

Environmental Cooperation as an Instrument of Crisis Prevention and Peacebuilding: Conditions for Success and Constraints

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Table of Contents

| | | |
|-------|--|----|
| 1 | Introduction..... | 2 |
| 2 | Approaches to Ecological Peacebuilding | 6 |
| 2.1 | Causes of ecological conflict..... | 6 |
| 2.2 | Environmental cooperation as a platform for dialogue..... | 7 |
| 2.3 | Sustainable development as a prerequisite for durable peace | 8 |
| 3 | Environmental Cooperation as a Mechanism for Conflict Transformation and Peacebuilding..... | 9 |
| 3.1 | Tapping the ecosystem and ecoregional potential..... | 9 |
| 3.2 | Ecological interdependence demands cooperative action | 10 |
| 3.3 | Democratisation of social and political structures | 11 |
| 4 | Political and Social Conditions Necessary for Environmental Cooperation to Facilitate Peacebuilding | 12 |
| 4.1 | Environmental cooperation as an incentive | 12 |
| 4.2 | Transforming environmental cooperation into political cooperation..... | 14 |
| 4.2.1 | Water cooperation in Central Asia | 15 |
| 4.2.2 | Water cooperation in the Middle East..... | 16 |
| 4.2.3 | Cooperation in nature conservation in the Southern Caucasus..... | 16 |
| 4.2.4 | Cooperation in nature conservation in Southern Africa..... | 17 |
| 4.2.5 | Cooperation in nature conservation in the Altai Mountains..... | 17 |
| 4.2.6 | Environmental cooperation as a part of foreign and security policy..... | 17 |
| 4.2.7 | Synthesis..... | 18 |
| 5 | Institutional Requirements and Constraints..... | 19 |
| 5.1 | Institutions for promoting water cooperation | 20 |
| 5.2 | Forms of participation | 21 |
| 6 | Methods of Impact Assessment | 22 |
| 7 | Conclusions and Recommendations | 25 |
| 7.1 | Conclusions | 25 |
| 7.2 | Recommendations | 25 |
| 8 | Bibliography..... | 28 |

1 Introduction

Since the beginning of this decade, the warnings of high ranking government officials and representatives of international organizations about future water wars and environmental refugees, have been slowly giving way to the growing hope that environmental cooperation will promote stability and peace between conflicting parties. Thus, transboundary cooperation for environmental conservation (Peace Parks), international river basin management, regional marine agreements and joint environmental monitoring programmes can enhance cooperation between communities or countries. The more such initiatives exist and the more momentum they gain, the more they will help communities resolve conflicts in a constructive and consequently non-violent manner. Surprisingly, there is still relatively scant information on what form transboundary initiatives for environmental cooperation could take, and the conditions under which these could best contribute to conflict prevention, conflict transformation and peacebuilding. Little is known about the constraints they would be subject to, and under what conditions environmental cooperation can develop into broader forms of political cooperation and generate a social and political dialogue going beyond environmental issues. There is insufficient empirical evidence so far to substantiate either the theory of environmental wars or environmental peacebuilding.

There are nevertheless a number of initiatives by governmental and international institutions focusing on the linkages between resource degradation, ecological distribution conflicts and conflict and cooperation. The most important initiatives are presented below, by way of example.

Table 1: Selected initiatives on environment, conflict, peace and security

| Group or Country | Year | Initiative |
|---|--------------|--|
| Club of Rome/ U.S. Department of State | 1972 1981 | The Club of Rome's <i>The Limits to Growth</i> and the U.S. government's <i>Global 2000 Report to the President</i> called attention to environmental risks and an array of associated socioeconomic changes (population growth, urbanization, migration) that could lead to social conflict. |
| Independent Commission on Disarmament and Security Issues | 1982 | In its first report, <i>Common Security (Palme Report)</i> , the Commission stressed the connection between security and environment. |
| World Commission on Environment and Development (Brundtland Commission) | 1987 | The Commission expanded the concept of security in <i>Our Common Future (Brundtland Report)</i> : "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." 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." |
| UNEP/ Peace Research Institute Oslo (PRIO) | 1988 | A joint program between UNEP and the Peace Research Institute, Oslo (PRIO) on "Military Activities and the Human Environment" included empirical research projects that were |

| | | |
|---|--------------|--|
| | | largely conceived and implemented by PRIO. From this initiative, PRIO developed a strong research focus on environment and security. |
| Soviet Union | 1989 | The then Soviet Foreign Minister Eduard Shevardnadze and President Mikhail Gorbachev proposed at the 46 th General Assembly of the United Nations that an Ecological Security Council be created under the aegis of the United Nations. Since then repeated suggestions have been made to have environmental issues elevated to this political level. |
| Norwegian Government | 1989 | In 1989, the Norwegian Defence Minister Johan Jørgen Holst, pointed out that environmental problems can become an important factor in the development of violent conflicts. |
| UNDP | 1994 | The UN Development Programme explicitly included environmental security as one of the components of “human security,” a point of view that continues to find favour within the UNDP and among some prominent national delegations, such as that of Canada. |
| German Government | 1996 | The Federal Ministry for the Environment, nature Conservation and Nuclear Safety commissions a report on environment and conflict in order to investigate ways and means of strengthening international environmental laws. |
| Organisation for Economic Co-operation and Development (OECD) | 1998 | Development Assistance Committee (DAC) of the OECD commissions a report on environment and conflict. |
| North Atlantic Treaty Organisation (NATO) | 1999 | After three years of consultations with international experts and politicians from the security and environment sectors, the Committee on the Challenges of Modern Society (CCMS) publishes an extensive report in March 1999, entitled "Environment and Security in an International Context". |
| European Union (EU) | 2001 2002 | The EU General Affairs Council presents its strategy for ecological integration regarding the topic of environment and security, and the contribution of sustainable development to regional security in April 2001 (endorsed in March 2002). The EU debates on the integration of environmental security in its future Common Foreign and Security Policy and endeavours to have this issue discussed at the World Summit on Sustainable Development in 2002. |
| Swiss Agency for Development and Cooperation | 2002 | Swiss Agency for Development and Cooperation (SDC) investigates the possibilities of adapting peace and post-conflict analyses to selected projects of their environmental programme. |
| United Nations | 2002 | United Nations Secretary-General Kofi Annan calls for a better integration of ecological factors of conflict and instability into the strategy on conflict prevention of the UN and also into the activity of the High Level Panel on Threats, Challenges and Change. |
| German Government | 2004 | After being endorsed by cabinet in May 2004, the action plan on "Civilian Crisis Prevention, Conflict Resolution and Post-Conflict Peace-Building" is published. It identifies sustainable development and transboundary environmental cooperation as central instruments to facilitate peace and stability. |

Source: (Conca/Carius/Dabelko 2005)

While a growing number of studies are devoted to the relationship between environmental degradation and violent conflicts, the equally important issue of how environmental cooperation can contribute to peacebuilding has hitherto rarely been subjected to systematic analysis. Indeed, at the political level there has been no significant interest in studies or initiatives on this issue. This is primarily due to political reservations about questioning ongoing environmental cooperation projects in crisis or conflict regions.

The German government's Action Plan for "Civilian Crisis Prevention, Conflict Resolution and Post-Conflict Peace-Building" adopted in May 2004 highlights the crisis prevention and peace promoting character of transboundary and regional environmental cooperation, since such "endeavours can serve as confidence-building measures in conflict-ridden areas" and act as a "catalyst and stimulus for confidence-building measures and conciliation processes in areas fraught with tension" (German Federal Government 2004: 54). The key areas of action are transboundary cooperation in water management and land reform projects. The Action Plan highlights the German government's initiatives under the Petersberg Process and the need for long-term commitment to support confidence-building as key elements of crisis prevention during water conflicts.

