

**NGOs, INGOs, and Social Change: Environmental Policy Reform in the Developing World, 1970-1995.**

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January 2008

Early Draft. Please do not cite or quote without permission.

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## NGOs, INGOs, and Social Change: Environmental Policy Reform in the Developing World, 1970-1995

### Abstract

We examine the impact of domestic and international NGOs on pro-environmental policy reform in the developing world. We address three views: 1) Generalizing from the experience of industrialized Western democracies, scholars have argued that environmental reform in the developing world is driven by bottom-up “grassroots” organizations and social movements that pressure the state for change. 2) Sikkink’s “boomerang” thesis suggests that transnational movements or “advocacy networks” play a critical role in supporting domestic NGOs, particularly when domestic groups are blocked from influencing the state. 3) Neo-institutional or “world polity” scholars propose a “top-down” dynamic, whereby international organizations and movements, which are carriers of “world cultural models and scripts,” represent the primary force behind policy reform. We use event history analysis to model national pro-environmental legal reforms in the developing world from 1970-1995. Statistical models, together with descriptive evidence regarding the formation of domestic associations, are used to evaluate the “bottom-up”, “boomerang”, and “top-down” arguments. We find that *international* associations are the primary source of pro-environmental reform in the developing world. Domestic environmental associations have no impact on reform, once we control for international factors. Moreover, data on the founding of domestic environmental NGOs suggest that they arrive late on the scene in developing countries, often as an offshoot of the global movement. While one can find examples of bottom-up social change and “boomerang effects”, the overall pattern of environmental reform in the developing world is best explained by global organizational dynamics.

## Introduction

Over the past three decades, pro-environmental policies have spread around the globe (Frank et al. 2000). Standard political and legal reforms such as the creation of environmental ministries and the enactment of broad-based environmental policy laws can now be found in most developing countries. This represents a dramatic sea-change, leading to significant reductions in environmental degradation around the world (Schofer and Hironaka 2005).

We explore the role of *domestic* and *international* associations in encouraging pro-environmental policy reform in developing countries. Explanations for policy reforms almost always invoke pro-environmental organizations as a critical source of social change. However, scholars disagree on *which* associations matter, and how: 1) The vast bulk of prior research has focused on domestic organizations and movements as a source of environmental change, and largely ignored international processes. 2) Sikkink and her co-authors offer a nuanced picture, in which domestic and international organizations interact to motivate political reform. The most common formulation is what Sikkink refers to as the “boomerang pattern” (Keck and Sikkink 1997). 3) Scholars working in the “world polity” tradition pushed a top-down argument in which international association serve as an important impetus for national policy reform.

We turn to cross-national statistical evidence to shed light on these perspectives. Specifically, we seek to examine the importance of domestic and international organizations in explaining cross-national historical patterns of pro-environmental policy reform in the contemporary era.

### *“Bottom-up” Arguments*

Scholars of civil society and social movements have long argued for the importance of grassroots organizing as a source of social change. The civil society literature characterizes associations as a potent form of social capital, and a vehicle for the production of collective goods (Putnam 1992, 2000). Likewise, social movement scholars point to voluntary association as an important source of resource mobilization (Macadam et al 1997 and many others).

Drawing on those traditions (and their precursors), studies of the early environmental movement identified domestic grassroots associations as an important source of social change (Brulle 1990). Organizations like the Sierra Club and Friends of the Earth served as a critical infrastructure for the movement, and key players in pressing for reform. Indeed, a variety of successful legal and political reforms have been attributed in whole or in part to the activities of such organizations: the creation of state agencies or ministries responsible for environmental protection (e.g., the Environmental Protection Agency in the US), the establishment of environmental impact assessment laws, the expansion of industry regulation, and so on. These domestic groups also served as a springboard for trans-national organization and mobilization, yielding a truly global movement which has pressed for further pro-environmental reforms at the national and international level (Wapner 1990).

The same ideas have been extended to analyses of the developing world. Specifically, scholars have argued that grassroots civil society groups play an important role in policy reform (e.g., Wong 2001; Sonnenfeld 2002; Bryant 2005; Sonnenfeld and Mol 2006). See figure 1.

