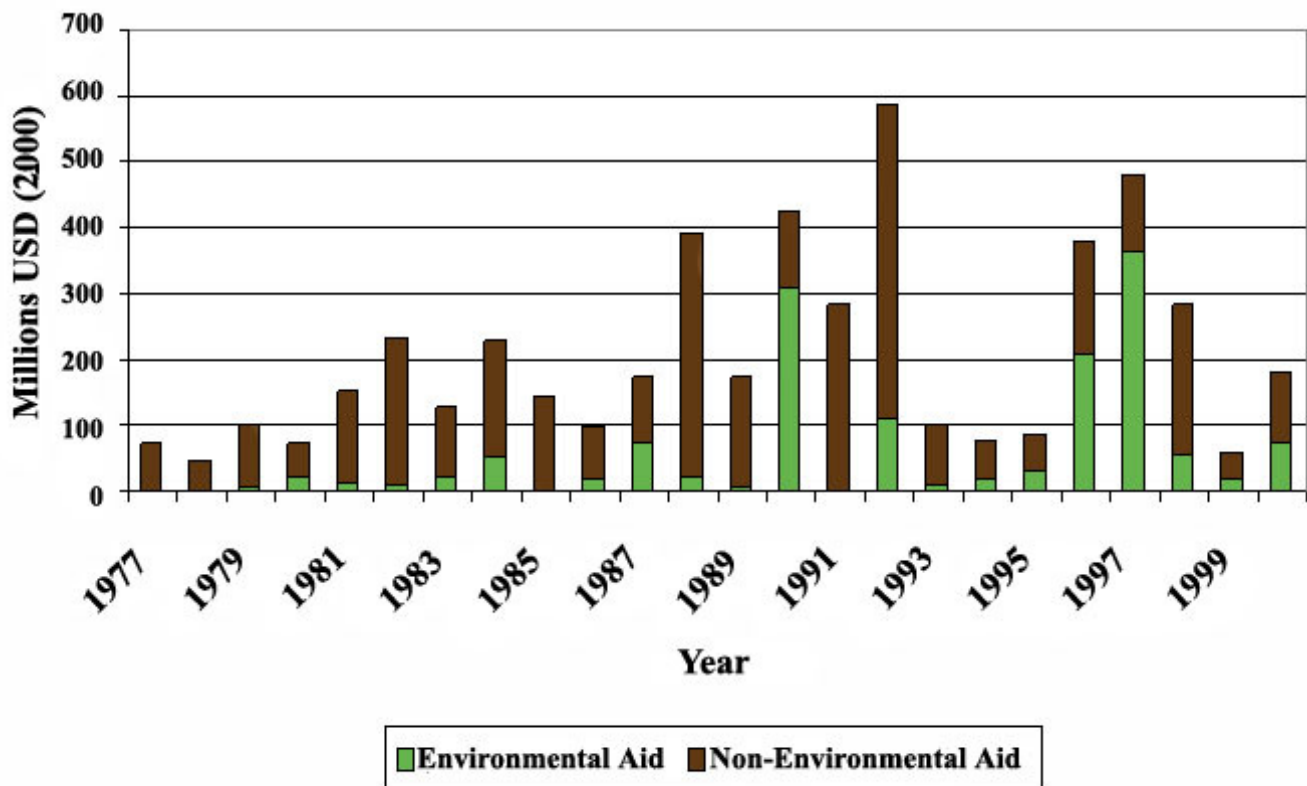


# Why is project-level coding important?

PLAID coding:

1. Is based on actual project descriptions
2. Does not assume homogenous sectors

**PLAID Coding of the CRS Forestry (31220) Sector**



# All projects double-coded into three primary categories

## **Environmental Strictly Defined (ESD) Projects:**

Access to Clean Water  
Biodiversity  
Carbon Dioxide Reduction  
Ecosystem Preservation  
Forestation/Reforestation  
Renewable Energy  
Soil Conservation

## **Dirty Strictly Defined (DSD) Projects:**

Air and Road Transport  
Chemicals  
Dams  
Industries: brick-making,  
plaster, rubber, etc  
Logging  
Mining  
Natural Gas, Oil and Coal

## **Neutral (N) Projects:**

Banking/Finance  
Business Development  
Disaster  
Relief/Prevention  
Education  
Food Safety/Quality  
Health  
Trade



# Greening Aid: 4 Research Questions

1. Has aid been greened, and if so, by how much?
2. Which donor governments spend the most on foreign assistance for the environment and why?
3. Why do some donor governments delegate responsibility for allocating and implementing environmental aid to multilateral agencies when they could simply give it away themselves?
4. Which countries receive the most environmental aid and why?



# Research Question #1

Has aid been greened, and if so, by  
how much?



# Has foreign assistance been greened since Rio?

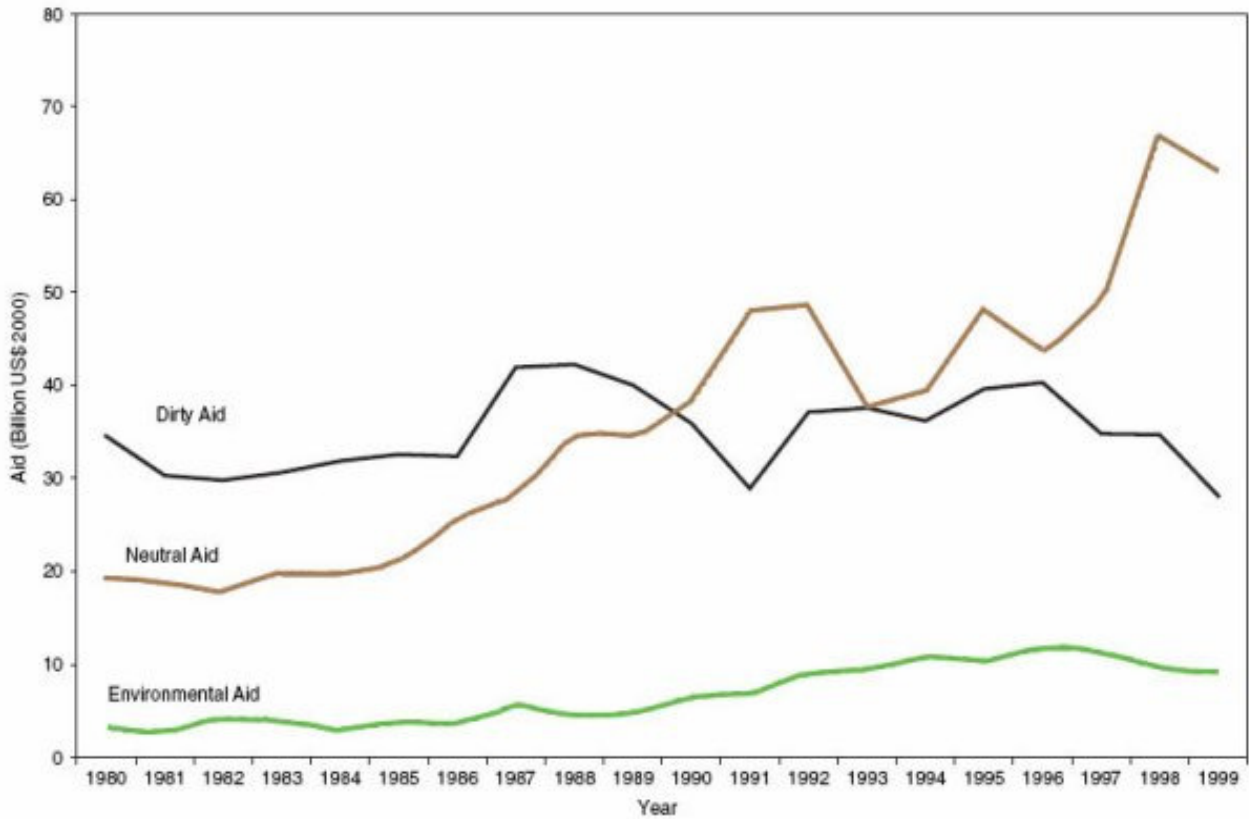
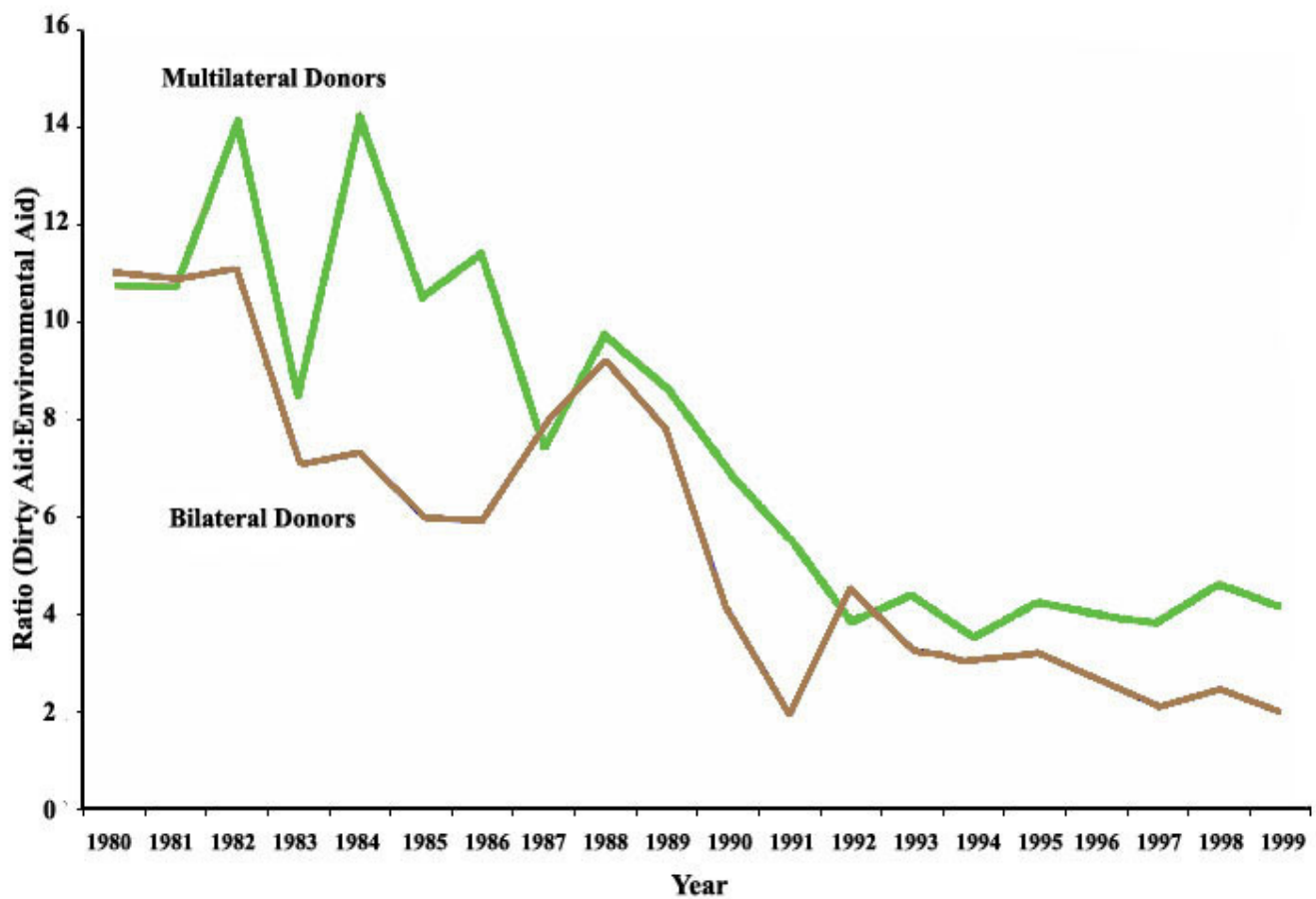