The objective of the present brief study is to identify the conditions under which environmental cooperation can facilitate conflict transformation and peacebuilding. It also examines which specific forms of negotiation or stakeholder constellations have so far proved particularly successful. The study is primarily an attempt to systematize the role of environmental cooperation with regard to conflict prevention and peacebuilding and to define its scope more clearly. The study focuses on the following issues:

1. Why does cooperation in shared natural resources lend itself to the prevention of armed conflicts and to building peace?
2. Which political and social factors favour the evolution of environmental cooperation into a wider social and political peace process?
3. Which conditions facilitate or hinder this development?
4. Is it possible to estimate the impacts of transboundary environmental cooperation on peacebuilding and conflict prevention?
5. Which methodological approaches are suitable for designing conflict-sensitive environmental and natural resource conservation projects within the framework of development cooperation?

Given past experiences with transboundary environmental projects as mechanisms for peacebuilding, it is unlikely that many concrete answers will emerge to these questions within the scope of the present study. A review and evaluation of past experiences will consequently be used to pinpoint the lessons learned as well as the shortcomings in the debate about environmental cooperation as a mechanism for peacebuilding. Areas for action and the requirements for development cooperation will also be highlighted.

To address these questions, on the one hand the existing literature on environmental peacemaking was reviewed and evaluated, on the other hand an exemplary selection of studies on water cooperation and cooperation in nature conservation in Southern Africa, the Middle East, Latin America and Central Asia (see Table 2) was analysed. Apart from

this, experiences with environmental cooperation projects in crisis and conflict regions were used to identify restrictive mechanisms during programme development, implementation and impact assessment.

Table 2: Overview of case studies analysed in the study

| Project / Programme title | Executing institution | Countries |
|---|--|---|
| Transboundary Biosphere Reserve Altai mountains | German Federal Nature Conservation Agency | Russia, Mongolia, China, Kazakhstan |
| Ai-Ais Richtersveld Transfrontier Park | Ministries of the Environment of Namibia and South Africa | Namibia, South Africa |
| ECOPAS/ W Parc ECOPAS Project (Ecosystème protégés en Afrique sahéenne) | Benin, Burkina Faso, Niger; European Union, Funding: European Development Fund | Benin, Burkina Faso, Niger |
| Great Limpopo Transfrontier Park | South Africa, Mozambique, Zimbabwe: Treaty | South Africa, Mozambique, Zimbabwe |
| International Gorilla Conservation Programme | Congo, Uganda, Rwanda; Implementation: African Wildlife Foundation, Flora & Fauna International, World Wide Fund for Nature (East Africa) → IGCP | Democratic Republic of the Congo, Uganda, Rwanda |
| Project "Sustainable Development of Mountain Regions of the Caucasus – Local Agenda 21" | Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Office for Forest, Nature and Landscape of the Principality of Liechtenstein | Russian Federation, Armenia, Georgia, Azerbaijan |
| Kgalagadi Transfrontier Park | Department of Wildlife and National Parks (DWNP), USAID RCSA, Peace Park Foundation, SAN Parks | Botswana, South Africa |
| National park Thayatal – (Podyji) | Czech Republic, Austria; National park management Austria | Czech Republic, Austria |
| Selous Conservation Programme SCP | German Technical Cooperation (GTZ); Tanzanian Wildlife Division | Tanzania and Mozambique |
| Selous-Niassa Wildlife Corridor Research Project | GTZ, Financed by the German Government under its Tropical Ecology Support Programme (TOEB) | Tanzania and Mozambique |
| Trifinio Plan | Organization of American States, Inter-American Institute of Cooperation for Agriculture | El Salvador, Guatemala, Honduras |
| Nile Basin Initiative www.nilebasin.org | World Bank, UNDP, CIDA, et al. | Egypt, Ethiopia, Kenya, Democratic Republic of the Congo, Rwanda, |

| | | |
|---|--|--|
| Nile Basin Discourse www.nilebasindiscourse.org | CIDA | Somalia, Sudan, Tanzania, Uganda |
| Regional Water Data Banks Project www.exact-me.org | Financial and technical assistance by: EU, France, The Netherlands, USAID (formerly also Australia and Canada) | Israel, Palestinian Territories, Jordan |
| Good Water Makes Good Neighbors www.foeme.org | Friends of the Earth Middle East Financial assistance by EU and US Government Wye River Program | Israel, Palestinian Territories, Jordan |
| OKACOM (Permanent Okavango River Basin Water Commission) | | Botswana, Namibia, Angola |
| SADC Protocol on shared Watercourse Systems | Southern African Development Cooperation (SADC) | Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe |

To answer the questions outlined, the study is structured as follows. Section 2 outlines three approaches to ecological peacebuilding. In Section 3, the function of environmental cooperation as a mechanism for conflict transformation and peacebuilding is discussed. The political and social conditions necessary for environmental cooperation as a contribution to peacebuilding are identified in Section 4. Section 5 examines the institutional requirements, which foster or restrict the peacebuilding impacts of transboundary environmental cooperation projects. Section 6 focuses on the scope of existing approaches to assess peacebuilding impacts, while Section 7 contains proposals on how to address the identified shortcomings in further in-depth studies.

2 Approaches to Ecological Peacebuilding

The majority of ecological peace initiatives can be classified in one of three partly overlapping categories. (1) Initiatives to prevent conflicts that are directly related to the environment; (2) attempts to initiate and sustain a dialogue on transboundary environmental cooperation between parties to a conflict; and (3) initiatives that are directed at achieving lasting peace by promoting conditions for sustainable development (Carius/Dabelko 2004; Conca/Carius/Dabelko 2005).

2.1 Causes of ecological conflict

If the minimum requirement for peace is defined as the "absence of violent conflict", then ecological cooperation can potentially play a role in preventing the kind of violence that erupts due to the uncontrolled exploitation of natural resources, the destruction of ecosystems or the devastation of livelihoods based on natural resources. Most of the research, which establishes a link between environmental degradation and violent conflict, highlights two key aspects. Firstly, the pressure on resources on which people are economically dependent must be reduced. Secondly, the institutional capacities to respond to ecological challenges must be strengthened. In other words, the most direct

means of ecological peacemaking are measures to prevent ecologically induced conflicts (UNEP 2004; Conca/Carius/Dabelko 2005).

In certain situations, ecological cooperation can also assuage the anger of groups who perceive themselves to be victims of ecological injustice and consider this to reinforce their socially and economically disadvantaged status. Latent environmental problems may thus coalesce into an explosive combination of material insecurity coupled with the perception of being marginalized. In situations where ethnic identity determines access to political and economic opportunities, environmental impacts tend to affect different ethnic groups unequally. The most heavily polluted industrial regions in the post-Soviet Baltic States, for instance, have a largely ethnic Russian population. This is a situation that creates a potentially explosive mix of burgeoning ethnic and national identity, mounting social discrimination and ecological mismanagement. Active ecological cooperation could help alleviate one important cause of this festering discontent, which is only exacerbated by such kinds of social cleavages and social exclusion.

2.2 Environmental cooperation as a platform for dialogue

A second approach to ecological peacebuilding is directed at conflicts that have no specific ecological cause. The objective is to create peace through cooperative solutions to common ecological challenges. Initiatives that address common ecological problems can be used to bring about an initial dialogue between the parties to the conflict when other political and diplomatic approaches have failed. In many instances, countries whose relations are otherwise characterized by distrust and hostility, if not open violence, have found that environmental issues are one of the few areas in which they can sustain an ongoing dialogue.

One of the most complex, unresolved conflicts in the politically highly unstable Caucasus region is the dispute over Nagorny Karabakh between Armenia and Azerbaijan. In autumn 2000, the government of Georgia, which had also mediated a dialogue on environmental issues at an earlier stage, was able to convince Armenia and Azerbaijan to set up a trilateral biosphere reserve in the southern Caucasus region. The initiators are hopeful that regional environmental cooperation within this framework will not only strengthen nature conservation and sustainable development, but also promote political stability in the region. The first steps under this long-term project are to gather data, develop capacities for action and enhance ecological awareness amongst the population in the region. Although Armenia and Azerbaijan are currently not yet prepared to cooperate directly, the agreement envisages the creation of national biosphere reserves, which will ultimately be integrated into a single conservation area. The fact that Armenia and Azerbaijan have advocated an independent, international environmental assessment of Nagorny Karabakh by UNEP is a further hopeful sign that objective data acceptable to both sides could lay the foundation for future cooperation (UNEP/OSCE/UNDP 2004).