*Proposition 1: Domestic environmental associations will have a positive effect on national adoption of pro-environmental policy reforms.*

The importance of grassroots organizing is often assumed rather than empirically examined. The idea that bottom-up organizing matters is both normatively appealing and fits with prior research on the US and Western Europe. Yet, there are reasons to be skeptical. First and foremost, *many countries in the developing world are not democratic* and so their regimes may not be responsive to domestic social interest groups. Second, as an empirical matter, domestic pro-environmental groups have emerged rather recently, and they are typically very small and poorly funded (Longhofer and Schofer 2006). This raises questions about their causal importance in spurring political reform. Third, the rise of the global environmental movement and a world environmental regime call into question the idea that reforms have their origins primarily in domestic processes. In other words, a variety of international dynamics may play a role in national environmental policy reform.

#### *The “Boomerang” Argument*

Keck and Sikkink’s (1997) “boomerang pattern” offers a compelling argument that attends to both domestic and international dynamics. Moreover, the argument addresses the most obvious difficulty of extending “bottom-up” arguments to the developing world, namely that many regimes are not democratic and may not be responsive to domestic interest groups. The idea is simple: when domestic groups are blocked from accessing the state, they seek out alternative means of influencing the state. These may include third party regimes or international organizations. To the extent that domestic groups can find powerful international allies, they may be able to encourage reform indirectly. The causal dynamic, summarized in Figure 1, can be likened to a boomerang, in that influence extends from domestic groups out to international actors and back again to the state, rather than directly from domestic groups to the state.

The argument provides one way to make sense of the role of international organizations in social change. Specifically, international organizations represent powerful allies that may come to the aid of domestic groups by pressing states for social change. The work still stresses the importance of domestic actors – but argues that their power may be amplified by international groups, particularly in non-democratic societies.

*Proposition 2: International advocacy associations will enhance the impact of domestic environmental associations on national adoption of pro-environmental policy reforms.*

Similar arguments have been made by neo-institutional and social movements scholars, who have argued that international organizations provide a favorable political opportunity structure that increases the efficacy of domestic social movements (e.g., Tsutsui 2006).

#### *The “Top-down” World Polity Approach*

“Neo-institutional” or “world polity” scholars have pointed to global culture, organizations, and institutions as the source of national environmental policy reform. While the environmental movement emerged in the domestic political context of the US and several Western European nations, the movement rapidly shifted into the international sphere and, together with other factors, spurred the formation of an international environmental regime consisting of treaties, inter-governmental

organizations, and INGOs (Meyer et al. 1997; Frank et al. 2000). Research has shown that nations with strong organizational ties to the environmental regime adopt policies more rapidly than nations without such ties (Frank et al. 2000).

International associations play a central role in world polity theory, as carriers of global norms, models, and scripts (Boli and Thomas 1999). International associations serve to promulgate “legitimate” models of state behavior, which have particularly strong effects on developing countries that may be internally weak and dependent on external legitimacy to bolster their regimes. This leads to the following proposition:

*Proposition 3: International associations will have a positive effect on national adoption of pro-environmental policy reforms.*

World polity researchers have also addressed the relationship between international and domestic civil society. Again, they have argued for the primacy of international factors, namely that domestic civil society in the developing world is substantially shaped by international association (Longhofer and Schofer 2006). For instance, international groups such as Friends of the Earth routinely support the formation of domestic pro-environmental groups throughout the developing world. In other words, international pro-environmental organizations generate *both* domestic political reform *and* domestic NGOs in the developing world.

See Figure 1 for a summary of the three main arguments.

## Data and Methods

We now turn to a statistical test of the above propositions. Conventional accounts predict a strong effect of domestic NGOs on policy change, whereas the “top-down” argument suggests that the principle forces driving environmental reform stem from world society, not the domestic sphere. The “boomerang” argument is a bit harder to operationalize with quantitative data, but implies an interaction effect between domestic and international mobilization, particularly in non-democratic nations. We explore several possible operationalizations to test the argument.

We model the national adoption of environmental policies using event history analysis in order to determine the causal importance of domestic and international NGOs in environmental reform. Event history models are well suited to the study of discrete events that vary in timing, such as policy adoption. We employ a constant rate model, similar to prior studies in the literature (e.g., Frank et al. 2000; Schofer 2003):

$$h(t)=\exp(\beta_0 + \beta_k X_i)$$

In a constant rate model,  $h(t)$  represents the likelihood, or “hazard rate,” of an event (in this case, the adoption of a particular environmental policy) occurring in a given year as a function of time-varying covariates. We analyze national adoption of three types of policies: environmental impact assessment (EIA) laws; national environmental ministries; and the first comprehensive environmental law in each country (comparable to the creation of the EPA in the United States). The first two variables were taken from previous analyses (Frank et al. 2000; Hironaka 2000). Comprehensive environmental laws were coded from the ECOLEX website ([www.ecolex.org](http://www.ecolex.org)), which contains text on environmental legislation for all countries and is maintained by the IUCN, UNEP, and Food and Agriculture Organization of the UN. We analyze each adoption in a separate model for around 100 developing countries in years 1970-1995.

