CHAPTER TW0

Institutionalizing Responses to Environment, Conflict, and Cooperation

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Abstract

Alexander Carius and Geoffrey D. Dabelko find gaps at all levels of institutional responses to environment and conflict. They recommend that institutions:

- *Seek to bridge disciplinary borders between academia and policy;*
- *Reduce compartmentalization within national governments, civil society, international organizations, and donor agencies;*
- *Balance participation by elite-level and broad-based stakeholders, including the private and security sectors;*
- *Achieve the appropriate scope for interventions; and*
- *Improve how policies are communicated, perceived, and justified.*

Finally, the authors propose that a dialogue on best practices and innovative institutional efforts will help researchers and policymakers move beyond reacting to symptoms of environment and security linkages and towards learning from interventions that bolster confidence and cooperation rather than instability.

Introduction[16]

In 1992, the United Nations' *Agenda for Peace* mandated pursuing preventive diplomacy and strengthening the Secretariat's early-warning systems to detect dangers to international peace and security, including environmental threats. The agenda identified sustainable development and the environment as the foundations of a peaceful world, and outlined an institutional framework to foster peace and security through cooperation (United Nations, 1992).

Eleven years later, the Secretary General signaled his intention to consider a wide range of issues within the context of international security by assembling the High-Level Panel on Global Threats, Challenges, and Change. Secretary General Kofi Annan charged the panel with "examining the major threats and challenges the world faces in the broad field of peace and security, including economic and social issues insofar as they relate to peace and security" (United Nations, 2003).

But more than a decade after the *Agenda for Peace*, environmental and security institutions are not coordinating policies and programs or integrating environmental concerns into development, foreign, and security policy. This deficit may be surprising, since international attention has focused on conflict over natural resources and risks emanating from environmental decline since the 1970s.[17] In the last fifteen years, international organizations and national governments have commissioned state-of-the-art research to understand linkages between environment and conflict.[18] Some organizations initiated programs to improve stability by reducing environmental stress, fostering sustainable development, and promoting environmental cooperation, such as NATO's Partnership for Peace, the Organization for Security and Cooperation in Europe (OSCE), and the United Nations Development Programme (UNDP), which were accompanied by a host of national initiatives in Canada, Switzerland, Germany, the United States, Australia, Sweden, and the United Kingdom.

Yet most environment, conflict, and cooperation (ECC) efforts within major national and international institutions are still in their infancy. Sovereignty concerns (such as those that led the Group of 77 to reject proposals for rapid response teams of "Green Helmets" to fight environmental degradation) or the traditional separation between security and development institutions stymied prominent forums. Analysis of effective institutional responses is also embryonic. However, if policy interventions can ameliorate environmental conflict, then more dialogue (particularly between North and South) should enable political organizations to solve these problems.

Institutional analysis and programming have remained ad hoc and tentative, in part because ECC analysis has not convinced researchers and policymakers in the conflict community. Many believe that environmental issues are already covered by traditional conflict prevention research, policy, and programs; environmental

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[16] This paper was written in consultation with Dr. Alexander López, director of the Mesoamerican Center for Sustainable Development of Dry Tropics, Universidad Nacional de Costa Rica. Alexander López is co-director, with Alexander Carius and Geoffrey D. Dabelko, of the Environment, Development, and Sustainable Peace Initiative (see http://www. sustainable-peace.org).

[17] The Club of Rome's *The Limits to Growth* (Meadows et al., 1972) and the *Global 2000* report (Council on Environmental Quality & U.S. Department of State, 1981) called attention to these risks and an array of associated socioeconomic problems (population growth, urbanization, migration) over thirty years ago. In 1987, the World Commission for Environment and Development (WCED) expanded the concept of security: "The whole notion of security as traditionally understood—in terms of political and military threats to national sovereignty—must be expanded to include the growing impacts of environmental stress—locally, nationally, regionally, and globally" (1987, page 19). The commission concluded that "environmental stress can thus be an important part of the web of causality associated with any conflict and can in some cases be catalytic" (WCED, 1987, page 291).