A similar attempt has been made in Kashmir, a region over which India and Pakistan have been fighting bitterly since the end of British colonial rule post World War II. International environmentalists are of the view that the establishment of a Peace Park in the Karakoram mountains lying between India and Pakistan in the western Himalayas and the joint management of this unique glacial region, in which numerous soldiers have fallen victim to

the adverse forces of nature rather than political adversaries, could help defuse this bloody border conflict. The concept of joint management is also rooted in the realisation that environmental degradation poses the greatest danger to this unique ecosystem. Of course, it should not be expected that a joint environmental programme in a remote, barely inhabited region, where even maintaining a permanent military presence is practically impossible due to the prohibitive costs, will fundamentally alter the structural dynamics of the Indo-Pak conflict. Nevertheless, given the current truce and the recent thawing in relations between the two countries, there are grounds for hope that cross-border activities of this kind will play an important role in conflict transformation.

Common ecological challenges, however, do not only pave the way for a societal dialogue. By overcoming barriers to cooperation and replacing distrust, suspicion and divergent interests with a shared knowledge base and common goals, they have the potential to transform relationships traditionally marked by conflict. Technically complex issues, in which conflicting parties almost invariably rely on disparate, fragmented information, can intensify mutual distrust. The technical complexity of many ecological issues can be used to overcome this shortcoming and build up a shared knowledge base. For instance, the Permanent Okavango River Basin Water Commission (OKACOM) identified joint studies of the Okavango flow and the potential implications of constructing dams for hydro power and diverting water for irrigation as a key step towards laying down mutually acceptable minimum requirements for successful and peaceful water resource management (Earle/Mendez 2004).

Sceptics might object that such initiatives are peripheral and irrelevant as far as the actual causes of conflict are concerned, not unlike the space cooperation between the super powers during the Cold War. This objection, however, fails to take into account the high political and economic commitment required for environmental cooperation in the affected regions. Since problems relating to shared river basins, regional biodiversity, forest ecosystems or land and water use are frequently very controversial and associated with a high resource investment, they are dealt with at the highest level in the countries concerned.

2.3 Sustainable development as a prerequisite for durable peace

A third approach to conflict prevention and peacebuilding through environmental cooperation is based on the premise that long-term and comprehensive sustainability are a prerequisite for durable peace. Consequently, the question as to whether water scarcity is the 'cause' of the conflict between Israelis and Palestinians fails to address the root of the problem. A solution to the shared water problem is a necessary but insufficient precondition for lasting peace. Even if the water disputes between Israel and Palestine were not the actual cause of the conflict, the joint management of shared water resources represents more than just a significant opportunity to keep alive the dialogue between both parties, regardless of the overriding conflict. They are also the key to negotiating a resolution. During the Oslo Peace Accord negotiations between Palestine and Israel, water was such a critical issue that a special negotiating group was set up specifically for this purpose. This was also the case during the 2004 negotiations between India and Pakistan on the Kashmir issue. Irrespective of whether water is the cause of conflict or

has merely aggravated an existing conflict, no lasting peace is possible in the region without a sustainable and joint water policy (Wolf 2001). However, one needs to guard against the manner in which this argument is bandied about in the political debate. Concepts of sustainable development aim at achieving a balance of ecological, social and economic interests so that the natural resource base is preserved for future generations. Sustainability is thus an attempt to achieve an ideal society, which is free of distribution conflicts, poverty, marginalization, corruption and violence.

3 Environmental Cooperation as a Mechanism for Conflict Transformation and Peacebuilding

3.1 Tapping the ecosystem and ecoregional potential

One of the chief functions of environmental cooperation as a mechanism for conflict transformation and developing peace is evidenced in the utilization of the potential inherent in ecosystems and ecoregions, especially with regard to water as a resource. Water is an essential commodity, indispensable for the wellbeing of humanity, the environment and for economic progress. Households, agriculture, industry, electricity generation and ecosystems all require this resource in timely and adequate quantities and quality. Water management always serves multiple objectives, and the stakeholders are therefore forced to balance competing interests. The natural water cycle connects not just different sectors, such as agriculture, industry and fisheries, but also different regions and countries. Water flows, whether in rivers or as ground water, and the impacts of water use and water pollution are therefore visible even at distant locations and across national borders.

Dependence on the same water resources can therefore create communities of diverse users and stakeholders, fostering cooperation and transcending conflicting economic interests, thereby generating advantages for all participants through the cooperative management of natural resources. For this to be successful, however, established modes of perception will also have to change and the potential for forging communities and solidarity highlighted. Water is not just any random ecological input factor. For the concerned stakeholders, it is perceived as a security issue, which has a critical influence on human health and economic development in a region. Other perspectives that provide a useful basis view water as a gift of nature, which frequently plays an important role in traditional and religious customs. Water is regarded as the fulcrum of a local community, especially in areas where the population is heavily dependent on irrigation for cultivation. The protection of common water resources can thus be part of a common vision and facilitate the participation of local and non governmental organizations.

Through history, humankind has been resourceful in finding ways to deal with water scarcity and cooperating to manage water resources. In some cases (e.g. the Israel-Palestine issue), water problems offer one of the few chances for cooperative dialogue in otherwise heated bilateral conflicts. In some political hotspots, water is a key component of regional development negotiations (for instance, the SADC region, the Baltic States or the Trifinio region in Central America), which themselves are indirect strategies of conflict prevention. Water has helped pave the way for greater trust and cooperation and also

helped prevent conflicts in heavily disputed river basins. Some researchers have identified cooperation over water resources as a highly promising approach to peacebuilding because riparian countries are willing to enter into lengthy and complex negotiations so as to benefit from the mutual development of water resources.

So far, the attempts to translate the insights from the environment and conflict debate into a viable policy framework for environmental cooperation and sustainable peace show some signs of real promise. However, up to now there has neither been any broader political and social debate on these approaches, nor have they been implemented. More research in this area is needed to better understand how water - an internationally shared and indispensable resource, which triggers highly emotive responses - can serve as a cornerstone for confidence building and as a potential bedrock of peace. If a better understanding of the conditions under which water can lead to conflicts or promote cooperation is achieved, then mutually beneficial cooperation over water resources can be employed in a more focused manner to prevent conflict and promote sustainable peace between states and social groups (see also Section 4).

3.2 Ecological interdependence demands cooperative action

Due to the intricate interdependencies in ecosystems, the participating stakeholder groups can benefit from cooperative measures, even if at first there appears to be an asymmetrical constellation of interests. Environmental problems along rivers often result in serious conflicts between upstream and downstream riparians, and these make cooperation a highly complicated affair. Most international water agreements are therefore based on the premise that upstream and downstream states have fundamentally different interests with regard to water use and environmental conservation. Typically, regional contexts are linked through many simultaneous, overlapping ecological interactions. For instance, areas which are upstream with regard to certain ecological aspects can be downstream with regard to other ecological aspects. Japan, for example, is situated downstream of wind currents from China's heavily polluted industrial belt, however both countries also share a regional sea. The United States is situated upstream of Mexico on the Colorado river, however it is seriously affected by pollution from the maquiladora plants, which are located along the US-Mexican border. It is these complex mutual interdependencies that open up opportunities to transform various ecological problems into durable forms of environmental cooperation.

The structure of ecological problems frequently necessitates the adoption of preventive measures, which are long-term in nature. At the same time, such measures must be sufficiently flexible to be able to respond to unexpected, abrupt and critical changes. In view of this, institutions of environmental cooperation can provide decision-makers with a long term framework for action in which future benefits are given greater priority over short term interests. Empirically, a trend in this direction can be observed in water cooperation. Thus in recent years there has been a rise in the number of instances where countries have entered into agreements on shared river basins and set up permanent river commissions as a platform for sharing information, data collection and developing long-term perspectives on joint river basin management (Conca/Wu/Neukirchen 2003).