Primary data on domestic environmental associations are derived from the *World Directory of Environmental Organizations* (“the Directory”), which was first released in print form by the Sierra Club in 1973 (California Institute of Public Affairs, 1973-2001). Similar to previous studies (see McLaughlin and Khawaja 2000), we collected data on all domestic environmental associations listed in the entire six-volume series of the Directory as well as the online version (accessed May 18, 2005), excluding only governmental organizations, local chapters of international NGOs, academic research institutes, and organizations for which there no founding dates available. To increase coverage in our data set, we supplemented the Directory with a second source- a single volume of the *Encyclopedia of Associations: International Organizations* (the “Encyclopedia”) (Gale 2001). We use the cumulative sum of domestic environmental NGOs founded, taking the natural log to reduce its skew.

World society influence is measured in a conventional manner, by national ties to International Non-Governmental Organizations (INGOs). Data from the Union of International Associations (2001) measures the number of INGOs to which citizens from a given country hold membership (for example, a country with individual members of both WWF and Friends of Earth is considered to have two ties to the world polity). We take the natural log of the measure to reduce its skew.

Additional independent measures include: economic wealth as measured by gross domestic product per capita (logged, World Bank 2001); annual change in GDP per capita (World Bank 2001), population (logged, World Bank 2001); annual population change (World Bank 2001); an index of civil liberties and political freedoms (Freedom House 2004); and percent gross enrollment in higher education (World Bank 2001). We also include the 1999 “ecological footprint” to account for overall environmental degradation (logged, WWF 2002). Although the footprint measure is not time-varying, it is one of the more well-regarded measures of overall environmental damage available for a large number of countries (York et al. 2003).

## **Analysis**

We first begin with some descriptive evidence regarding the formation of domestic pro-environmental NGOs over time. The conventional grassroots story begins with the implicit assumption that domestic mobilization is the primary vector of social change. Scholars have looked to the student movements, post-war democratic climate, and the emergence of a liberal, highly-educated middle class for the domestic wellsprings of modern environmentalism in the United States and Western Europe (Dalton 1993, 1994; Rome 2003). In the developing world, in contrast, domestic associations were rare until the late 1970s and early 1980s, and they appear in smaller numbers than in the industrialized Western nations. The origins of these associations remain overlooked and weakly theorized, as do their differences in tactics and agendas. Do environmental organizations in the developing world follow the same path of those in the United States and Western Europe, or are their origins indeed different?

--- Figures 2 and 3 ---

Figures 2 and 3 trace the growth of memberships in environmental INGOs and the founding of domestic associations in developed and developing countries. We also

include the growth of environmental reforms as a reference point for our statistical analyses. Among the industrialized countries, domestic organizations clearly precede memberships in international organizations, beginning in the late 1800s and rising steadily until a slightly greater expansion in the 1960s and 1970s. Participation in international organizations also begins much earlier in the industrialized countries than in the developing world, although the slope is much steeper in the more recent period in developing countries. In non-industrialized countries, INGO memberships precede the founding of domestic organizations and begin to rise in the late 1960s and early 1970s. Domestic environmental organizations, on the other hand, expand slowly until the mid-1970s, years after the penetration of the international environmental community. Statistical models support the causal imagery that is suggested by these tables: international associations are strongly predictive of the rise of domestic environmental association in the developing world (Longhofer and Schofer 2006).

--- Table 1 ---

Descriptive analyses suggest that international organizations often precede the formation of domestic NGOs in the developing world. But, what about environmental reform? We turn to event history models to resolve the issue. Table 1 examines three dependent variables: national adoption of environmental impact assessment laws (Models 1-3), the creation of national environmental ministries (Models 4-6), and adoption of a general environmental law (of comparable breadth and scope to the creation of the EPA in the united states) (Models 7-9).

In each case, we begin with a base model that includes control variables and domestic pro-environmental NGOs. As the “bottom-up” argument predicts, domestic NGOs have a positive effect on environmental policy reform. The effect is moderately large and significant in the case of environmental ministries and general environmental laws (Models 4 and 7).