Figure 2.2. Total aid flows, bilateral and multilateral agencies combined, 1980-1999, comparing total funding for projects with likely positive environmental impacts, likely negative impacts ('dirty'), and those neutral or uncertain in impacts



# A “Greening Index” for Bilateral and Multilateral Agencies

Ratio of Dirty Aid to Environmental Aid, (1980 - 1999)



# All environmental projects also coded along green/brown dimension

## **“Green” Projects (addressing Regional and Global Public Goods)**

Carbon Dioxide Reduction  
Ecosystem Preservation  
Energy Conservation  
Energy Efficiency  
Renewable Energy  
Biodiversity  
Reforestation  
Population/ Family Planning  
Acid Rain  
Wildfire Protection  
Eco Tourism

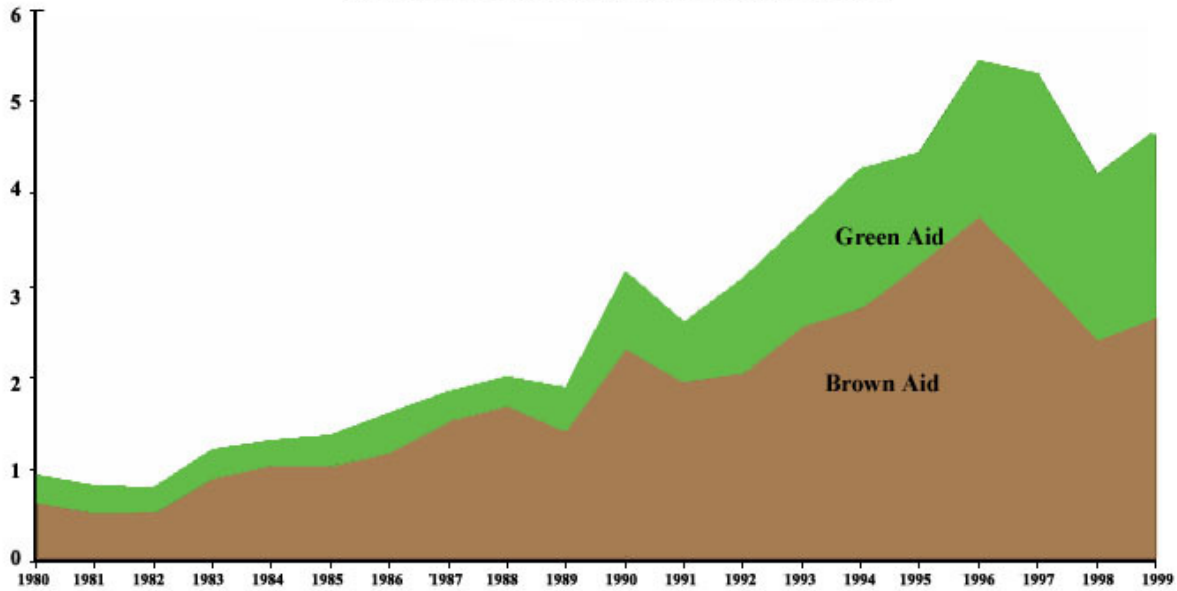
## **“Brown” Projects (addressing Local Public Goods)**

Clean water  
Sewage/Wastewater Treatment  
Urban Environmental Issues  
Environmental Health Hazards  
Soil Protection/Conservation  
Erosion Control  
Land Reclamation  
Drought Control  
Soil Fertility  
Solid Waste Treatment  
Air pollution (not climate  
change or acid rain)  
Coastal Management  
Natural Resource Management  
Safe Handling of Toxic  
Materials