Environmental issues encourage people to cooperate at the societal as well as the international level. Social interest groups can make use of mutual ecological dependence across territorial borders to facilitate cooperation. This is often the first step towards initiating a dialogue, which is difficult to mediate through official political channels. Over a period of time, the regular interaction between academia and civil society actors can help lay the foundation for mutual trust and implicit political cooperation. For instance, despite the daily battles on the streets of the West Bank and Gaza, Palestinians and Israelis continue to manage their shared water resources through informal and technical mechanisms.

3.3 Democratisation of social and political structures

As a mechanism for peace, the environment has some useful, perhaps even unique qualities that are well suited for peacebuilding and conflict resolution. Environmental problems ignore political borders. They require a long-term perspective, encourage participation by local and non-governmental organisations, help build administrative, economic and social capacities for action and facilitate the creation of commonalities that transcend the polarisation caused by economic relations. It is also true, of course, that isolated factors such as the complexity of the problem or the need for sustained political commitment can often act as barriers to transboundary environmental cooperation. A case in point is the attempt to improve environmental quality. However, when viewed from the perspective of peacebuilding and conflict transformation, environmental cooperation plays another, more important role. As environmental cooperation develops and societal and political stakeholders are systematically integrated in negotiation processes to protect natural goods, a simultaneous thrust is given to building trust, initiating cooperative action and encouraging the creation of a common regional identity emerging from sharing resources. It also helps establish mutually recognized rights and expectations (Adler 1997; Adler/ Barnett 1998; Nagler 1999).

Environmental policy at the national as well as the regional and international level is very closely related to issues of the modernisation of the state and society. It plays a significant role in strengthening civil society and in the democratisation of the transformation economies in Central and Eastern Europe as well as the states of the former Soviet Union. Access to environmental information, jurisdiction, class action suits, public participation in investment projects and the availability and dissemination of environmental information and education play a significant role in democratising and empowering societies. Moreover, following the major environment and sustainability summits in Stockholm (1972), Rio de Janeiro (1992) and Johannesburg (2002), sustainability initiatives and strategies at the governmental and non-governmental level have resulted in policy integration and also in a more long-term and innovation-oriented approach at the political and societal level in several countries around the world.

4 Political and Social Conditions Necessary for Environmental Cooperation to Facilitate Peacebuilding

4.1 Environmental cooperation as an incentive

History tells us that, on balance, international water disputes are usually resolved in a cooperative manner, even between hostile states and even when other contentious issues simultaneously erupt into conflict. Countries that are the bitterest enemies have entered into water treaties or are in the process of negotiating such agreements. The institutions that are established as a consequence have often proved to be surprisingly stable, even when political relations in general are highly strained.

The Mekong Committee, for instance, an intergovernmental body set up by the governments of Cambodia, Laos, Thailand and Viet Nam in 1957, served as a means for member states to share data and information on the development of water resources even during the Viet Nam War. After the failed Johnston negotiations, Israel and Jordan held several secret "picnic table talks" regarding the distribution of the Jordan waters between 1953 and 1955, despite the fact that both states were at war from the time Israel gained independence in 1948 to the signing of the Peace Treaty in 1994. The Indus Commission has survived two major wars between India and Pakistan.

Fundamentally, mutual dependencies in global politics serve to strengthen peace. However, mutual dependencies that are primarily rooted in economic and financial ties can also lead to severe polarisation, as the massive protests against economic globalisation have demonstrated. Ecological cooperation is a serious option for building up cross-border collaboration at a level removed from the narrow and frequently divisive sphere of economic relations. Many citizens' initiatives and grassroots organisations in Mexico and the USA, which emerged from the protest movements against the North American Free Trade Zone (NAFTA), for instance, are working on joint environmental projects along and on both sides of the border (Conca 2000; Markoff 1999). Transboundary environmental cooperation could, in the long term, lead to a broader understanding of geographical spaces and communities, thereby replacing the traditional concept of a mutually exclusive, politically defined identity with one of an ecological community.

The exchange of information or water sharing agreements alone will not result in peace. Yet they can provide the initial impetus for broader cooperation between conflicting parties. The Trifinio Plan, for example, represents a framework for broad regional integration in Central America (Lopez 2004). This process was initiated through a technical cooperation agreement in 1986 between three countries, Guatemala, El Salvador and Honduras, the Organization of American States (OAS) and the Inter-American Institute of Cooperation for Agriculture. The first activity undertaken jointly was a study of three transboundary watersheds straddling the borders of the three participating countries. Subsequently, the countries embarked on a joint pilot project in the border region - financed by the European Union - under which 4,500 hectares of land were reforested. The joint implementation of this project strengthened the institutional structures of cooperation. In the third phase of the Trifinio Plan, cooperation was consolidated with the setting up of a Trilateral Commission.

The Trifinio Plan also acted as a catalyst for further cooperation. For instance, the long-standing border conflict between El Salvador and Honduras was resolved through cooperation with the Commission for Delimitation of the Borders. At the local level, the Trifinio Plan has enhanced the existing cross-border relations in the economic sphere and also in other areas. Health services, for example, are jointly provided to inhabitants of the border region. After two decades of war and violence in the region, especially in El Salvador and Honduras, the Trifinio Plan promoted intergovernmental dialogue in the post-war period and played a significant role in confidence building among the countries. One of the principal objectives of the Plan is to remedy the underlying cause of many conflicts in the border region, namely the social and economic isolation of these countries. One of the preconditions for this was the cessation of armed conflict in Central America as a result of the Esquipulas II Accord (1987).

In Southern Africa, too, the ending of the armed conflict paved the way for environmental cooperation, which in turn has encouraged the economic development of the region. Several intergovernmental river basin agreements were concluded in Southern Africa in the 1970s and 1980s, a time when numerous local wars were raging in the region (among them the anti-apartheid struggle in South Africa and the civil wars in Mozambique and Angola). Although the negotiations were protracted, the agreements nevertheless marked rare moments of peaceful cooperation. Now that most of these wars and apartheid are history, water cooperation is proving to be one of the pillars of regional cooperation. In fact, the Protocol on Shared Watercourse Systems of 1995 was the first Protocol that was signed under the auspices of the Southern African Development Community (SADC) (Wolf/Kramer/Carius/Dabelko 2005).

Along the Nile too, all ten riparian countries are currently participating in high level governmental negotiations for the development of the Nile basin, despite the partly shrill war rhetoric, which in public characterises the relations between the upstream and downstream riparians. The riparian countries have a common vision of achieving the sustainable socio-economic development of the region through an equitable use of the shared resources of the Nile basin (<http://www.nilebasin.org>).

In other conflict regions, water cooperation alone has not sufficed to initiate more far-reaching cooperation. For example in the Middle East there is cooperation at a technical level on water issues. The Regional Water Data Banks Project (www.exact-me.org), for instance, was set up in 1994 to facilitate the exchange of compatible, consistent and reliable water data between Israel, Jordan and the Palestinian territories. Institutions from all three countries are successfully cooperating under the auspices of the project. At the local level, the "Good Water Makes Good Neighbours" project of the NGO Friends of the Earth Middle East (<http://www.foeme.org>) has been promoting dialogue and cooperation with regard to water issues between neighbouring communities in Israel, Jordan and the Palestinian territories since 2001. Both projects were successful in establishing cooperation between the involved groups. At the political level, however, cooperation remains elusive. In agreements between Israel and Palestine, water issues were referred to the final status negotiations along with the highly complex refugee issue and the status of Jerusalem. In the Peace Treaty between Israel and Jordan, water was the last and most contentious point of negotiation.