[18] The institutions include UNEP in 1988, NATO's Committee on the Challenges of Modern Society (Lietzmann & Vest, 1999), and the OECD Development Assistance Committee in 1998 (Dabelko et al., 1998). UNEP and the International Peace Research Institute, Oslo (PRIO) agreed in 1988 to carry out "Studies in Environmental Security" at PRIO. A joint UNEP/PRIO program on "Military Activities and the Human Environment" comprised empirical research projects that were largely conceived and implemented by PRIO. From this initiative, PRIO developed a strong research focus on environment and security. Publications produced from this effort include Westing (1988, 1989) and Lodgaard et al. (1989).

activities do not appear to directly lessen violent conflict, and conflict prevention efforts already address critical intervening variables such as the rule of law, democratic society, and land rights. Systematic institutional progress requires convincing the conflict community that environment, conflict, and cooperation connections pose threats and offer opportunities.

ECC research and policy have focused primarily on causal linkages between the environment, natural resources, and acute violence, but have paid much less attention to institutional and political responses to these linkages and to the broader set of ECC connections, including cooperation. By concentrating on scarcity, abundance, and violence, ECC research has neglected opportunities to explore the environment as a pathway to cooperation, confidence building, and peace.[19] This chapter focuses on gaps in policies designed to dampen environmental causes of conflict and foster environmental pathways to confidence building and peace.[20] Drawing on examples from conflict and cooperation perspectives on the environment and natural resources, it identifies lessons learned from institutional responses, while suggesting directions for future work in research and policy.

Gaps and Opportunities for Institutional Responses

Institutional gaps hinder the development of integrated approaches to natural resource management, conflict prevention, and peace building, particularly gaps in coordination, participation, scope, and communication.

1. Bridge disciplinary borders

Research on conflict and environmental policy is fragmented. Even though several global institutional mechanisms foster interdisciplinary and transdisciplinary research efforts, ECC studies still depend on disciplinary divisions and funding schemes that do not encourage interdisciplinary and transdisciplinary work.

Second, scarce international funding for research projects makes it difficult for analysts from developing countries to join ongoing research efforts. Since experts from developing countries are often invited to join an initiative after it has begun, they are unable to help structure it from its inception. In addition, Northern academic theories and methodologies dominate much of the available ECC literature in the South.[21]

Third, research remains the province of academic communities, even though government-funded programs and foundations try to communicate research results. However, linking academia and policymaking is not easy; it requires intermediate institutions that translate policy demands for scientific communities, and vice versa. For example, the International Water Cooperation Facility (IWCF) integrates water management research and policy to resolve conflict and build confidence, but its approach is mostly academic. Former Vice President Al Gore's State Failure Task Force was a notable exception to the rule; however, once it

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[19] At least three sets of ECC linkages distinguish between the roles environmental conditions can play as part of a problem (e.g., tension or violence) and part of a solution (e.g., targeted policy interventions). On the most basic level, environmental conditions may contribute to tension or violence, and addressing those environmental conditions can be part of the solution. A second type of conflict may also be related to environmental conditions, but its solution requires addressing non-environmental conditions, such as improving governance (rule of law), building capacity (infrastructure), and reducing vulnerability (poverty). In a third category, known as "environmental peacemaking," environmental conditions may not be related to the conflict, but shared environmental dependencies may provide a pathway to successfully reducing tensions. See Ali (2003) for a detailed discussion of these three points and the importance of distinguishing among them.

[20] This chapter utilizes March and Olsen's definition of political institutions as "collections of interrelated rules and routines that define appropriate action in terms of relations between roles and situations. The process involves determining what the situation is, what role is being fulfilled, and what the obligations of that role in the situation are" (1989, page 21).