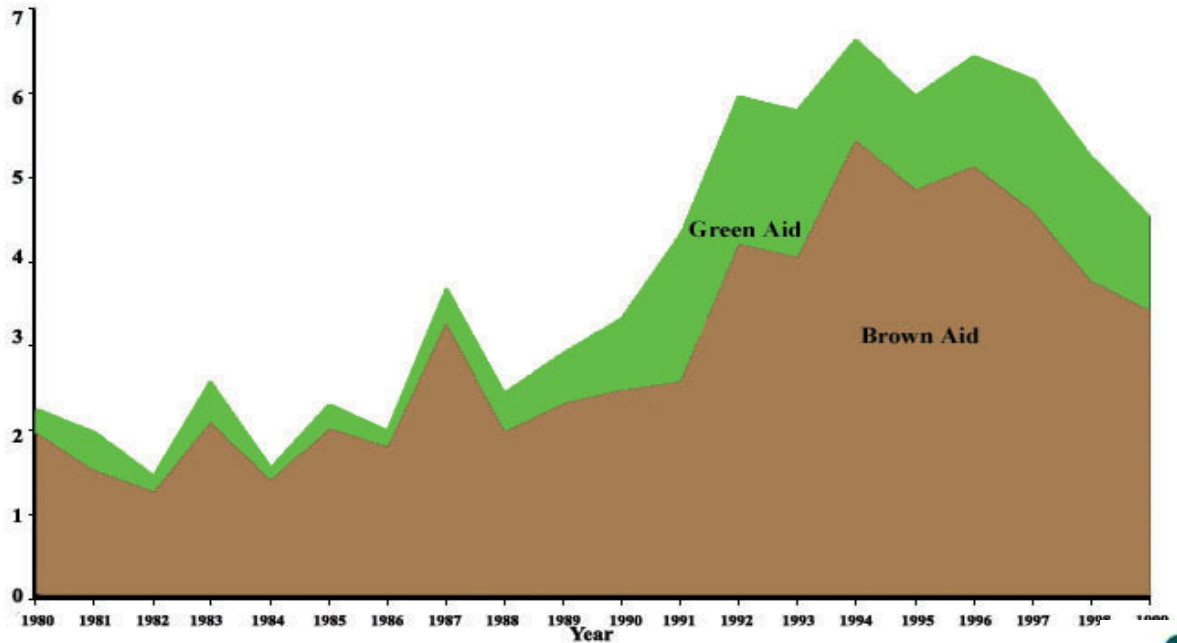


# Do local or global environmental issues get more attention?

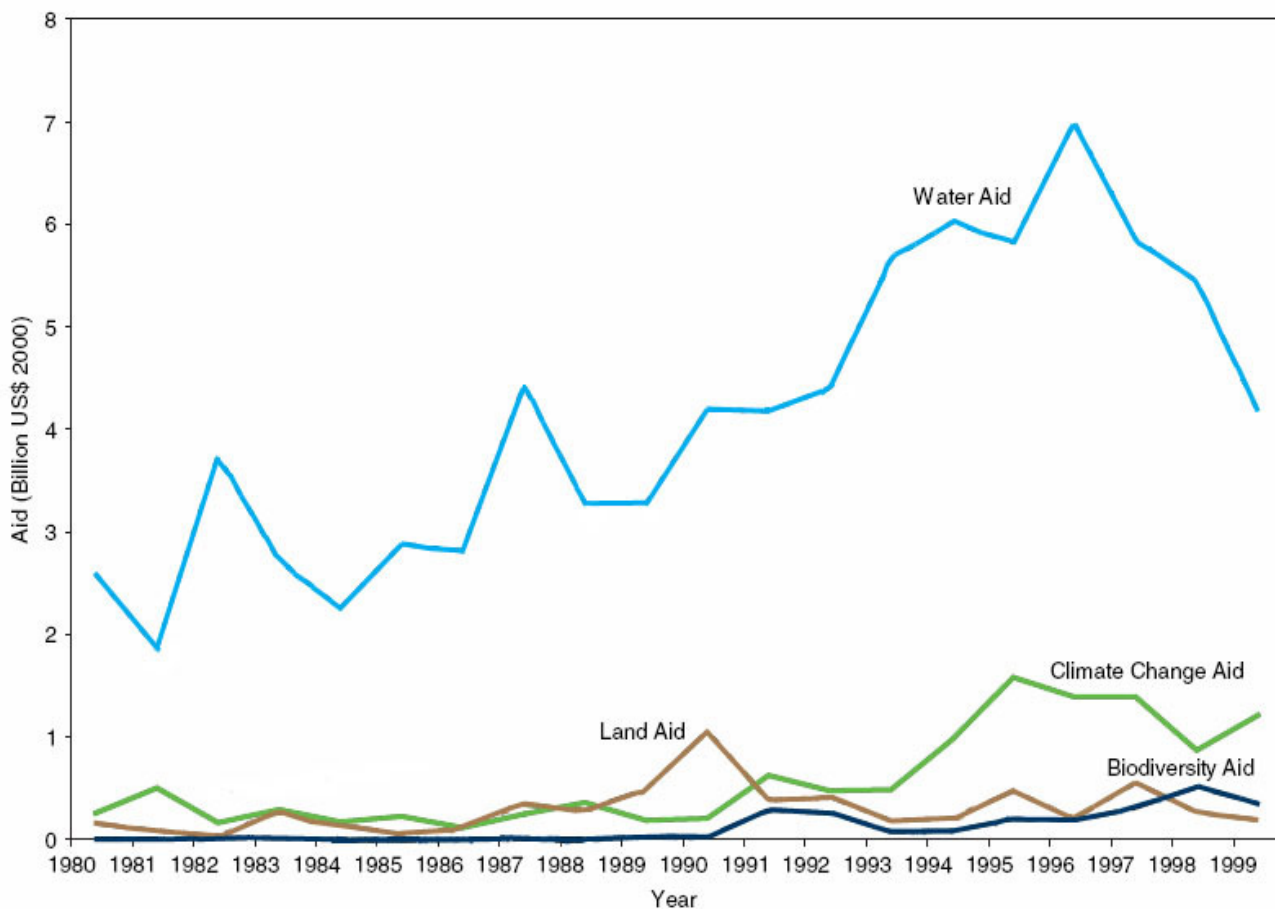
Composition of Bilateral Environmental aid 1990-1999



Composition of Multilateral Environmental aid 1990-1999



# A Closer Look at Four Environmental Sub-Sectors: Water, Biodiversity, Climate Change, and Desertification



# The Rio Bargain: Promises vs. Performance

- At Rio, 700-page “Agenda 21” document was designed to break impasse between developed and developing countries. It called for a significant increase in “new and additional” ODA for global *and* local environmental problems

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**Table 2.1.** 1990s environmental aid by sector: comparison of agenda 21 prescriptions for needed aid with actual dose delivered, four sectors.

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	Dose prescribed \$b/yr	Dose received \$b/yr	Percentage of dose received
Water	6.1	5.6	92%
Land	18.2	0.35	2%
Climate change	20	0.84	4%
Biodiversity	1.75	0.125	7%
Total	46.05	6.915	15%

---



## Research Question #2:

Which donor governments spend the most on foreign assistance for the environment and why?



# Which Donors are Greenest?

<b>Rank</b>	<b>Country</b>	<b>Environmental Aid Per Capita (1995-1999)</b>
1	Denmark	\$181.26
2	Norway	\$84.26
3	Germany	\$81.86
4	Netherlands	\$70.32
5	Japan	\$70.22
6	Sweden	\$50.13
7	Switzerland	\$43.11
8	Finland	\$30.95
9	Austria	\$29.93
10	France	\$24.46
11	Australia	\$22.80
12	United Kingdom	\$19.02
13	United States	\$16.38
14	Canada	\$11.53
15	Belgium	\$9.32
16	Spain	\$5.39
17	Italy	\$3.46
18	New Zealand	\$0.84
19	Portugal	\$0.23
20	Luxembourg	\$0.00



# Which Donors are Greenest?

<b>Environmental Aid as a Percentage of Total Bilateral Aid Portfolio</b>				
<b>Rank</b>	<b>Country</b>	<b>1980-84</b>	<b>1995-99</b>	<b>Δ in %</b>
1	Denmark	11.2%	21.9%	10.7%
2	Germany	4.7%	15.6%	10.9%
3	Finland	5.7%	14.0%	8.3%
4	Japan	4.9%	13.8%	8.9%
5	Austria	0.0%	12.7%	12.7%
6	Netherlands	6.7%	12.3%	5.6%
7	United States	5.3%	11.2%	5.9%
8	Switzerland	4.3%	10.1%	5.8%
9	France	3.4%	10.1%	6.6%
10	United Kingdom	1.3%	9.4%	8.1%
11	Australia	1.8%	9.3%	7.5%
12	Norway	10.1%	8.2%	-1.9%
13	Sweden	5.7%	8.1%	2.5%
14	Spain	0.0%	5.7%	5.7%
15	Italy	2.7%	5.5%	2.8%
16	Canada	4.1%	5.4%	1.3%
17	Belgium	1.5%	3.9%	2.4%
18	New Zealand	6.6%	3.7%	-2.9%
19	Portugal	0.0%	0.4%	0.4%



# Dirty Aid/Environmental Aid Ratio: United States

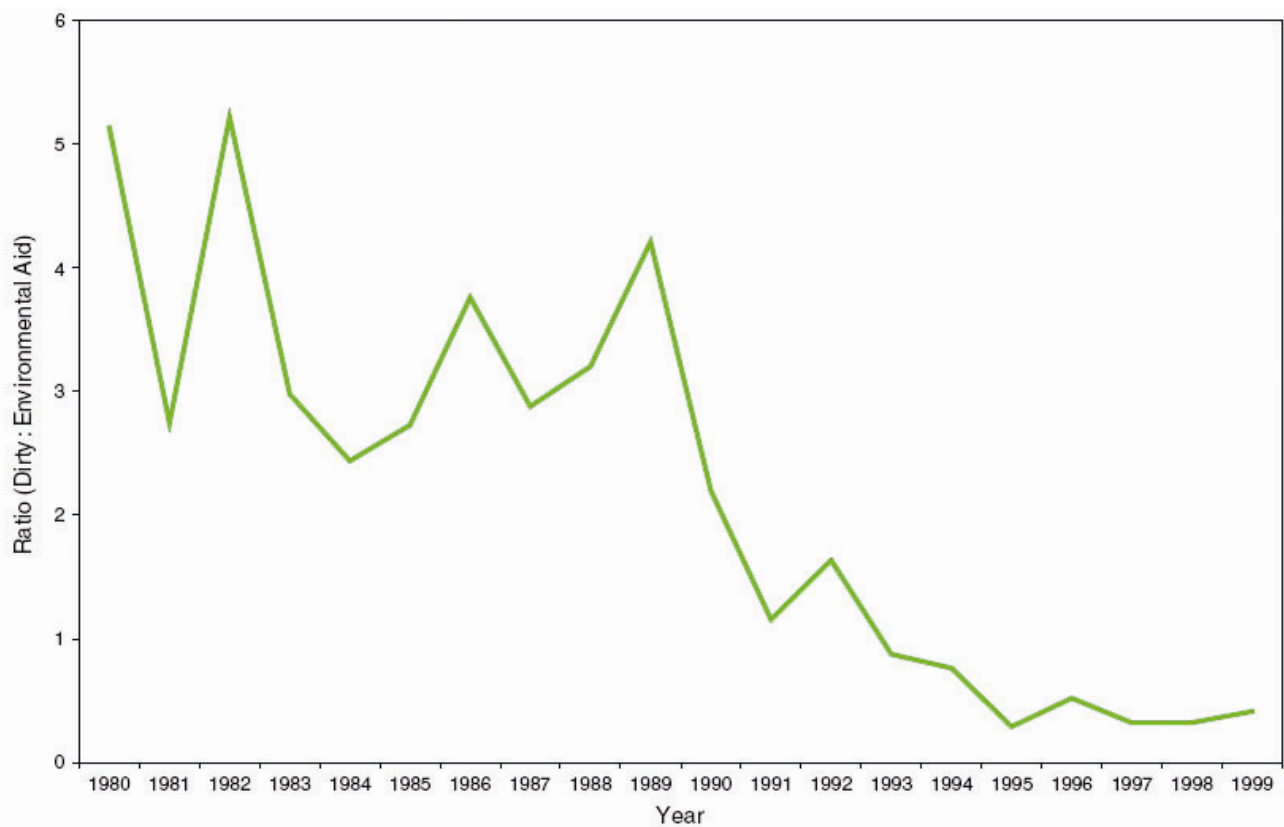


Figure 5.6a. Ratio of 'dirty' to environmental aid given by United States of America, 1980-1999