Under which conditions the joint management of water resources can also contribute to peace can so far only be assumed, since there is a lack of case studies addressing this specific question, and there are no established methods of evaluation. In the first three regions discussed above (Central America, SADC and the Nile basin), there are certainly indications that water cooperation has a positive impact on peacebuilding. The common aspects in these three cases provide some clues about conducive conditions:

a) In all three regions, the most violent phase of the conflicts between the countries had ended. This allowed cooperation to take place at the highest political level. SADC and the Trifinio Plan provide an overarching political framework, which benefits transboundary cooperation arrangements (Scheumann and Neubert 2005).

b) Cooperation was also institutionalised in all three regions. In the Trifinio region, the institutional framework is provided by the Trilateral Committee; in the SADC, the Protocol on Shared Watercourse Systems envisages the setting up of a River Basin Commission; while along the Nile there is the Nile Basin Initiative and transitional intergovernmental institutions (Nile Council of Ministers and Nile Technical Advisory Committee) to facilitate cooperation among the Nile riparians. These will continue to exist until a final agreement is concluded.

c) In the Trifinio region as well as the Nile basin, the participation of stakeholders has been institutionalised. Even in the SADC region, mechanisms for stakeholder participation are a typical component of River Basin Organisations (RBO), which have been set up in many such regions. This promotes cooperation at the official political level and at the level of civil society, which in turn lends legitimacy to the decisions taken. Water cooperation in all three cases will continue to explicitly drive the economic development of the entire region.

4.2 Transforming environmental cooperation into political cooperation

One of the obvious shortcomings of environmental peacemaking has been its inability to transform environmental cooperation into broader forms of political cooperation and initiate a social and political dialogue going beyond environmental aspects. Here there are fundamental differences between transboundary water and nature conservation projects. The conflict element or peacebuilding impact is to some extent explicitly articulated in transboundary water protection as well as in the relevant research and implementation of concrete projects, while transboundary cooperation in nature conservation tends to focus far more on preserving biodiversity and natural landscapes. Nevertheless, cooperation in nature conservation is at times specifically employed as a mechanism for peacebuilding or for creating political stability in conflict or crisis regions. The establishment of "Peace Parks" creates ecological buffer zones between conflicting parties, which transcend political borders. In 2001 there were 169 nature conservation areas in close proximity to border regions in 113 countries worldwide. Over 10% of the world's conservation areas are transboundary. Some such examples are the disputed border region of Cordillera Condor between Peru and Ecuador, the demilitarised zone between North and South Korea and the now large number of transboundary nature conservation areas in Southern Africa (see below). Such areas can play a significant role in defusing political tensions and promoting regional security, sustainable natural resource management and economic

development in the associated ecoregions. The protection and preservation of cultural diversity is equally promoted. Over and above nature conservation, they facilitate a step-by-step reconciliation between conflicting parties on a range of issues that are generally less politicised and therefore less contentious.

In political practice however, cooperation in nature conservation hits a ceiling when environmental policy is confronted with foreign and security policy considerations that it cannot address. The scope for cooperation in nature conservation to serve as a mechanism for peacebuilding is clearly still limited at this point. Cooperation in nature conservation has a key role to play in the context of a comprehensive regional strategy for building and consolidating peace that also includes the promotion of cultural, economic and social development. The existing nature conservation conventions have so far not included any conflict prevention norms. Mechanisms and procedures for dispute settlement and obligations of reporting, consultation and providing information are only isolated efforts in this direction. In practice moreover, nature conservation projects are by no means free of conflict. The opposing interests of different user groups can also impede political reconciliation. Ecological and social interests may even clash when it comes to the utilization of natural spaces, e.g. when movement corridors for elephants conflict with those of the local human population.

Environmental conservation projects in general and Peace Parks in particular may not be able to end existing (border) conflicts. However, they do promote communication and cooperation between conflicting parties - the first stage in a peace process - by providing an institutionalised platform for communication and mechanisms for collecting and processing data. This results in a phased rapprochement between formerly hostile states or social groups. In the long term, such projects help improve the living conditions of local communities and promote social, economic and political development as a corollary of efforts towards environmental conservation. The sections below present an overview of cases, which illustrate the (institutional) conditions required and the extent to which water cooperation and environmental conservation can serve as mechanisms for peacebuilding and facilitate political cooperation over and above the actual environmental issues.

4.2.1 Water cooperation in Central Asia

The majority of transboundary water protection projects in the five Central Asian republics were motivated by conflict prevention and peace considerations. The exact number of projects is not known, but it is likely to be far in excess of 500. The projects cover the entire spectrum of cooperative arrangements and projects, ranging from data collection to jointly monitoring trends in environmental quality to working on bilateral and multilateral transboundary environmental agreements. These diverse initiatives are supported by further projects which are targeted at strengthening human rights, promoting democratic structures in society, combating corruption, reducing poverty and promoting economic development. So far there has been no systematic study of the impact of these initiatives and projects on crises and peace processes, as well as of their linkages with transboundary environmental projects.

4.2.2 Water cooperation in the Middle East

The "Good Water Makes Good Neighbours" project of Friends of the Earth Middle East, initiated in 2001, is held up as an example of successful transboundary environmental cooperation in a conflict region. The project provides for dialogue and cooperation on water issues between neighbouring communities in Israel, Jordan and the Palestinian territories. The governments in these countries have however not pursued the project, which is stuck at the level of technical cooperation and communication among local communities.

4.2.3 Cooperation in nature conservation in the Southern Caucasus

The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the Office for Forest, Nature and Landscape of the Principality of Liechtenstein have been funding a pilot project for sustainable development in the mountain regions of the Caucasus since 2002. The project is being jointly implemented by the Regional Environmental Centres (REC) in Moscow and Tbilisi. The project objective is to transfer the experiences of mountain partnerships under the Alps Convention to the states of the southern Caucasus region (Azerbaijan, Armenia, Georgia, the Russian Federation). Models for sustainable development in mountain regions will be developed and implemented in close cooperation with the communities in eight mountain villages. The focus will be on resource conservation and sustainable energy generation. The mountain partnerships have the long-term objective of improving the living conditions of large sections of the mountain population and combating the causes of migration.

The project comprises an analysis of the local situation, creation of a database on the status and development of the Caucasus mountain region, organisation of the first training modules on sustainable development and the initiation of close cooperation with local administrative units and later with the national governments. The communities will work together with external consultants to draw up individual development plans in the selected villages. In future, small-scale project programmes will follow. Apart from this, a cross-border community network (alliance of mountain villages) was established between the four participating countries. National Steering Committees were set up to support the projects and these also include representatives from the regional administrative bodies. Further participation by the governments of the four countries was deliberately not pursued so as not to jeopardize cooperation at the local level in view of the continuing conflict between Armenia and Azerbaijan. The project is intended to create alternative development and income generation opportunities for marginalised groups in the mountain regions. This will also help combat the rising recruitment by terrorist organisations from the Northern Caucasus. The actual dimensions of the regional conflict have however, not been explicitly articulated in the project. The initial results will be presented at an international donor conference next year so as to ensure funding for concrete development programme proposals. An assessment of the impacts on conflict and peacebuilding is not envisaged, although the conflict was one of the factors in the project rationale. A 2002 report published by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) entitled "Opportunities for transnational and transboundary cooperation in the Caucasus" highlights the existing potential for conflict in the region.

4.2.4 Cooperation in nature conservation in Southern Africa

The Peace Parks in southern Africa have proved largely successful as compared to similar ventures elsewhere because they go beyond nature conservation and are well embedded in the context of regional economic and political integration (South African Development Community). Also, they are jointly managed by a majority of the participating governments on the basis of multilateral agreements within the framework of the Peace Park Foundation. The total of nine transboundary protected areas, which are funded and coordinated by the Peace Park Foundation, are of high significance primarily from a nature conservation perspective. In terms of ecosystem management, they facilitate an integrated management of large protected areas and the chief migratory species. Regional compliance with the relevant international treaty obligations (Biodiversity Convention, Ramsar Convention) is thus also facilitated. In future, transboundary nature conservation areas will also play an important role in creating alternative sources of income, thereby helping to reduce poverty in these largely rural and infrastructurally weak regions.