[21] The Environment, Development, and Sustainable Peace Initiative, directed by Adelphi Research in Germany, the Woodrow Wilson Center in Washington, D.C., and the Universidad Nacional de Costa Rica, has attempted to bridge the gap between North and South.

was reconstituted as the Political Instability Task Force, it moved away from investigating environmental and demographic variables.

Policy integration across disciplinary borders needs to start at the research level and subsequently move into policy spheres.[22] Conflict prevention and peace building networks should be encouraged to facilitate interaction among stakeholders and foster a broader debate in the field.[23] These networks seek to bridge the gap between science and research, raise policymakers' awareness of linkages between environment and security, and facilitate dialogue through meetings, newsletters, expert workshops, and public hearings. Coordinating each initiative under an overall platform might help environment and development institutions and peace and conflict networks benefit from already-established links, and allow them to reach beyond their traditional constituencies to include institutions from the South.

2. Coordinate policy and reduce compartmentalization

Compartmentalized policymaking significantly constrains the development of integrated strategies for conflict prevention and natural resource management at the national, civil, international, and donor levels.

National

National governments are heavily compartmentalized, with clear but distinct mandates for specific subjects. Expertise on environment, development, and conflict prevention and mitigation is often spread among several departments. The limitations are obvious: the bureaucracy is too burdened by heavy administrative tasks to implement innovative features or react quickly to emerging issues in politics and society. Crosscutting issues such as ECC linkages require flexible administrative structures, but the linkage between natural resource management and security is usually championed by a single person or a smaller unit outside the mainstream. Support for linking issues across units, departments, or ministries is limited by the lack of time and human resources.

Over the past decade, public authorities in many European countries have preferred to knowingly maintain the separation between conflict and the environment, even though this topic cuts across policy portfolios. Which will prevail—separation or integration? If environment and conflict linkages are mainly the purview of environmental policymakers, they will continue to garner only marginal resources and political prominence. As development issues, they could be subsumed into well-established dialogues on poverty, equity, capacity building, and institutional strengthening, thus marginalizing natural resource issues. But if environment and conflict linkages are framed primarily by foreign and security policymakers, they might garner greater political attention. Yet these connections can hardly be expected to compete with more proximate threats on the security agenda.[24]

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[22] Examples include the Environmental Change and Security Project at the Woodrow Wilson Center, Leif Ohlsson's regular newsletter and database on Environment and Development Challenges, and the recently published information platform on Envrionment, Natural Resources, and Conflict, by Adelphi Research and the German Federal Ministry of the Environment (see http://www.krium.de).

[23] Examples include the Conflict, Development and Peace Network in the United Kingdom, which seeks to reduce violent conflict and improve policies and practice in work carried out by NGOs, academic institutions, consultants, and government departments; the Working Group on Development and Peace (FriEnt), a German NGO network for crisis prevention and conflict management; and the German platform for civil conflict management (Plattform Zivile Konfliktbearbeitung).

[24] The 2002 World Summit on Sustainable Development (WSSD) missed the opportunity to integrate conflict and peace into the environment and development agenda. Due to heavy competition among government authorities, space on the agenda was limited; as a result, environment and conflict issues never secured a prominent place at the summit (Baechler, Taenzler, & Carius, 2003). An additional example of this bureaucratic compartmentalization is the low-level dispute between German authorities and institutions on the role of environmental and development policy in addressing poverty and environment linkages in German institutions.

Civil society

The structures of NGOs and research organizations are also compartmentalized, making it extremely difficult to bridge disciplinary gaps. While some peace activist groups are starting to address natural resource management issues, environmental NGOs hesitate to approach security issues beyond the well-established links like poverty and environment, or gender mainstreaming and environment. For the most part, environmental NGOs do not stray from their field of expertise; only a few have addressed newly emerging topics like ECC linkages. Similarly, most peace and conflict civil society groups focus on their core issues, such as peace building, post-conflict intervention, and poverty eradication, and often neglect environmental dimensions of these problems. In addition, major public and private donors typically fund only those projects and issues that correspond to their segmented priorities. Without pressure from active public interest groups, it is difficult to raise the policy profile of new and unconventional ideas like the security implications of environmental change.