# Why are some donors greener than others?

- *Factors that might explain commitment to/ interest in environmental projects*
  1. **National wealth** (GDP/capita)
  2. **Post-materialist values** (World Values Survey)
  3. **Domestic environmental policy preferences** (EPI)
  4. **International environmental policy preferences** (WEF compliance with env. treaties)
  5. **“Green and greedy coalitions”** (enviro NGO concentration \* relative size of enviro tech industry)
  6. **Dirty industry lobbying strength** (IGC)
  7. **Domestic political institutions** (leftist party strength, corporatism, veto players, checks and balances)



# Statistical Findings

1. Our models **better explain** the drop in “dirty” aid than the rise in environmental aid
2. **Wealthier** and more **post-materialist** countries invest less in dirty projects, but not necessarily more in environmental projects
3. Countries with stronger “**coalitions of the green and greedy**” spend less on dirty aid and more on green aid
4. Countries with higher rates of **environmental treaty ratification and compliance** have larger environmental aid budgets



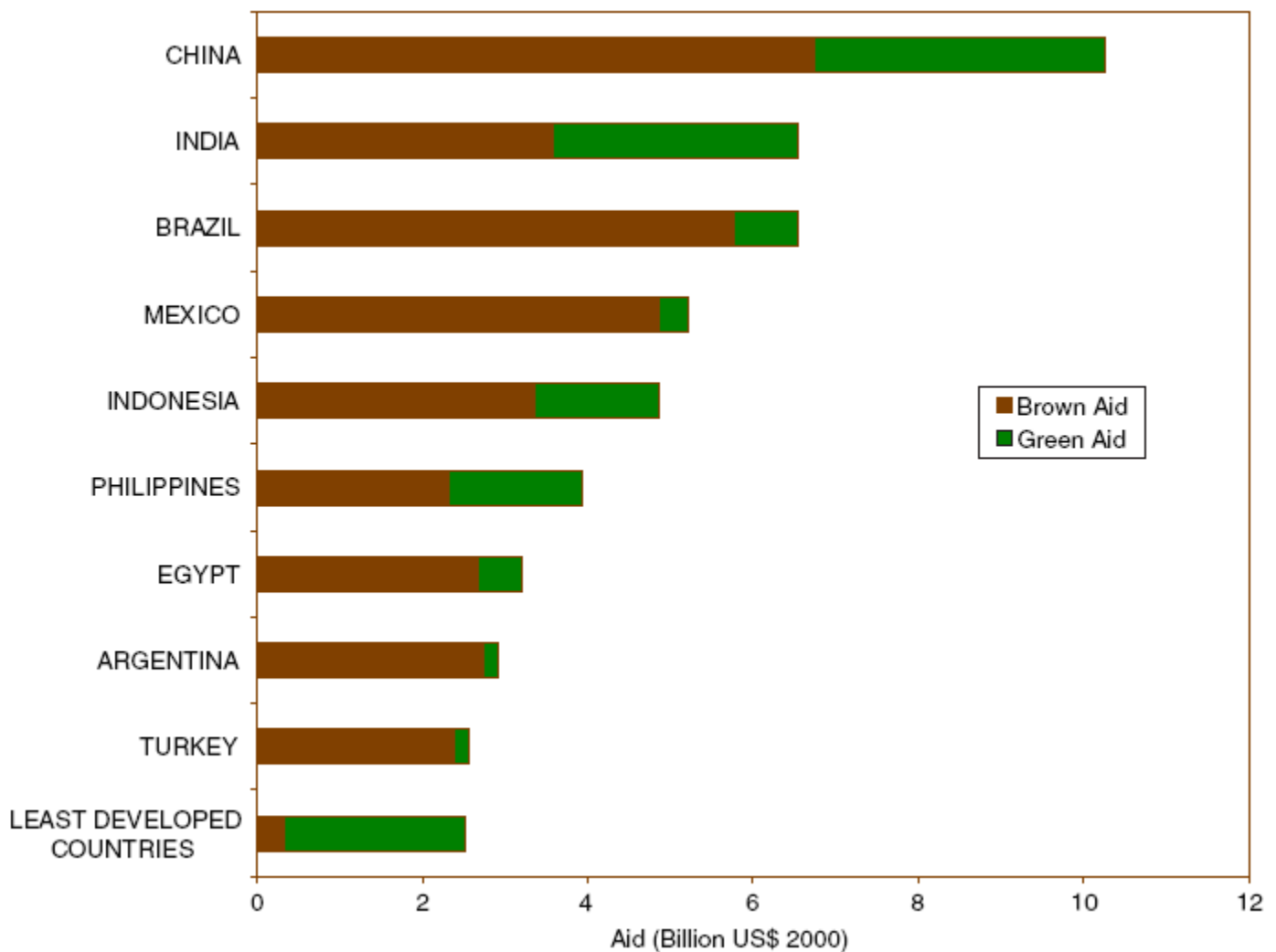
# Research Question #4

Which countries receive the most environmental aid and why?



# Who are the biggest recipients of environmental aid?

*Top Ten Environmental Aid Recipients, 1990-1999*



# Why do some countries receive more environmental aid than others?

*Factors that might explain inter-recipient allocation patterns*

1. **Global environmental significance** (natural capital stock)
2. **Local environmental damage** (water quality index)
3. **Regional (environmental) significance** (physical distance between donor and recipient)
4. **Participation in international environmental agreements** (ratification of 9 major treaties)
5. **Transparency/availability of environmental information** (CITES reporting requirements met)
6. **Strength of public institutions** (Govt. Effectiveness)
7. **Sound economic policies** (Regulatory Quality)
8. **Democracy** (POLITY IV)
9. **Colonial legacy** (status as of 1945)
10. **Recipient need** (poverty; population size)
11. **Political loyalty** (UN voting patterns)
12. **Existing commercial relationships** (trade between donor and recipient)



# Statistical Findings

1. Countries of **global environmental significance** receive more green aid from bilateral and multilateral donors
2. Physical proximity to donor (possible proxy for **regional environmental significance**) is a good predictor of brown aid, but not green aid
3. **Local environmental damage** is not a strong predictor, but significant measurement problems
4. Donors appear to screen for **recipient credibility** (i.e. effective governments, strong environmental policies and institutions) more extensively at the “gatekeeping” stage than the “amount” stage of the allocation process
5. Bilateral donors favor recipient countries with **higher rates of environmental treaty ratification** when doling out green aid



# Statistical Findings (cont.)

6. Bilateral **trading partners** are favored (across all sectors)
7. **Colonial ties** matter (across all sectors)
8. Proxy for **political loyalty** (UN voting record) yielded unexpected results: recipients that vote similarly to donor country receive *less* environmental (and dirty) aid.
9. Bilateral donors target **poorer countries** more effectively than multilateral donors
10. Bilateral and multilateral donors favor **more populous countries**



# Conclusions and Future Directions



# The Partial Greening of Foreign Assistance

1. Bilateral environmental aid increased by 370% -  
- and multilateral environmental aid by 140% --  
over the 80s and 90s
2. But environmental aid remains a small fraction  
of total aid: at the end of 20<sup>th</sup> century,  
environmental aid leveled off just below \$10b  
(approximately 10 percent of aid)
3. Since the 1970s, dirty aid has dropped from  
55% of aid to ~30%
4. Environmentally-neutral aid has skyrocketed  
from \$15b in 1980 to 50b, and now constitutes  
the majority of foreign aid
5. Tremendous variation across donors



# Limitations of the Study

1. Cross-national data masks significant variation across regions and districts
2. Models assume allocation in one aid sector doesn't influence others
3. Variation in grant element across projects
4. Mainstreaming of green aid
5. Possible “migration” of dirty projects to export promotion agencies, political risk insurance agencies, and private banks
6. Coding scheme says nothing about *actual* environmental impact