4.2.5 Cooperation in nature conservation in the Altai Mountains

The transboundary nature conservation project in the Altai Mountains is a further example of the relevance of nature conservation as a mechanism for conflict prevention. The peacebuilding impact of this project has been repeatedly highlighted by the German side (Federal Agency for Nature Conservation and the Heinrich Böll Foundation). However, since the project has not yet reached the implementation phase, it is too early to assess its role in fostering peace. In 2002, a GTZ-led feasibility study was conducted for the German Federal Agency for Nature Conservation and the Federal Ministry for Economic Cooperation and Development (BMZ) on the setting up of a transboundary biosphere reserve in the Altai Mountains, in the border region between China, Russia, Mongolia and Kazakhstan. The study, submitted in 2004, proceeds on the assumption that the establishment of a transboundary biosphere reserve could help to resolve the socio-economic and ecological problems in the region. The basic information for the feasibility study was provided by the individual countries, which appointed coordinators at the national level and set up national working groups to prepare the respective country reports. Two international workshops were held in Ulan Bator and Almaty for the project partners to share lessons learned and discuss cross-border issues. The political and economic dynamics of the region, however, are not reflected in the approach and neither is a conflict analysis envisaged. Yet, the region is characterised by serious disputes over territorial claims and specific ongoing border conflicts, weak governance structures, rural exodus, migration, suppression and resource degradation.

4.2.6 Environmental cooperation as a part of foreign and security policy

The Environmental and Security Initiative (ENVSEC), established in 2002, clearly goes beyond considering cooperation restricted to just water or nature conservation. The Initiative, which was jointly established by the Organization for Security and Co-operation in Europe (OSCE), the United Nations Environment Programme (UNEP) and the United Nations Development Programme (UNDP) in autumn 2002, is an innovative attempt to test the significance of ecological peacebuilding in practice and to bring issues of

transboundary environmental cooperation to bear on foreign and security policy agendas. The objective of the joint initiative is to identify, analyse and develop concrete proposals for solutions in cases where environmental issues threaten to escalate into conflicts or where they offer opportunities for cooperative synergies between communities, countries or regions. The Initiative is remarkable, not just because it pursues an ecological approach to peace but because it is also the first time these three organisations dealing with the inter-related issues of security, environment and development are officially collaborating. ENVSEC not only benefits greatly from the varied and complementary expertise within the three organisations, but also from their networks of field representatives in the regions in which the Initiative is active, i.e. South Eastern Europe, Central Asia and the countries of the Southern Caucasus.

A rough division of responsibilities was agreed on within the Initiative. The OSCE has the lead role in project development and with regard to political issues. UNEP contributes its expertise in assessment, visual communication and presentation, while UNDP is responsible for institutional capacity building and project implementation. Naturally, there are a number of challenges to be overcome. The three partner organisations have very different organisational and work cultures, which are not geared towards formal cooperation with other international organisations and joint project management.

ENVSEC differs from other initiatives in that it also integrates political and social stakeholders outside the narrow environmental policy field, thus playing a significant role in helping transform ecological interests and successful negotiations into political initiatives. The stakeholders are integrated through the participation, mainly of foreign-policy actors, in joint or participatory methods of environmental assessment, which include the foreign and security policy impacts. This helps overcome one of the key shortcomings of environmental cooperation between conflicting parties by making it a subject of political negotiation at the highest levels.

4.2.7 Synthesis

The above examples demonstrate the fundamental complexities that arise when transboundary environmental projects are linked with conflict resolution and peace objectives. These issues tend to be handled only implicitly as part of the projects. The conflict dimension provides political legitimacy for the initiatives at the programme level or within the framework of sector or country strategies. The projects can, however, play only a limited role in terms of peacebuilding if the results do not make it onto the agendas of governments and international or regional institutions. Moreover, the peacebuilding impact of transboundary environmental projects can be assessed only if methods of impact estimation were applied at the project design stage and during subsequent implementation.

Cooperative mechanisms in the field of water and nature conservation appear to be successful in building stable cooperative structures when they are part of a wider political and economic process of integration and when norms are established and implemented through bilateral and multilateral agreements. The Peace Park Foundation in Southern Africa and the institutionalisation within the SADC framework have demonstrated the importance of creating an enabling environment. The ENVSEC Initiative has been able to

illustrate how issues of transboundary environmental cooperation in conflict regions can be placed on the agenda of foreign and security policy institutions.

5 Institutional Requirements and Constraints

This section addresses the specific forms of negotiation, the time point of intervention and issue linkages that facilitate or hinder progress towards peace through environmental cooperation. It proceeds on the assumption that while transboundary environmental cooperation is by and large deliberately initiated as technical cooperation in a 'non politicised' sphere, an effective impact on peace can only occur once there is a transition from technical cooperation to political cooperation. It is debatable, of course, to what extent environmental cooperation between countries can be treated as an exclusively technical issue. Even data sharing and joint environmental monitoring are political (and politically sensitive) ventures.

The above examples from Central America, the SADC region and the Nile basin allow the inference that water cooperation initiatives can play a greater role in promoting dialogue, trust and cooperation in particular once the violent phase of a conflict has ended. Within the water cooperation framework, a preventive approach should be selected as far as possible. If unilateral initiatives for water resource development end up creating international tensions, it becomes even more difficult to engender cooperative behaviour. Once distrust between riparian countries grows, their relations tend to be dominated by threats and confrontations, as has been observed between India and Pakistan or between Canada and the United States. The resolution of water conflicts can then take years or even decades. The Indus Waters Treaty took ten years to negotiate, the Ganges Treaty needed 30 years, while negotiations over the Jordan Treaty required all of 40 years (Wolf/Kramer/Carius/Dabelko 2005). Even in cases where distrust and tensions do not escalate into open conflict, they can hinder regional development e.g. by undermining joint projects or blocking infrastructure projects that are useful for both sides.

One of the most important water sources for Israelis and Palestinians, the mountain aquifer, is under threat due to contamination by untreated wastewater. The continuing conflict has hindered donor initiatives for building treatment plants in Palestine and is setting the stage for a vicious circle in which ground water pollution will aggravate the water scarcity in the region, which in turn will further escalate the Israel-Palestine conflict (Wolf/Kramer/Carius/Dabelko 2005).

Several studies have been devoted to examining the conditions and negotiation approaches that promote cooperative attitudes in managing transboundary waters. It remains unclear, however, which conditions actually contribute to elevating cooperation in the water sector to a broader political level. One aspect that merits further study is the choice of negotiation issues (Wolf 2004). In the examples discussed above, water cooperation was placed in the context of the economic development of the region. This agenda appears to offer a promising approach for achieving more broad-based cooperation. It does not focus on sharing the existing water resources but on the most equitable distribution of the economic benefits. It also enables water concerns to be linked with other political issues. For instance in the Trifinio region, simplified customs regulations were implemented along with the plan for developing the water resources of

the transboundary Lempa river. These measures are expected to give a boost to the local economy (Lopez 2004). In negotiations between Turkey and Syria over the Euphrates, the support Syria was providing to the PKK was taken up directly during discussions on the issue of water allocation quantities (MacQuarrie 2004).

On the other hand, bringing in too many diverse issues can also complicate agreement. If the conflicting parties show little willingness to negotiate, it is more advisable to first achieve agreement in one area. In such cases, limiting negotiations to less critical, technical issues can provide an entry point. The context, i.e. the specific problem and the stakeholders, to a large extent determines the selection of appropriate issues, which will consequently vary on a case-to-case basis. Nevertheless, it is important to identify favourable issue linkages by examining some case studies.

5.1 Institutions for promoting water cooperation

Capable institutions, which can balance conflicting interests and regulate water scarcity, are key to achieving durable cooperation in the management of transboundary water resources. Several requirements have been formulated for such institutions. These offer some indications of the institutional conditions conducive to promoting cooperation at a broader level (Wolf/Kramer/Carius/Dabelko 2005):

- Cooperative institutions should be backed by treaties detailing the rights and obligations of all riparian countries, other informal agreements or cooperative arrangements.
- The institutions must possess sufficient human, technical and financial resources to develop comprehensive water use plans and enforce their implementation.
- The institutions must integrate responsibility for sub-sectors of water management, ranging from agriculture, fisheries, water supply and regional development to tourism, transport and environmental protection.
- The activities of newly created institutions should not conflict with traditional water use practices.