International

Inter-institutional cooperation is difficult to achieve both nationally and internationally, given institutions' limited mandates and specific interests, such as regional focus or ownership. And even within a single policy area, such as environmental policy, responsibility for negotiating and implementing multilateral environmental agreements is spread among various government authorities and ministries. Although international organizations are aware of this gap, it remains under-analyzed. International organizations, including those within the UN family, often lack effective coordination. Confronting the complex web of causalities and pathways responsible for environmental conflicts (especially water conflicts) requires significant interagency cooperation.

UNEP, UNDP, and OSCE are cooperating to jointly address environmental risks in Southeastern Europe, the Southern Caucasus, and Central Asia, where water plays a key role in tension and conflict.[25] This collaboration brings together the organizations' unique expertise in assessment, training, and policy development, as well as combining environment, development, and security perspectives. In addition to its direct impact on the region, this joint effort provides an institutional framework to address complex environmental risks (Carius et al., 2003). But such inter-institutional efforts require significant commitment and time to raise awareness and develop programs.[26]

Donor agencies

That donor agencies suffer from compartmentalization might be surprising, since institutional strengthening, innovative approaches to public policy, and integrated policymaking are key priorities for donor assistance to developing countries. However, donor programs and activities often utilize isolated approaches without coordinating with other divisions within aid agencies and governments. In fact, there is little evidence—or effective models—of successful coordination between environment and conflict prevention units. In some cases, multiple funding programs with the same agency, such as those focusing on the Caspian Sea, are attempting to achieve the same goal but are not coordinating their efforts and thus work at cross-purposes (Blum, 2002).

Research on transboundary water cooperation demonstrates the need for greater coordination and cooperation among donor programs. Donor-funded technical assistance is often narrowly focused, regionally or topically, and rarely takes environmental, economic, and social issues into account. Western donor agencies' bilateral programs are supposed to be coordinated in the Organisation for Economic

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[25] For more information on this joint effort by UNEP, UNDP, and OSCE, see the brief article by Gianluca Rampolla on page 51.
[26] Another interesting international example is the European Union's Cardiff Strategy, which seeks to integrate environmental concerns into all EU policy areas. The General Affairs Council in charge of external and general European affairs published a strategy paper in 2001 that includes environmental security in the future of the EU's foreign and security policy.

Cooperation and Development's Development Assistance Committee (OECD DAC); however, donor agencies commonly follow their own institutional interests to the detriment of integrated efforts. Innovative collaborative mechanisms that pool funders' resources and enable stakeholders to participate in funding decisions (such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria) remain out of reach in the ECC realm.

A second problem emerges when a donor agency tries to shift from the program to the project level: even when policy programs stress integrated approaches, they are not typically implemented at the project level.[27] Donor agencies continue to improve ways to integrate vulnerability and conflict assessments, despite their limited experience addressing ECC issues.

The U.S. Agency for International Development (USAID) is preparing briefing notes on natural resources and conflict for USAID mission staff that draw valuable lessons from case studies conducted by individual experts and academic institutions.[28] While accumulating knowledge from past experience is very common on the technical level (e.g., through best practices workshops), ECC policy does not yet utilize such learning mechanisms. In fact, there are only a few attempts within bilateral agencies and by multilateral donors to draw lessons from an aid agency's past experience. The World Bank's transboundary water team, a key facilitator in the Nile Basin Initiative (NBI), is a notable exception: lessons drawn from the NBI experience are proactively shared with other river basins.[29]