# Holding Donors Accountable: the Importance of Independent Coding/Evaluation

- Donors are under pressure to show they are “doing something about the environment”
- Strong incentives to over-report environmental commitment
- The Case of DFID
  1. DFID Policy Information Marker System (PIMS)’s provides an informative comparison with PLAID-coded data
  2. DFID claims that projects with positive environmental objectives accounted for 25% of its bilateral aid in the 1990s
  3. According to a project-by-project analysis of the PLAID data, the actual number is closer to 10%



# The Future of Environmental Aid: Climate Change

## *Projected Cost of Mitigation*

- As of 2030, **\$100 billion a year** will be needed to finance mitigation activities in developing countries

## *Projected Cost of Adaptation*

- By 2030, **\$28-67 billion a year** will be needed to finance adaptation activities in developing countries

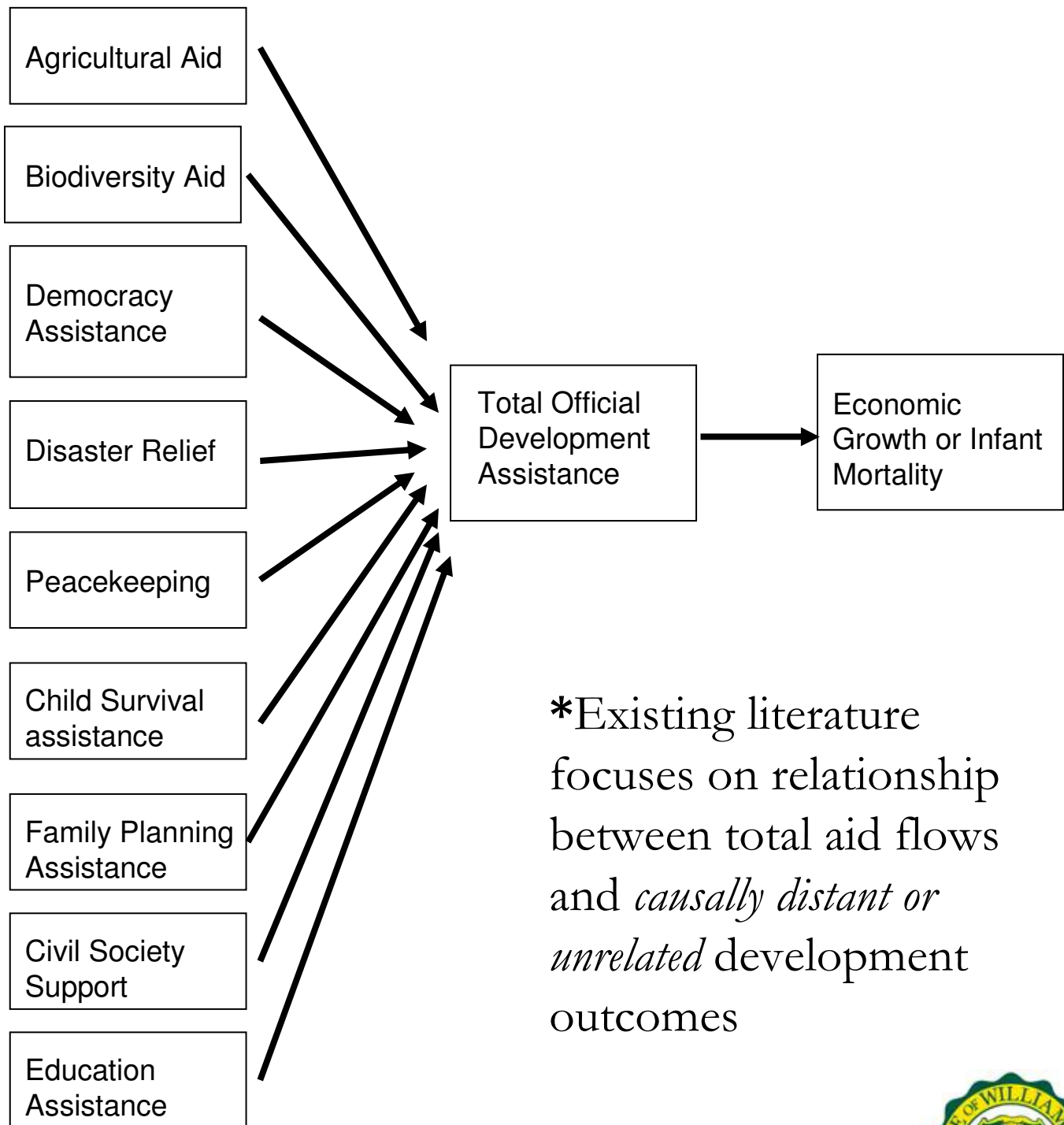


# Future Directions

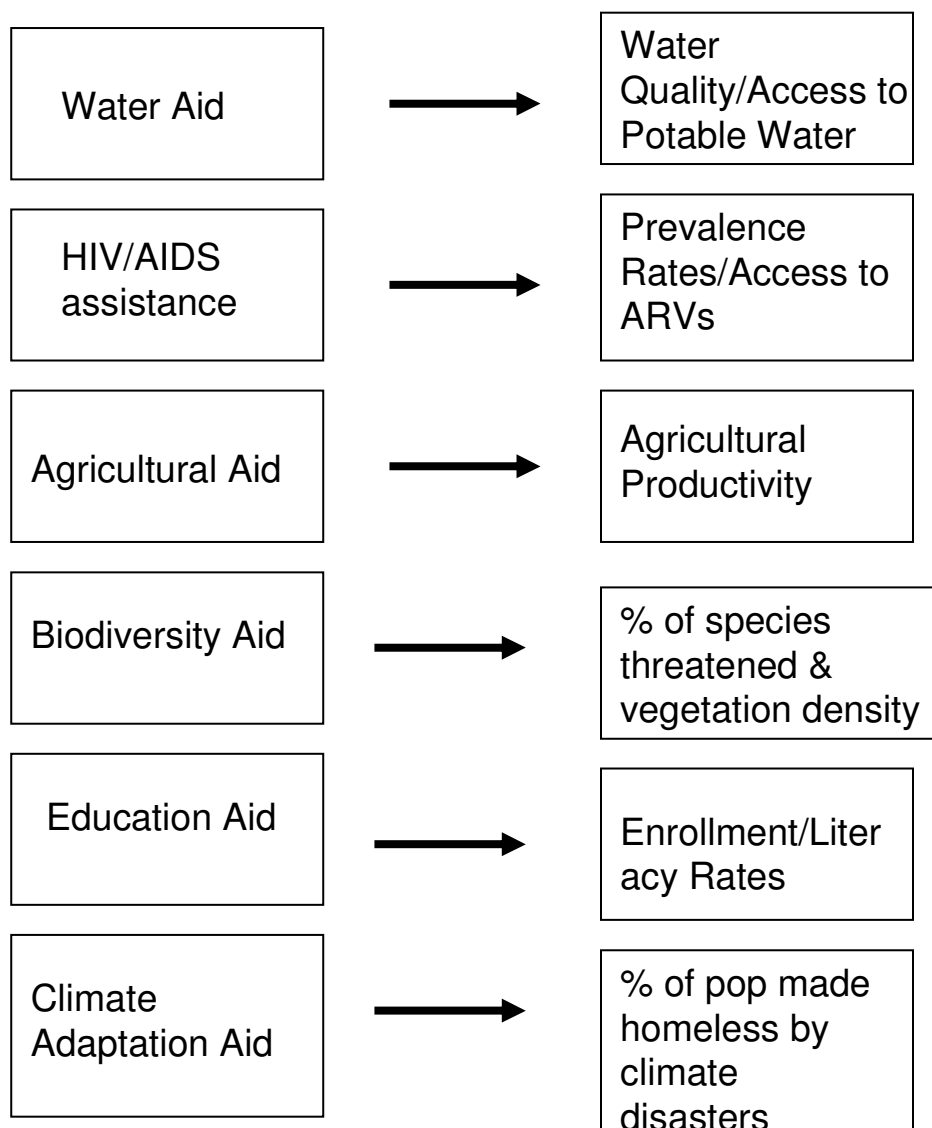
1. Making PLAID an easy-to-use, timely, and comprehensive database on international development finance for donors, NGOs, activists, and researchers
2. By end of 2008, PLAID data updated through 2006
3. Coverage of “emerging” donors (i.e. China, Poland, Venezuela...)
4. Sector-specific and sub-sector specific aid effectiveness research