Next, we add a measure of national memberships in international pro-environmental associations (Models 2, 5, and 8). International organizations have a large and statistically significant effect on all types of pro-environmental reform. For example, every unit increase in the log of INGOs increases the hazard rate of EIA legislation by 123% (Model 2:  $\exp[0.80]$  yields a hazard ratio of 2.23). This finding lends support to the “world society” model of environmental reform; that is, that nation-states are likely to respond to environmental cues from the world system rather than domestic civil society. Moreover, the addition of this variable reduces the magnitude and significance of the domestic NGO variable. In other words, international pro-environmental associations are a better predictor of policy reform than are domestic NGOs.

Finally, Models 3, 6, and 9 include one operationalization of the “boomerang” argument: that international associations amplify support the effect of domestic NGOs, measured by an interaction term (NGOs\*INGOs). (Note: We explored other operationalizations, including a 3-way interaction between NGOs, INGOs, and low-democracy countries. Results were similar.) We do not observe a positive interaction effect – indeed, the effect is negative in some instances. In either case, international pro-environmental associations remain the primary predictor of domestic environmental reform.

## Discussion

According to conventional studies of the environmental movement, we would have expected strong effects of domestic association on environmental policy reform. However, we find little statistical evidence to support this proposition. Rather, ties to world society had the largest effect on all three measures of national policy reform. We also find descriptive evidence that global rather than domestic associations matter among developing countries. Nor do we find evidence on behalf of Keck and Sikkink's boomerang hypothesis. Instead, our analyses suggest that environmental reform in the developing world is a top-down process in which international ties and the global environmental movement both ignite grassroots movements *and* spur domestic policy reform. The question thus arises, why is the conventional grassroots story so persuasive?

In a previous paper, we argued that the story stems from a set of cultural assumptions held in world society that strongly privileges and legitimates various forms of participatory democracy. The idea that citizens come together to form assemblies and address local environmental grievances is normatively enticing and plays on a tendency to generalize the histories of social movements in the United States and Western Europe to the rest of the world. However, most NGOs in the developing world are ineffective, poorly funded, and hardly autonomous catalysts of social change. Even in prosperous and democratic Japan, a ministerial survey of 386 environmental NGOs found that nearly half the respondents did not have a single paid full-time staff person.<sup>1</sup>

Our findings support the claim that domestic NGOs cannot be characterized as autonomous agents of policy reform and social change, at least in the developing world. However, we remain sensitive to the possibility that over time domestic NGOs do actually foment national policy reforms. Once assumptions about participatory democracy become more institutionalized at the global level, domestic NGOs will garner more authority and legitimacy for spurring domestic policy reforms. A panoply of international players – from the Worldwide Fund for Nature (WWF) to the World Bank – now routinely devote resources and energies to the “empowerment” of domestic NGOs. It has become commonplace for NGOs to serve as intermediaries—receiving cultural signals from world society and translating them into participation “on the ground.” For example, in the global South, ecological modernization has emerged as domestic actors have responded, “to changing global norms, ideologies, and practices of environmental regulation” (Sonnenfeld 2002: 23).

In short, our findings support the “world society” model of social change by highlighting the exogenous sources of environmental policy reform in the developing world. Despite the normative attraction of the conventional grassroots hypothesis, we find little support for such a story. We also find scant support for Keck and Sikkink's boomerang hypothesis. Though we appreciate the turn toward transnational advocacy networks in the boomerang hypothesis, the motors for social change are primarily domestic. As domestic NGOs garner more authority, we may likely see a sandwiching of the state as both domestic and international NGOs pressure the state to enact reforms. However, for the three early forms of environmental protection examined here, we find no support for this idea: international associations were overwhelmingly the strongest predictor of environmental reform.

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<sup>1</sup> See <http://www.gdrc.org/ngo/jpngo-face.html>.

## **Conclusion**

In this paper we have reconsidered the conventional wisdom that environmental change is spurred by grassroots mobilization. Whereas many social scientists have looked to civic associations to explain national policy reforms, few studies have looked to whether domestic or international associations are more influential. We find that international associations are the largest predictor of environmental reform in the developing world, not domestic NGOs. Our descriptive analyses suggest that domestic NGOs do not exist *sui generis*. Rather, both the formation of NGOs and the enactment of environmental policies occur after the penetration of world society. As a country becomes more embedded in a pro-environmental world society, pressures are placed on the state to enact pro-environmental legislation and authority is granted to grassroots environmental organizations. Future analyses might look to the timing of the latter; that is, when exactly does the authority granted to domestic NGOs by world society spill over into actual policy reforms? This paper merely provides a starting point for rejecting the seductiveness of the conventional story and offering evidence of a “top-down” model of social change.