3.   Balance elite-level and broad-based stakeholder negotiations
Public participation
Determining the correct level of stakeholder participation is a crucial step towards developing policies and assuring effective implementation. While widespread public participation is generally thought to lead to more legitimate and long-lasting agreements, fully participatory negotiations may be too unwieldy or contentious to produce any consensus. Some policymakers and academics argue that in certain situations, a small number of key decision-makers should negotiate in relative secrecy to increase the likelihood of success. The NBI, facilitated by the World Bank and UNDP, adopted this elite-driven model for its regular ministerial level negotiations. Shielded from the press, these negotiations successfully produced agreements, but critics maintain that limiting civil society's involvement in the process may undercut the agreements' durability and public acceptance in the long run. To address this gap, practitioners and stakeholders should determine the best combination of elite model negotiations and broad-based stakeholder participation for each case, drawing lessons from cross-regional comparisons.[30]

Formal and informal mechanisms—ad hoc working groups, formal stakeholder dialogues, and institutionalizing crosscutting issues—facilitate policy coordination. But these mechanisms have not yet integrated security considerations into environmental and development policy programs and strategies. Without an institutional structure that allows stakeholders to advocate for integrating security considerations into policy, policymakers will not be challenged to respond to this gap.

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[27]   Although UNDP has championed integrating environment and conflict, they have yet to implement these principles at the project level. For example, their development program for Kyrgyzstan sought to contribute to the nation's capabilities for identifying conflict, early warning, and peace building in the Ferghana Valley. Surprisingly, UNDP did not include environmental aspects as crucial elements of the early warning system.

[28]   To draft natural resources and conflict toolkits, USAID's Office of Conflict Management and Mitigation worked with a partnership of international research institutions: the Center for International Forestry Research (based in Indonesia), Germany's Adelphi Research, and the United States' Woodrow Wilson Center.

[29]   See http://www.nilebasin.org

[30]   For more information on stakeholder participation and the Nile Basin Initiative, see the brief article by Patricia Kameri-Mbote on page 36.

Private sector

The private sector's potential contributions to ECC dialogue have been underestimated, and are only now beginning to attract study. For example, a report published by International Alert, an NGO based in London, examined the role of transnational companies in conflict-prone zones (Banfield, Haufler, & Lilly, 2003), as did an international workshop hosted by the Protestant Academy in Loccum and Inwent-Capacity Building International in October 2003.[31] In addition, the German Federal Ministry for the Environment commissioned Adelphi Research to conduct a report on the private sector's capacity to address natural resource conflicts and promote peace, and to facilitate a dialogue with companies in Germany.[32]

However, these efforts have demonstrated the clear distinction between the private sector's engagement in environmental management and sustainable development on one hand, and conflict prevention and corporate social responsibility on the other. Accordingly, businesses have developed policies and methodologies to address environmental operating risks and reduce negative environmental impacts of their operations that are distinct from their efforts to protect their business operations from external security threats. Even though private companies are increasingly interested in improving their social responsibility and developing strategies to reduce the social impacts of their business operations, companies are only slowly recognizing the linkages between natural resource exploitation and security concerns (mainly in the extractive industries).

Therefore, it is critically important to involve the business sector in strategies that address environment and security linkages in developing countries, as they are often the biggest player in terms of money, impact, and influence. However, there is no regulatory framework that integrates these interests and policies, beyond such mechanisms as the UN Global Compact, corporate social responsibility guidelines, and voluntary codes of conduct.[33]

Security sector

Participation by security's traditional stakeholders—the intelligence community and the military—is also lacking. As the security sector's intellectual, technical, and strategic capacity to assess conflict evolves, its involvement in peace-building activities and programs raises the concerns of developing countries and Western civil action groups, who fear that military and defense forces will apply traditional means of conflict prevention and mitigation. In addition, civil groups located in developing countries that have recently emerged from the military's control are reluctant to support any initiative that might cede more power to the security sector. For example, public opinion in Latin America is extremely skeptical of the traditional role of the military, and it is unclear that the public will support the military's involvement in addressing transnational threats like the environment (Da Costa, 2001). It is challenging to involve these important stakeholders in the debate on environment and security and still prevent it from being militarized or creating sovereignty concerns in many developing countries.