Cooperative water management can anticipate conflicts and resolve simmering disputes, provided of course that all interest groups are involved in the decision-making process and receive adequate resources (information, trained staff and financial support) to enable them to participate as equal partners. Cooperative water management can reduce the potential for conflict by:

- Providing a forum for joint negotiations and thereby ensuring that all existing - and potentially conflicting - interests are taken into account during the decision-making process.
- Accommodating different perspectives and interests, thereby widening the base of available management options and facilitating win-win solutions.
- Building mutual trust through cooperation and joint fact finding; de-escalating user conflicts through knowledge sharing about resource availability. Also, building a foundation for developing fairer and more equitable alternative use patterns.

- Leading to decisions that have a high probability of being accepted by all interest groups, even when no consensus is achieved (Kramer 2004; Scheumann und Neubert 2005).

At the local level, traditional community-based mechanisms for water and/or conflict management can prove very useful as these are based on local conditions and are more acceptable to the communities. Examples are the Chaffa committee, a traditional water management institution of the Boran people in the Horn of Africa, or the Arvari parliament in the Indian state of Rajasthan, an informal decision-making and dispute resolution body based on the traditional practices of the people living in the Arvari watershed.

At the international level, river basin commissions with representatives from all riparian countries cooperate successfully in managing shared water resources (Kramer 2004). An example of this kind of cooperation is OKACOM (Permanent Okavango River Basin Water Commission), founded in 1994, in which Angola, Namibia and Botswana cooperate in the management of the river basin. Assessments of cooperative activities have shown that the negotiation climate within OKACOM is evidently perceived to be constructive. Among the various country commissioners there appears to be a growing realization that cooperation offers greater advantages for all sides than when the water is merely shared, or worse, if conflict and confrontations were to take place (Wolf et al. 1999). Yet there are still some unresolved problems. The Commission faces difficulties in generating adequate financial resources and in developing a political agenda for active cooperation. This is one of the reasons why OKACOM recently encouraged non-governmental organisations (NGOs) and civil society to assume a more active role than is the norm in other international river basins. It also acknowledged that the governments of the three countries are not in a position to implement effective management strategies for the river basin on their own (Conca/Carius/Dabelko 2005).

5.2 Forms of participation

Broad-based stakeholder participation is generally considered to be an important prerequisite for transferring the positive impacts of water cooperation to a wider societal level. Indeed, one of the key success factors of the Trifinio Plan was that it provided a platform for high level political dialogue *and* for cooperation at the local level. It also facilitated the participation of local stakeholder groups (Lopez 2004). Getting all interest groups to cooperate, however, is not possible in all river basins; in some cases it is not even advisable. When a conflict is too advanced and the interests are very disparate, there is a risk that the conflicting parties will be unable to reach a consensus or may even reject participation in cooperative management. In such cases, joint education and training projects or a joint study of the issues can help build consensus and trust. This is a first step, which paves the way for cooperative decision-making.

In some highly controversial cases, for instance the Nile basin, it has been possible to achieve a certain degree of success in river basin management by departing from the broad-based participation rule and employing 'elite models'. This concrete approach involved first building a consensus between high-ranking representatives of the negotiating parties before tackling the problem at a broader level. The successful and sustainable implementation of decisions arrived at during such high level negotiations

requires the effective involvement of the population in the implementation process during the further course of negotiations (Kramer 2004).

In the Nile basin, the Nile Basin Discourse (www.nilebasindiscourse.org) was established at the initiative of civil society groups. The objective was to establish forums for civil society dialogue amongst the stakeholders in the member countries of the Nile Basin Initiative. The governments of the ten Nile states, however, were not favourably inclined towards the initiative (Kameri-Mbote 2004: 37). Currently it is unclear whether the initiative is a success or not because the envisaged dialogue forum has so far only been set up in Kenya. A case study will be undertaken to identify the lessons learned. The GTZ Transwater Programme is also supporting the Nile Basin Initiative with a sub-project. The programme seeks to develop a shared understanding of the requirements emerging for national water policies and to initiate the required reform processes. In a further project, the GTZ is promoting stakeholder participation in the Limpopo basin (GTZ 2005). The lessons learned here may be useful to understanding how to promote the participatory approach in the Nile basin and augment the positive impacts for peacebuilding within a broader framework.

Finally, a special element of participation is the inclusion of an arbitration body. Conflict management measures involving a neutral third party, for instance through mediation or arbitration, have proved effective, especially in acute conflict situations. A prominent example is the successful mediation by the World Bank in negotiations between Pakistan and India over the distribution of the Indus waters. However, even groups that are connected to the conflicting parties in some way, such as village elders, women or water experts, have been able to initiate successful cooperation in instances where the disputing parties could not find any common ground. The Wajir Peace Group in Kenya, which is led by women, for instance, has helped reduce the number of violent clashes between shepherds fighting over access to water (Kramer 2004).

6 Methods of Impact Assessment

The relatively scant knowledge about the concrete role and impacts of environmental cooperation as a mechanism for conflict transformation and peacebuilding can be traced essentially to six causes.

1. The complex nature of cooperative transboundary environmental projects generally necessitates persuading conflicting parties to negotiate without explicitly articulating - and thereby politicising - the conflict or peacebuilding dimension. This also means that at best, soft or very general objectives are defined for such projects, thereby making it difficult to conduct ex post evaluations. Both these aspects complicate any concrete evaluation of the potential impacts on peace processes. To be considered successful, it is sufficient for transboundary projects to achieve the obvious objective of enhancing environmental quality or initiating a dialogue between states or groups focused on the collection or sharing of environmental data.
2. Past attempts to transfer existing early warning systems to environmental conflicts have failed primarily on methodological grounds. Environmental aspects are seldom the obvious and primary factors in a conflict. Weak governance and the lack of

administrative capacities for environmental management lead non-governmental stakeholders to assume an active role in natural resource management in crisis and conflict regions. This in turn complicates evaluation, which is based on specific criteria for state action.

3. Successful transboundary environmental projects presuppose mediation and agreement over relatively complex interests. Thus, the hypothetical and oft-postulated win-win situations frequently either do not exist at all or are very difficult to achieve. They are, moreover, subject to conflicting national and sector policy interests as well as sovereignty claims. Benefit sharing agreements often fail in practice because the economic benefits for individual countries are either not apparent or cannot be made apparent during negotiations. At any rate, they are difficult to market politically.
4. An evaluation of peacebuilding impacts is not even envisaged within the relevant initiatives or in their planning and implementation. The lack or deliberate avoidance of such evaluations is usually politically motivated. Neither the implementing organisations nor the supporting governments nor the conflicting parties themselves are interested in highlighting the relevance of such projects in conflicts or peace processes. Equally they have no appropriate mandate for conflict management or a formal role in developing such processes. Even the ENVSEC initiative clearly demonstrated this.
5. Neither resource degradation nor user conflicts are the sole and primary causes of violent conflicts. An analysis of the extent to which resource and environmental components contributed to the genesis of the conflict would therefore be inadequate. Vice versa, a comprehensive analysis of the conflict (motives, interests, development, intensity etc.) would require complex methods of impact assessment, which are either not available or have not yet been tested.
6. Cooperative environmental projects tend to be initiated at times of low conflict intensity. Consequently, the impact of individual projects on preventing violent conflicts is difficult to assess. This is a problem common to the political legitimization of preventive action, given the largely reactive response by international diplomacy to averting violent conflict. The genocides in Sudan and Rwanda have clearly demonstrated that the international community at best intervenes belatedly in violent conflicts, owing to overriding particularistic interests and the current incapacity of the United Nations system to take early action.

The international donor community has adopted two approaches since the beginning of this decade to highlight these constraints. One is to employ peace and conflict impact assessments (PCIA) (Paffenholz/Reychler 2005; Kievelitz 2003; Bush 2003; Hoffman (without year)) in individual projects and programmes in the fields of sustainable development and environmental conservation. The second is to mainstream conflict-sensitive criteria in the planning of development projects and programmes (BMZ 2005).