## References

- Boli, John and George Thomas, eds. 1999. *Constructing World Culture: International Non-Governmental Organizations since 1875*. Stanford: Stanford University Press.
- Brulle, Robert J. 2000. *Agency, Democracy, and Nature: The U.S. Environmental Movement from a Critical Theory Perspective*. Boston, MA: MIT Press.
- Bryant, Raymond L. 2005. *Nongovernmental Organizations in Environmental Struggles : Politics and the Making of Moral Capital in the Philippines*. New Haven, CT: Yale University.
- California Institute of Public Affairs. 2005. *The World Directory of Environmental Organizations Online*. Accessed online May 18, 2005, at <http://www.interenvironment.org/wd/>.
- Frank, David John, Ann Hironaka, and Evan Schofer. 2000. "The Nation-State and the Natural Environment Over the Twentieth Century." *American Sociological Review* 65: 96-116.
- Freedom House. 2004. *Freedom in the World 2004: The Annual Survey of Political Rights and Civil Liberties*. Rowman & Littlefield.
- Gale Research Group. 2001. *Encyclopedia of Associations: International Organizations*, 37<sup>th</sup> ed. Detroit, MI: Thomson Gale.
- Hironaka, Ann. 2000. "The Globalization of Environmental Protection: The Case of Environmental Impact Assessment." *International Journal of Comparative Sociology* 43(1): 65-78.
- Keck, Margaret E., and Kathryn Sikkink. 1998. *Activists Beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press.
- McAdam, Douglas, John McCarthy and Mayer Zald (eds.) 1996. *Comparative Perspectives on Social Movements. Political Opportunities, Mobilizing Structures and Cultural Framings*. Cambridge [England]: Cambridge University Press.
- McLaughlin, Paul and Marwan Khawaja. 2000. "The Organizational Dynamics of the U.S. Environmental Movement: Legitimation, Resource Mobilization and Political Opportunity." *Rural Sociology* 65(3): 422-439.
- Meyer, John W., David John Frank, Ann Hironaka, Evan Schofer, and Nancy Brandon Tuma. 1997. "The Structuring of a World Environmental Regime, 1870-1990." *International Organization* 51(4):623-651.

- Putnam, Robert. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Putnam, Robert, et al. 1993. *Making Democracy Work*. Princeton, N.J.: Princeton University Press.
- Schofer, Evan. 2003. "The Global Institutionalization of Geological Science." *American Sociological Review* 68(5): 730-759.
- Schofer, Evan, and Ann Hironaka. 2005. "The Effects of World Society on Environmental Protection Outcomes." *Social Forces* 84: 25-47.
- Schofer, Evan, and Wesley Longhofer. 2006. "The Structural Sources of Associational Life." Working paper, Department of Sociology, University of Minnesota.
- Sonnenfeld, David A. 2002. "Social Movements and Ecological Modernization: The Transformation of Pulp and Paper Manufacturing." *Development and Change* 33: 1-27.
- Sonnenfeld, David A., and Arthur P.J. Mol. 2006. "Environmental Reform in Asia: Comparisons, Challenges, Next Steps." *Journal of Environment and Development* 15: 112-37.
- Tsutsui, Kiyoteru. 2006. "Redressing Past Human Rights Violations: Global Dimensions of Contemporary Social Movements." *Social Forces*.
- Wong, Amy. 2001. *The Roots of Japan's Environmental Policies*. New York, NY: Garland.
- World Bank. 2001. *World Development Indicators 2001*. Washington, D.C.: World Bank.
- World Wide Fund for Nature (WWF). 2002. *Living Planet Report 2002*. World Wide Fund for Nature: Gland, Switzerland.
- York, Richard, Eugene A. Rosa, and Thomas Dietz. 2003. "Footprints on the Earth: Environmental Consequences of Modernity." *American Sociological Review* 68(2): 279-300.