4. Achieve the appropriate scope for interventions

Western governments have traditionally favored addressing environment and security issues by strengthening multilateral environmental agreements. But these agreements are limited to environmental problems, even though the scope has often been extended to include sustainability issues. Dispute resolution mechanisms can only address conflicts over the content and interpretation of these agreements' regulatory schemes; therefore, they cannot serve as a tool for broader confidence building or conflict

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[31] The "Ecology and Peace in Crisis-Prone Regions" conference discussed the specific role of the private sector in sustainable development and conflict prevention. The conference proceedings will be published by the Loccum Academy; see http://www.loccum.de/english/english.html

[32] For more information on Adelphi's projects, see http://www.adelphi-research.de/en/projects/item/0/52.html

[33] The UN Global Compact is an international initiative that seeks to bring companies together with UN agencies, labour, and civil society to support ten principles in the areas of human rights, labour, and the environment (see http://www.unglobalcompact.org).

prevention. The scope of multilateral and regional environmental agreements is often too large to address the environmental causes of conflicts or trigger environmental cooperation at the local level; such conventions are often criticized as an inappropriate way to reach affected communities and stakeholders on the ground. These tools appear woefully inadequate for livelihood conflicts and their connection to natural resources, a critical level of analysis (Baechler et al., 2002; Matthew et al., 2002; Najam, 2003). In contrast, smaller-scale environmental cooperation can reduce social gaps that often underlie causes of conflict in developing countries.[34]

The duration and magnitude of donor assistance and governmental intervention must match the program's needs to attain success. The NBI illustrates the need for strong financial commitments over a long period of time; the initiative used a holistic approach to river basin management and made a twenty-year commitment to facilitate negotiations. Robust, durable, and fully funded institutions are especially critical for developing countries; many good projects cease once the external financial support ends. Donor agencies have already started to shift from project funding to program development, focusing on integrated development over longer time spans. However, the relationship between natural resources and conflict has not been integrated into these efforts.

The German Technical Cooperation (GTZ) offers a promising approach to integrating conflict prevention in sector-specific programs: it conducts peace and conflict impact assessments across regions and subject areas, and has set up a conflict prevention unit that advises regional and sector-specific departments within the donor agency; however, these mechanisms do not currently include an environmental dimension. The Swiss Agency for Development and Cooperation (SDC) was the first donor agency to conduct Peace and Conflict Impact Assessments for natural resource projects. SDC is currently reviewing this tool, conducting workshops on lessons learned, and improving its methodology.[35]

5. Improve communication, perception, and data
Current ECC framing conventions can unintentionally exclude stakeholders
How ECC issues and policies are described and communicated affects their chances for success. Some ministries argue that they already know, especially in conflict prone areas, that technical cooperation can serve as a tool for confidence building and one should not frame such projects explicitly as conflict prevention or peace building efforts. Following this line of reasoning, donor agencies sometimes do not want to label their projects and programs as conflict prevention measures to avoid misunderstanding and enable project implementation to move beyond immediate security concerns.

How a problem is labeled often determines which sector will participate in its solution. For example, conceptualizing water stress in terms of conflict brings the security actors to the table and discourages key development partners. The shift from labeling water issues as conflicts to tools for cooperation was supported by scientists and policymakers at the 2003 Third World Water Forum in Kyoto. UNESCO and Green Cross International's Potential Conflict to Cooperation Potential (PCCP) project on water cooperation clearly indicates that political attention has shifted away from water conflicts (2003).

Local communities may also object to how ECC projects are labeled. For example, some communities may not like being defined as conflict-prone in order to receive development aid. This can be especially

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[34] The Friends of the Earth Middle East project Good Water Makes Good Neighbors seeks to lessen these gaps and increase understanding among Israeli, Palestinian, and Jordanian communities by facilitating partnerships among bordering communities that are mutually dependent on water and waste management (see http://www.foeme.org/main/water_neighbors.htm).