# Existing “Macro” Research on Aid Effectiveness



# PLAID's Potential Contribution to Aid Effectiveness Literature

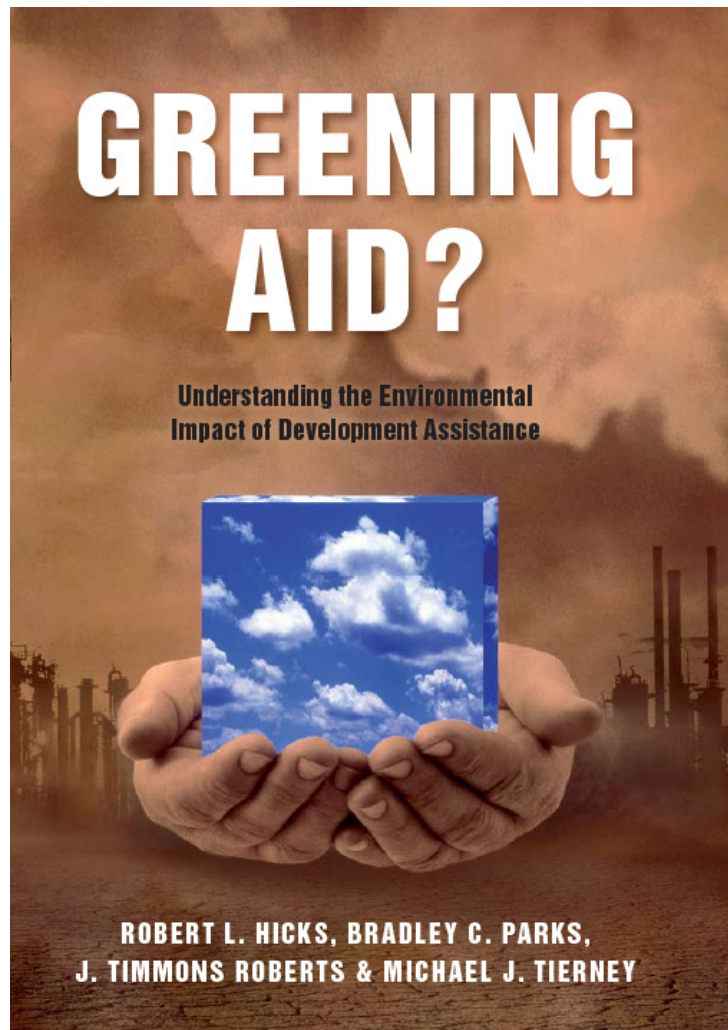


# PLAID's Potential As Tool for Donor Coordination

- A growing literature suggests that donor coordination has a significant impact on the success of development projects. (Knack and Rahman 2004; Acharya et al. 2003; Easterly 2003).
  1. Cuts reporting requirements
  2. Reduces monitoring costs
  3. Minimizes overlap and cross-purposes
  4. Awareness of projects in same places and sectors
  5. Reduces duplication of assessments and reviews
  6. Enables sharing of expertise



# Thank you. Comments?



Contacts us at:

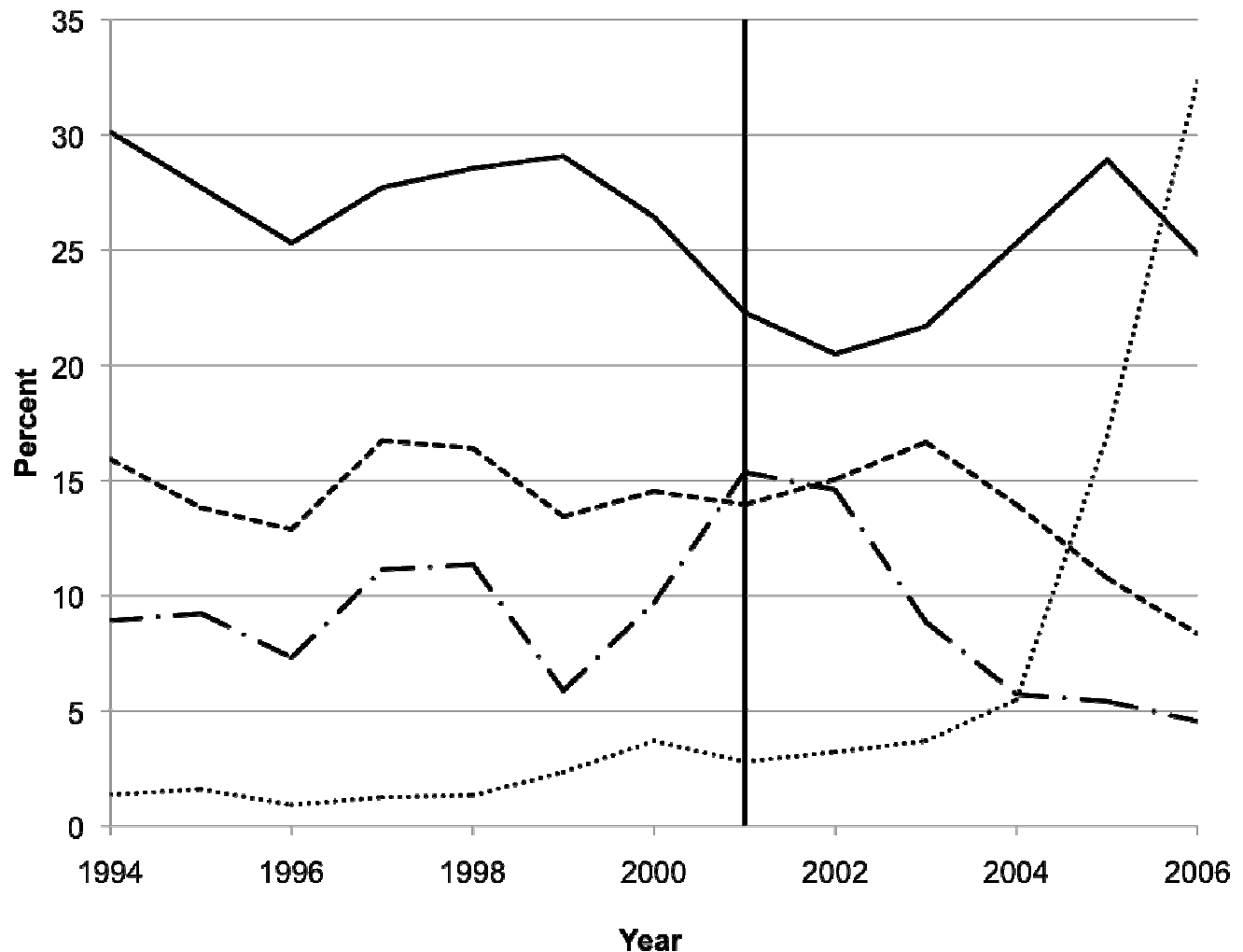
[irtheoryandpractice.wm.edu](http://irtheoryandpractice.wm.edu)



# Extra Slides

# What does mainstreaming look like?

## Mainstreaming the Environment at the World Bank 1994-2006



..... Institution-Level Environmental Rhetoric (percent of total publications)

— Environment Themed Projects - Bank Coding (Percent of Portfolio)

- · Mainstreamed Environmental Funding (Percent of Project Budget)

--- Project-Level Environmental Rhetoric (Standardized Percent of Project Documentation)