**Table 1. Event History Models Predicting the Effects of Domestic and International NGOs on Environmental Reform, 1970-1995**

	Model 1	Model 2 <i>EIA</i>	Model 3	Model 4	Model 5 <i>Ministry</i>	Model 6	Model 7	Model 8 <i>EPA</i>	Model 9
Economic development	0.60 (0.35)	0.33 (0.35)	0.34 (0.35)	-0.14 (0.19)	-0.32 (0.19)	-0.31 (0.20)	0.01 (0.30)	-0.28 (0.32)	-0.23 (0.32)
Economic growth	21.52 (20.32)	27.40 (20.58)	26.78 (20.84)	10.78 (16.68)	14.67 (16.85)	14.44 (16.86)	12.35 (13.82)	16.32 (14.27)	15.58 (14.38)
Population	0.00** (0.00)	0.00* (0.00)	0.00** (0.00)	-0.00 (0.00)	-0.00* (0.00)	-0.00* (0.00)	-0.00 (0.00)	-0.00** (0.00)	-0.00 (0.00)
Population growth	19.97 (12.70)	23.21 (12.92)	22.17 (13.41)	-10.38 (8.95)	-10.09 (9.31)	-10.32 (9.04)	17.07+ (9.99)	18.23 (11.69)	16.88 (11.78)
Ecological footprint, 2002	0.14 (0.19)	0.14 (0.20)	0.14 (0.19)	0.10 (0.12)	0.05 (0.12)	0.06 (0.12)	-0.25 (0.21)	-0.35 (0.23)	-0.33 (0.22)
Higher education	-0.02 (0.02)	-0.03 (0.02)	-0.03 (0.02)	-0.03 (0.02)	-0.04* (0.02)	-0.04 (0.02)	0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)
Democracy	0.25 (0.13)	0.24 (0.13)	0.24 (0.13)	0.12 (0.08)	0.13 (0.08)	0.12 (0.08)	0.17 (0.12)	0.18 (0.12)	0.16 (0.12)
Domestic environmental NGOs	0.28 (0.21)	-0.04 (0.23)	1.19 (2.10)	0.55*** (0.13)	0.23 (0.17)	0.82 (1.17)	0.65*** (0.17)	0.23 (0.21)	2.60 (1.77)
International NGOs		0.80* (0.39)	0.97*** (0.07)		0.72** (0.24)	0.79** (0.29)		1.03** (0.30)	1.36** (0.41)
Domestic NGOs x INGOs			-0.20 (0.34)			-0.10 (0.19)			-0.38 (0.29)
Constant	-10.36** (2.67)	-12.50** (3.04)	-13.58*** (3.77)	-2.64 (1.39)	-4.91** (1.53)	-5.39** (1.97)	-4.70* (2.12)	-7.85** (2.47)	-10.21*** (2.89)

Observations	2183	2176	2176	2183	2176	2176	1950	1943	1943
Countries	106	104	104	106	104	104	95	93	93
Events	26	26	26	59	59	59	38	38	38
Chi-square	77.31***	63.65***	63.54***	27.43***	35.07***	33.52***	36.67***	31.27***	25.74**

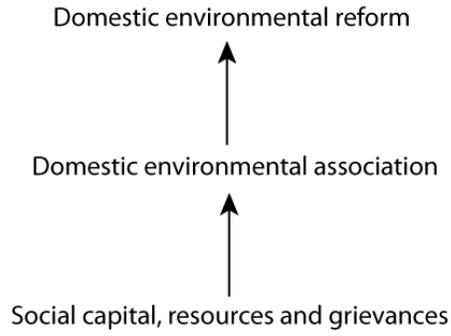
\*\*\* p<.001, \*\* p<.01, \* p<.05, two-tailed test