[35] The SDC has also successfully applied this method in Angola, the Great Lakes region, Ecuador, Macedonia, and in Central Asia. It is currently developing a standard methodology for development assistance programs based on its experience (see http://www.deza.admin.ch).

sensitive in developing countries that have recently experienced acute conflict, and which may not want to approach a problem through a conflict lens.

Differences between labels and results can hurt projects

Environmental cooperation (particularly on water issues) is often cited as a tool for confidence building, based on the assumption that environmental politics or water issues are less contentious than other issues like human rights, education, or language. However, in Central Asia, water cooperation is highly political; while water negotiations among the new states of the former Soviet Union helped them assert their sovereignty, it did not dramatically improve regional water coordination (Weinthal, 2002). Similarly, many think that peace parks, by providing a demilitarized buffer zone, are a promising tool for cross-border cooperation between former enemies.[36] However, recent research reveals that peace parks have produced many conflicts over biodiversity protection, economic activities, and user rights. In these cases, conservation cooperation and water negotiations are themselves the source of conflict.[37]

Sometimes environmental issues provide a path to reach larger peace and stability goals, even though environmental conditions do not improve. For example, an integrated risk assessment for Central Asia found that environmental cooperation efforts contributed to regional stability, but failed to solve the region's environmental problems (Carius et al., 2003; Sievers, 2002).[38]

Framing ECC linkages for policymakers

When asked about ECC issues, environmental policymakers stress limited financial resources, restricted mandates, little experience with peace building, and overburdened environmental politics. Foreign policymakers argue that natural resource scarcity and degradation are merely underlying factors, not proximate causes of conflict, and that they should not privilege environmental contributions. The development community feels that framework conditions determine whether environmental stress leads to conflict, and that ECC linkages are embedded in already existing policies. Therefore, ECC issues are often championed by those on the fringes of the environmental, foreign policy, and development communities, such as intermediate organizations or politically weaker units.

To push the ECC debate forward, we should frame it in a broader and well-established policy context. The ECC debate on climate change and security could be integrated into the policy framework for vulnerability and adaptation, enabling policymakers, civil society groups, and academic institutions to rely on well-established networks. Alternative contexts or frames include the concept of human security, human rights and environment, local livelihoods, and poverty eradication. As these issue linkages are already present on the development agenda, they could benefit from existing networks and funding schemes.

UNEP and other international organizations might help to overcome this communication deficit by conducting integrated vulnerability assessments to identify hot spots and issue linkages. When donor agencies develop projects, the impacts and results of these projects should be monitored and the lessons shared. Thus, UNEP and others should establish a system that monitors success and translates these results into political terms. But given that UNEP's mandate is limited to environmental issues, and bearing in mind the risk of reducing the debate to mainly environmental topics, UNEP would need to partner with other institutions, as in UNEP, UNDP, and OSCE's joint initiative (Carius et al., 2003).

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[36] See the brief article by Saleem H. Ali on page 34 for a discussion of the K-2 Peace Park proposal in India and Pakistan.
[37] For an overview on the limits of nature conservation as a tool for confidence building, see Carius (2003) and Schroeder-Wildberg (2003).
[38] See the brief article by Alexander López on page 48 on the Lempa River Basin's Trifinio Plan.

Lack of legitimate data makes it difficult to convince policymakers and motivate political will

While many vulnerability assessments have been carried out on a global, regional, national, domestic and even local level,[39] most of these efforts focus on the global scale, and several have been criticized for neglecting specific regional and local information. UNEP, UNDP, and OSCE's joint initiative clearly demonstrates the problem of data legitimacy: data generation is highly contested, emerging from various consultative processes, rules, and routines, including intergovernmental negotiations (as in the case of the indicators for UNDP's annual *Human Development Report)*. This deficit can be addressed by using broader consultative processes that involve governments, NGOs, and multilateral and bilateral aid agencies; such broadly accepted assessments enable stakeholders to prepare appropriate policies and programs.[40] For example, data generation and legitimacy is a crucial issue in transboundary water management and can only be achieved through stakeholder involvement (Turton, 2003; Turton and Henwood, 2002). The process of determining data standards is itself a step along the pathway to using environmental issues as a confidence-building tool.