# But what about aid that supports environmentally-damaging projects?

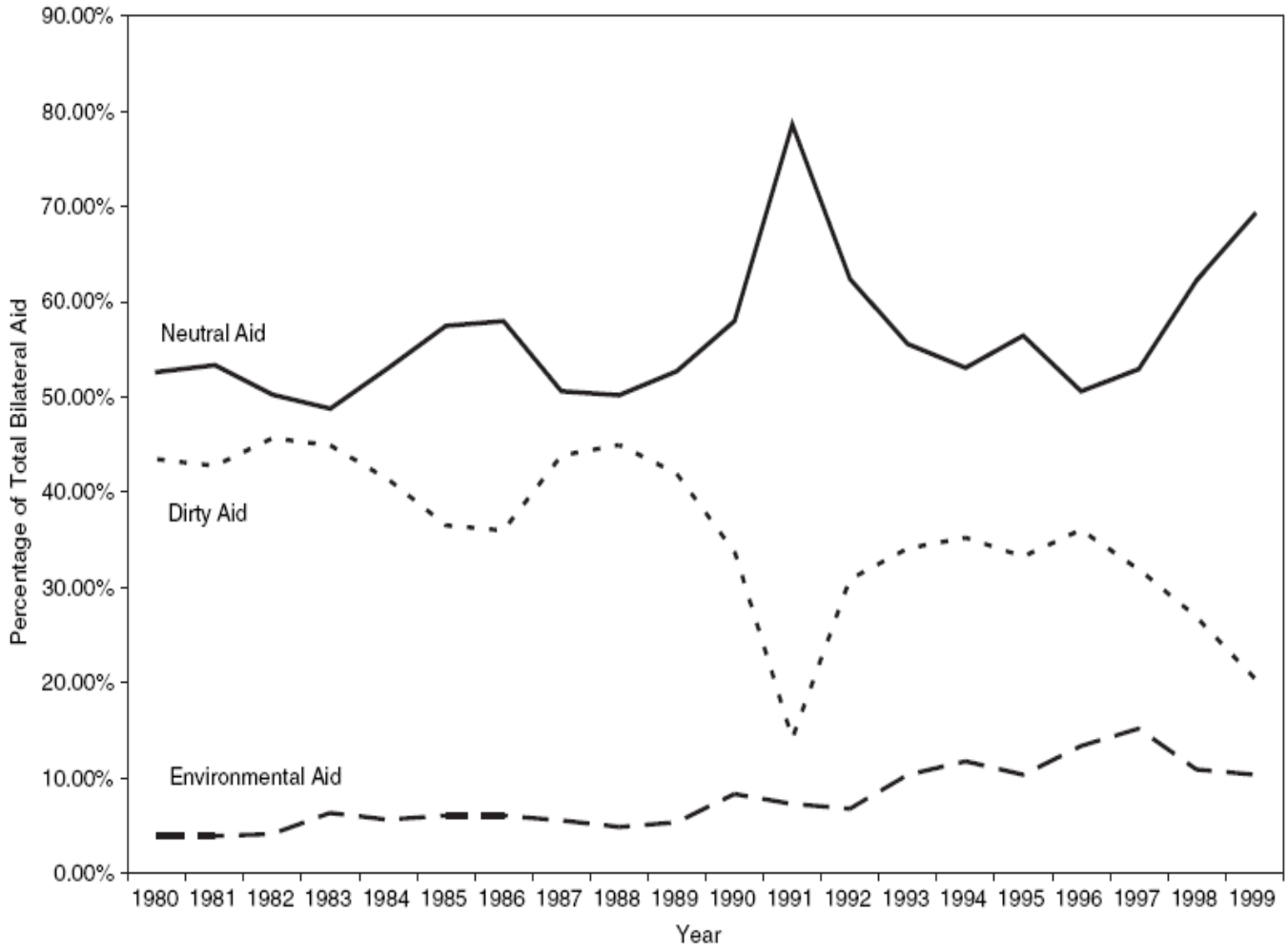


Figure 5.1. Percentage of total bilateral aid, 1980–1999



# Dirty Aid/Environmental Aid Ratio: Germany

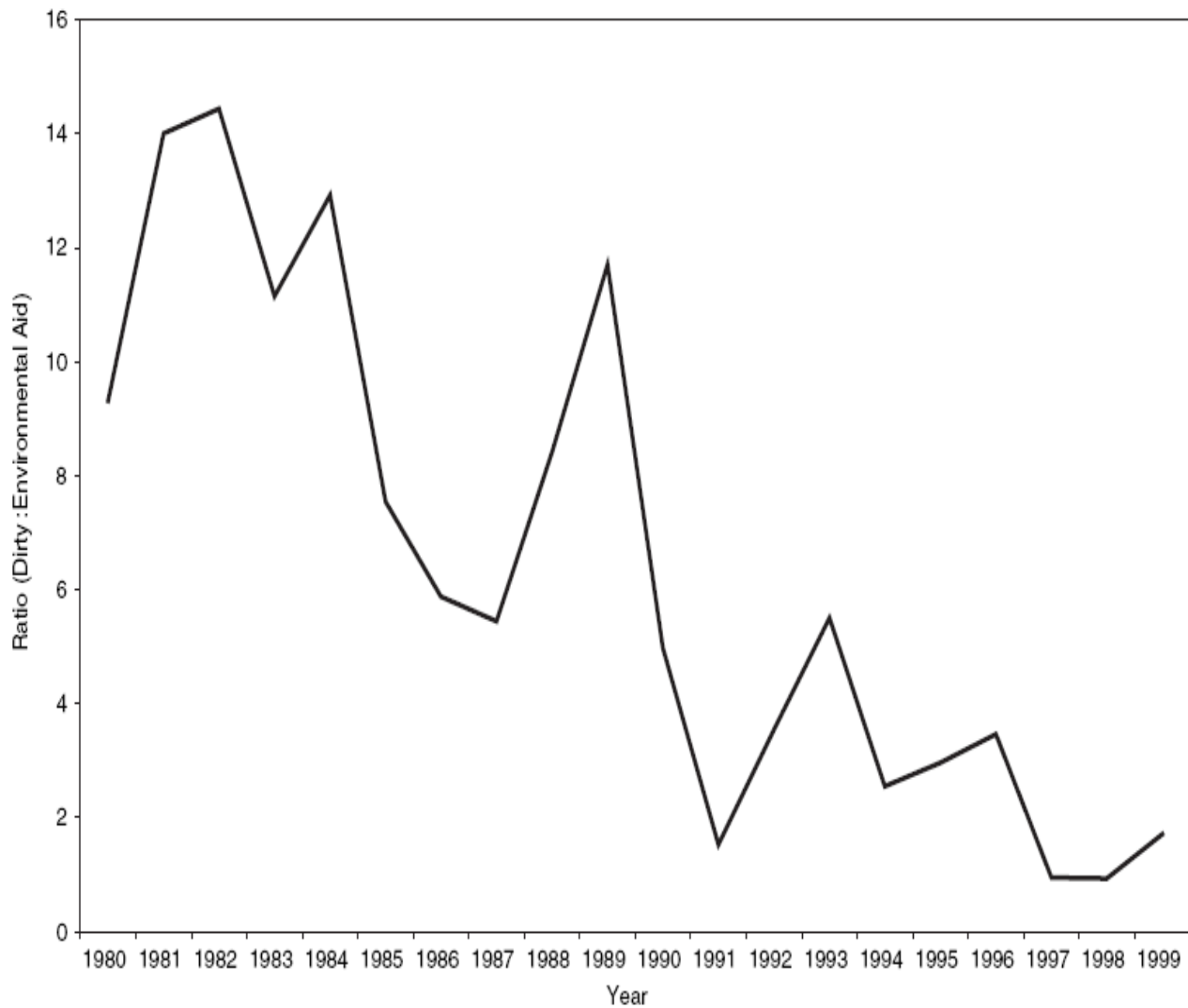


Figure 5.4a. Ratio of 'dirty' to environmental aid given by Germany, 1980-1999

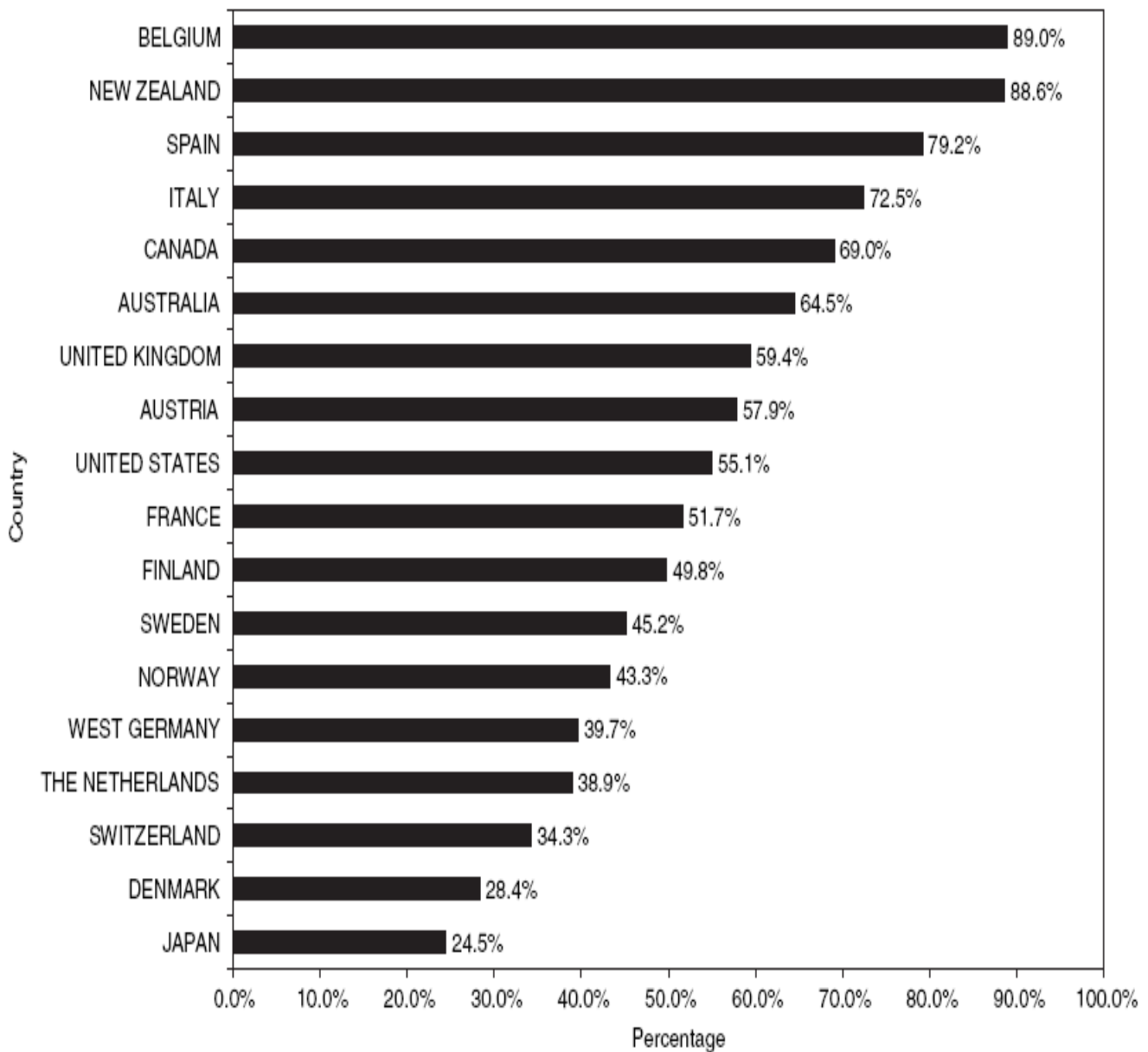


## Research Question #3

Why do some donor governments delegate responsibility for allocating and implementing environmental aid to multilateral agencies when they could simply give it away themselves?