Unstandardized coefficients, robust standard errors in parentheses

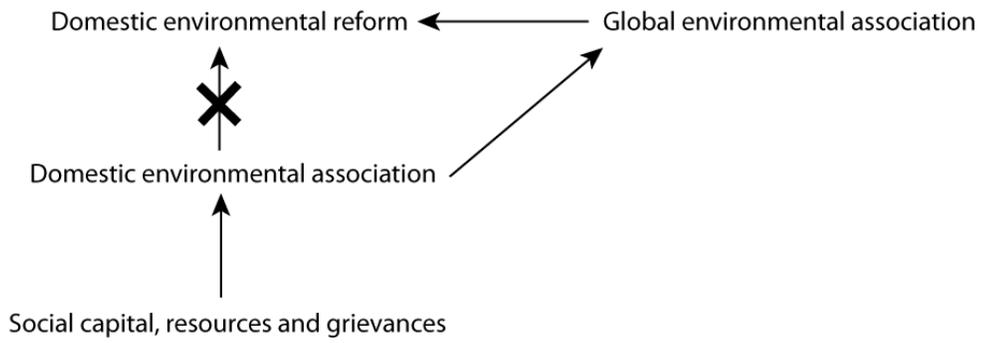


Figure 1. Three Patterns of Environmental Policy Reform

**Conventional "grassroots" pattern**



**Alternative "boomerang" pattern**



**Alternative "world society" pattern**

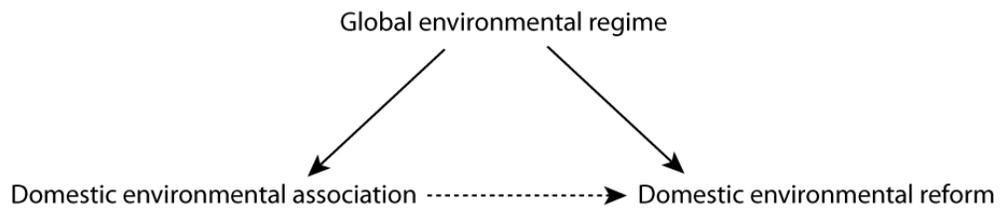


Figure 2. Environmental NGOs and Policy Reforms in Industrialized Countries

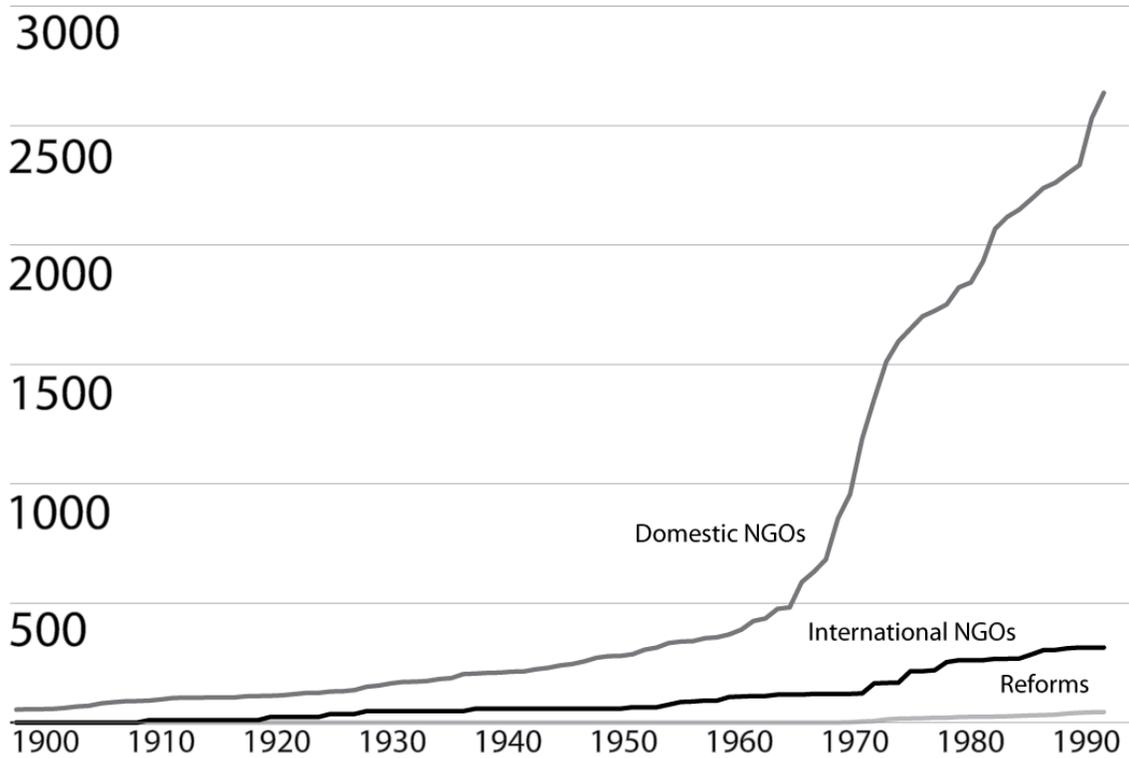


Figure 3. Environmental NGOs and Policy Reforms in Non-Industrialized Countries