Methodologies and technologies that improve data sharing, especially between Northern and Southern researchers, would help policy development. In addition, cross-boundary data sharing between Southern researchers and policymakers could lead to increased cooperation and confidence building, as it would reduce suspicion among states.

Integrating Environment, Conflict, Cooperation, and Peace

The previous sections outlined gaps and opportunities in institutional responses to ECC linkages. As we continue to analyze the relationship between environment and conflict, moving away from an exclusive focus on resource scarcity as a source of conflict, and towards using environmental cooperation efforts to promote peace and stability, institutional coordination becomes increasingly important.

To benefit from the dynamic dialogue between academic institutions and policymakers, we need to integrate research programs across disciplinary borders, leading to greater coherence among the environmental, development, and peace and conflict research communities. In addition, we should facilitate mechanisms and institutions to bridge the gap between academic communities and policymakers. The ECC debate goes beyond single-issue approaches and requires broader communication platforms and ways to learn from past experiences. Accumulating knowledge from practical project implementation would help shape research efforts to meet political and societal needs.

Regional and transboundary efforts for environmental cooperation, especially in conflict-prone areas, are only beginning and cannot yet be deemed successes. They require long-term project cycles and careful assessments of their interaction with parallel political and social processes and institutions. Most importantly, we must determine which mechanisms effectively prevent conflict. So far, we know little about the level and type of participation, the shape of institutions, the degree of coordination, and the conditions under which technical cooperation becomes political cooperation and produces high levels of trust and confidence.

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[39] This includes the GLASS model to assess water crises, the U.S. government's Political Instability Task Force (http://www.cidcm.umd.edu/inscr/stfail/), Swisspeace's FAST Project (http://www.swisspeace.org/fast/default.htm), the World Water Assessment Programme (http://www.unesco.org/water/wwap/), and the Forum on Early Warning and Early Response (http://www.fewer.org/).

[40] Innovative approaches to generating, sharing, and interpreting data have been introduced by Swisspeace in several conflict-related projects in the Horn of Africa and on the Blue Nile, including an academic exchange program. See the brief article by Eva Ludi and Tobias Hagmann on page 19 for more information on Swisspeace's research program in the Horn of Africa.

Focusing on environmental cooperation within states and across borders can generate insights from existing cases, as demonstrated by the rich case studies produced by the PCCP project (2003). We also must ask the right questions in the right context: which measures have proven to be successful in the past or in other issue areas? What factors make institutions successful and what elements make them durable? What are the common features of unsuccessful institutions or institutional responses? Which social groups need to be strengthened? Which institutions should be established? How can we promote fairness when building institutions? As these questions are not specific to ECC linkages, the portfolio of potential interventions is rather broad, including environmental, social, political, economic, and security measures. Developing toolkits for incorporating environmental cooperation into conflict prevention would therefore include a set of specific questions and mechanisms to monitor progress and assess the dynamics of ECC processes.

Institutional efforts to address environment and security linkages are crucial to developing effective and appropriate mitigation and preventive strategies. Yet researchers' understandings and policymakers' interventions remain weak. To promote the design and implementation of effective institutional frameworks, researchers, policymakers, and civil society should initiate a broader, more practical dialogue on best practices and on transferring innovative institutional efforts. Researchers in particular must turn their attention from determining causal linkages to assessing the effectiveness of institutional interventions. Policymakers must move beyond reacting to symptoms of environment and security linkages and learn from institutional interventions that bolster confidence and cooperation rather than instability.

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