However, experiences with PCIA in the environment sector so far are inadequate, not transparent enough and have not been subjected to systematic analysis. PCIA's also vary greatly in relation to what is being assessed. They are either geared towards conflict regions and countries or towards concrete projects (as ex-post evaluations). The Swiss

Agency for Development and Cooperation (SDC) commissioned some PCIA studies in conflict regions (Paffenholz and Dittli 2002; Zupan et al. 2002; Bisig 2002), which also examined sustainable development and resource conservation as sources of conflict. There has, however, been no systematic analysis of these studies. Moreover, the studies did not provide any significant insights into resource conservation and environmental degradation as sources of conflict. The PCIA evaluations were incorporated in the SDC guidelines for conflict-sensitive programme management in international cooperation at the start of 2005 (SDC 2005).

Although attention has been drawn to environmentally-relevant violent conflicts by OECD/DAC and the ENVSEC Initiative, there are no projects, other than that of SDC, which explicitly integrate impact assessment methodologies in the corresponding conflict analyses.

In the "Cross-sectoral Strategy for Crisis Prevention, Conflict Management and Peacebuilding in German Development Cooperation" (BMZ 2005), the BMZ has laid down binding guidelines and recommendations for planning, implementing and steering German official development assistance. In contrast to ex-post evaluations of projects and programmes during which a violent conflict took place, the cross-sectoral strategy envisages this being mainstreamed into the planning and conceptualization of individual programmes and measures. The conflict classification for bilateral cooperation projects in conflict-affected, post-conflict or conflict-prone countries has been introduced in order to operationalise the concept. This is to ensure that future projects are designed in a conflict-sensitive manner and unintended negative impacts are avoided. This innovative mechanism has yet to be tested in practice, however, and is currently being further operationalised for practical development cooperation by the GTZ.

It is doubtful however, to what extent the available methods of impact assessment are truly suitable for assessing the impact of individual measures or more comprehensive programmes on the peace process in a crisis situation or crisis region. In the first place, the direct impacts of peace promoting activities and conflict management in such cases are difficult to measure (and back up with measurable indicators). Secondly, the relevant impacts tend to occur after a time lag. Thirdly, peacebuilding processes do not proceed in a linear manner. They are characterized by short-term successes with frequent setbacks. Measures that do not prove successful in terms of conflict management and peacebuilding may very well play a valuable long-term and indirect role in a peace process. Fourthly, the interests of participating stakeholder and target groups tend to shift during the course of individual development projects. Fifthly, the evaluation methods available so far focus largely on assessing compliance with project objectives, i.e. the short-term, direct impacts of projects. They are thus not geared towards assessing the more broad-based impacts within the societal or even regional and supra-regional context (Fischer 2005). There is also an additional, methodological problem arising from the very nature of cooperative environmental projects, since environmental degradation and resource scarcity are at best indirect factors in a conflict among several other factors. The evaluation of outcomes is also problematic because the intended peacebuilding impacts are merely defined as "soft" criteria within the projects.

7 Conclusions and Recommendations

7.1 Conclusions

The present paper has outlined the scope and constraints of the theory that environmental cooperation generally makes a contribution towards conflict prevention and peacebuilding. While the potential peacebuilding impact may often meet the political objectives of lending legitimacy to and helping initiate such projects, it is not on its own a sufficient justification for transboundary environmental projects. The initiatives and related analyses of cooperative mechanisms in transboundary water protection way outnumber those in nature conservation projects. Different models for specific types of cooperation have been developed and applied in different conflict situations. But there is thus limited scope to draw general conclusions.

What is common to the initiatives discussed above is that conflict prevention and peacebuilding impacts cannot be directly inferred from the projects and programmes. The example of transboundary cooperation in nature conservation in Southern Africa showed that the institutionalisation of norms and rules through bilateral and multilateral arrangements is a key prerequisite if such projects are to sustainably overcome the problems inherent in such ventures. Political integration and peace processes can subsequently be set in motion through backing at a higher political level. The examples of transboundary water cooperation in Southern Africa (SADC) and in Central America (Trifinio Plan) highlighted the significance of an enabling political framework and stable multilateral institutions. Water cooperation evolves into broader forms of political cooperation if it is integrated in an economic and political institutional context. The ENVSEC Initiative, covering several projects, illustrates that environmental institutions alone are not in a position to push the transition from environmental cooperation to wider political cooperation. Participation by foreign and security policy actors, e.g. in mechanisms for collecting data and defining objectives, is a key requirement if transboundary environmental projects are to make the transition out of the environmental niche.

Methods for assessing the impacts of transboundary environmental projects on conflict transformation and peacebuilding have so far not been successfully tested. It is also unlikely that they will be able to provide any significant insights given their methodological limitations. Conversely, one should not infer from this that environmental cooperation in water and nature conservation does not justify the effort and expense involved, and that it has no impact on conflict prevention and peace processes. Given the methodological issues on the one hand and the wealth of experiences from cooperative projects in conflict regions on the other, the most meaningful way forward is to conduct systematic research on the impacts, which is closely linked to the conceptualization and implementation of such projects.

7.2 Recommendations

The first step should be a systematic analysis of previous case studies and actual cooperation projects in water and nature conservation based on a standard analysis grid. The absence of a comparative research project, analogous to existing studies on

environmental conflicts (which were not concerned with environmental peacebuilding), has already been mentioned in the introduction. The German Government's "Action Plan for Civilian Crisis Prevention" has also highlighted the significance of transboundary environmental cooperation. In view of the above, a research project should be initiated so as to fill this obvious research gap and to make the findings available to stakeholders at the policy level.

This would necessitate doing away with the prevalent compartmentalisation into divisions and disciplines (environmental policy, foreign policy, development policy, trade policy etc.), both in political decision-making and in research. As of now, there are no interdisciplinary studies in this area (Carius and Dabelko 2004). Yet issues of environmental peacebuilding cannot be meaningfully tackled by either environmentalists or peace and conflict scholars in isolation. Similarly at the policy level, political decision-makers must overcome a department-centric focus and move towards integration.

Based on experience rooted in action research, Martina Fischer has proposed an ongoing formative evaluation centred on process-orientation, participation and participant learning (Fischer 2005; Feil/Müller/Carius 2005: 70ff.), which takes into account the overall societal context of peacebuilding. This form of participatory and action-oriented research results not only in an objective acquisition of knowledge about social contexts, but at the same time facilitates an improvement in social conditions by linking project implementation with parallel research.

Given the priority areas and priority countries of German development cooperation, parallel research projects, particularly for transboundary cooperation in water protection, can play a useful role. The German Development Institute (GDI) recently presented reports on water cooperation in Southern Africa (executive summary, Scheumann and Neubert 2005). These provide a potential starting point for a study of this sort, which could further address the issue of peacebuilding (peripherally taken up in the GDI reports) based on the past successes of German development cooperation in this region.

The conflict classification mechanism, which was introduced in the BMZ cross-sectoral strategy published in 2005, provided an important tool for integrating methods of assessing conflict relevance and conflict and peacebuilding impacts in development programmes and projects. Experts and research institutes can participate in operationalising and testing the still to be defined criteria for concrete project and programme evaluation. The experts could potentially participate in fact-finding missions, programme planning, progress monitoring and reviews, and initial evaluations in the field of conflict prevention. It would thus appear appropriate to integrate environmental and resource aspects in conflict analysis.

The implementing organisations of German development cooperation possess wide and varied experience in projects relating to environmental protection and natural resource conservation. Indeed, various forms of conflict management and mediation play a role in sector projects for rural development and sustainable natural resource management. However, this knowledge is often not transparent and accessible even within the implementing organizations, and represents a (hitherto) untapped potential for conflict prevention and peacebuilding. Some significant initiatives in this regard are joint seminars

for senior management from the implementing organisations, the participation of experts in the fields of peace and conflict research in the development of country and regional strategies for conflict regions, and the involvement of environmental experts in the formulation of relevant sector strategies in the areas of conflict prevention and peacebuilding.

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