# **% of Environmental Aid Channeled Through Multilateral Agencies, 1980-1999**



# Why delegate?

- Strong correlation between dirty aid delegation and brown aid delegation (bivariate correlation = .66)
- But a significantly weaker correlation between dirty aid delegation and *green* aid delegation (bivariate correlation = .39)
- Suggests that there may be a separate logic motivating the delegation of green aid



# Why do donor governments delegate to multilaterals?

- *Factors that might explain supra-national delegation of environmental aid*
  - **Size of Country** (population size)
  - **Cost of bilateral aid delivery** (% of bilateral aid budget spent on administrative overhead)
  - **“Tied hands” at home**
    - Tied aid as a percentage of total aid
    - Degree to which bilateral aid allocated according to geo-strategic criteria
    - Degree to which bilateral aid favors trading partners
    - Degree to which donor is able to allocate bilateral aid according to “eco-functional” criteria (strong govt. institutions, track record of environmental treaty compliance, ability to deliver global environmental benefits)

# Statistical Findings

- Neither **tied aid** nor **administrative cost of delivery** a significant predictor of multilateralism, but serious measurement problems
- **Small countries** favor having multilateral agencies allocate and implement green aid
- Countries with **“tied hands”** (i.e. where commercial and geostrategic interests drive bilateral aid allocation) favor supranational delegation
- Donors with higher rates of **environmental treaty compliance** prefer to allocate green aid through bilateral channels
- However, countries with the **domestic policy space to allocate bilateral aid efficiently** actually favor delegation of environmental aid to multilateral agencies



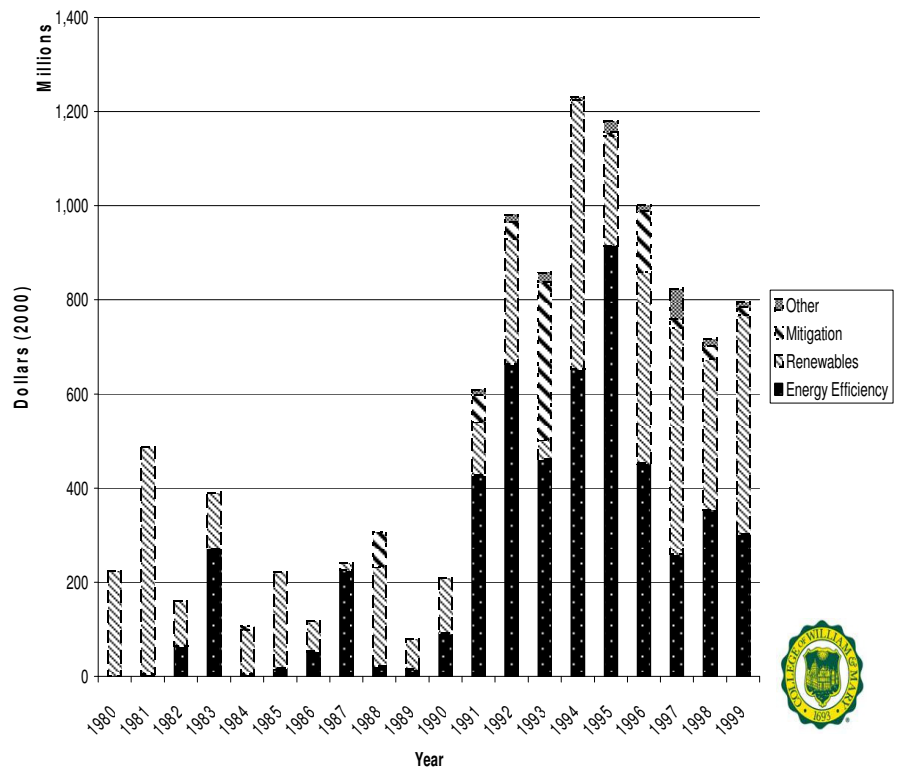
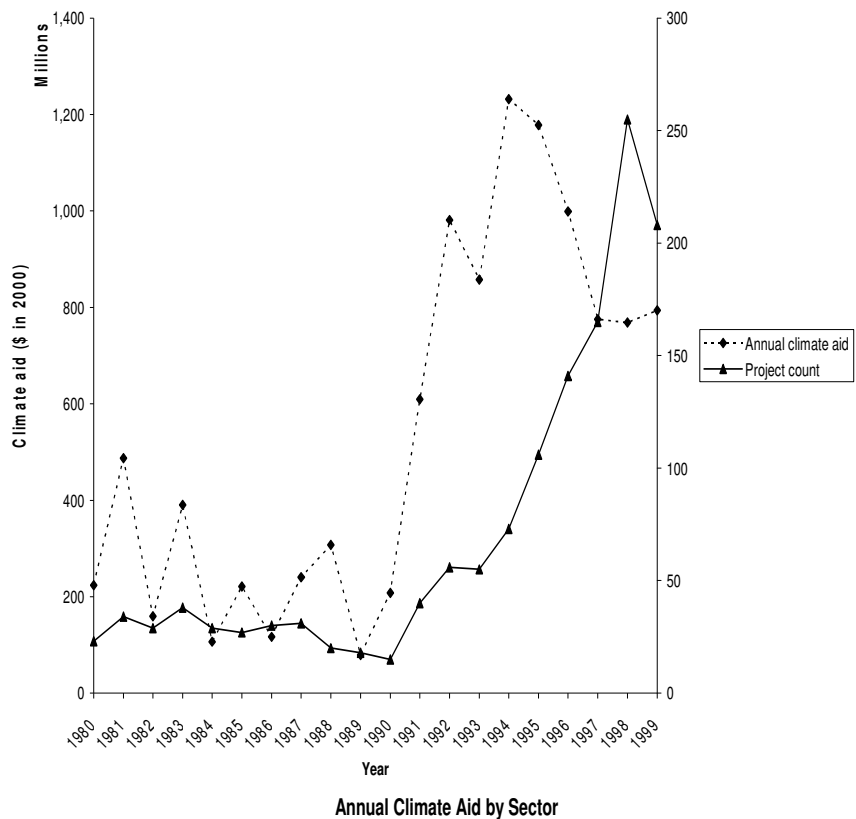
# PLAID Applications Outside of Environment Sector

- Ex: Aid to Honduras for agricultural productivity and market access (1990-2000)
- OECD's CRS sectors too general
- PLAID search results
  - Keywords: productivity, infrastructure, and transportation projects
  - Project Count: 67
  - Non-CRS Projects: 16 (24%)
  - Projects spanned 16 CRS sectors
  - Example: Projects for “increased agricultural productivity” in *four* CRS sectors
    - 31120 (Agricultural Development)
    - 31130 (Agricultural Land Resources)
    - 31192 (Plant Post-Harvest Protection & Pest Control)
    - 41010 (Environmental Policy & Administration Management)



# Climate aid goes back for decades

- Contained in the PLAID universe of cases, a total of \$676 million was given for energy efficiency in the 1980s.
- In comparison, donors gave \$4.54 billion for efficiency during the 1990s.
- Donors also increased their funding for renewable energy from \$1.57 billion in the 1980s to \$2.95 billion in the 1990s.
- Funding for total climate aid projects shows a marked jump from \$2.33 billion in the 1980s to \$8.40 billion in the 1990s—a 261% increase.



# Top Donors and Recipients of Climate Aid, Sample Projects, Funding for Renewables

Top donors for climate change 1990s:

Asian Development Bank (\$2.3B),

International Bank for Reconstruction and Dev (\$1.4b)

The GEF (\$1.1 billion).

Japan (\$1.08 billion),

United States (\$897 m),

Germany (\$342 million).

GEF funded 109 projects which totaled \$44m for carbon inventories and NAPAs

IBRD in 1991 made a commitment of \$388m for heat supply restructuring in Poland

IBRD loan in 1994 for \$251m towards the Leyte Luzon geothermal power plant in the Philippines

India and China received \$1.59 and \$1.40 billion in climate change aid in the 1990s

Annual Renewable Energy Aid

