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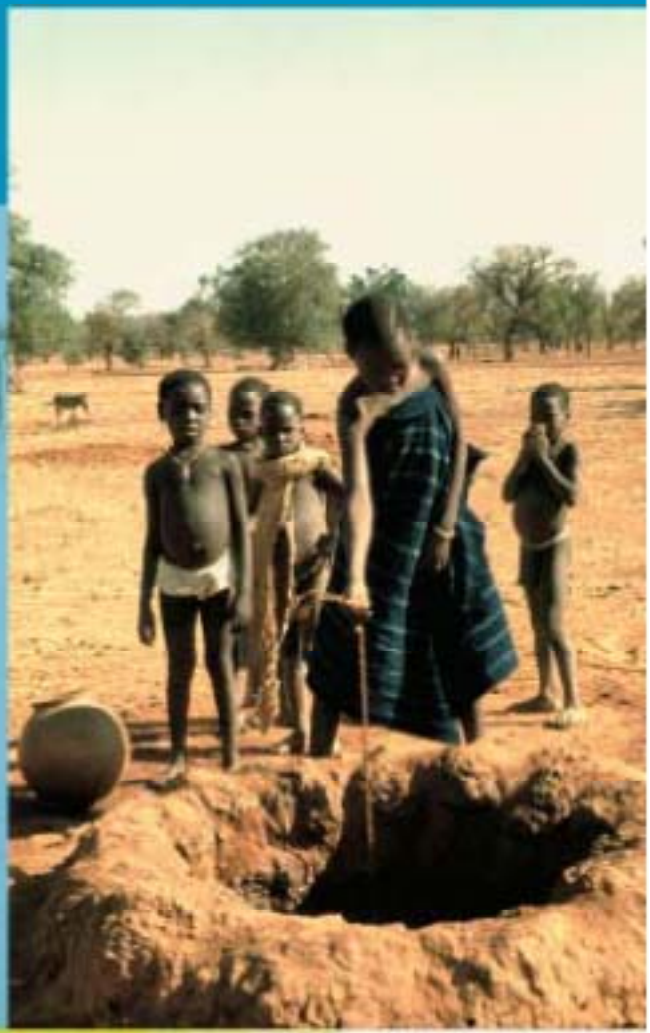
Water Resource Scarcity and Conflict: Review of Applicable Indicators and Systems of Reference

▶ Pal Tamas



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WATER RESOURCE SCARCITY AND CONFLICT: REVIEW OF APPLICABLE INDICATORS AND SYSTEMS OF REFERENCE

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In considering water conflicts we should also note the importance of intra-state water tensions, which are related to inter-state conflicts. Water conflicts are related to a wide range of other socio-political tensions, such as border disputes or mega-projects such as dams and reservoirs, environmental problems, or political identity. A range of instruments may be deployed, including: lobbying, open and hidden negotiations, violence, network building, recourse to international organizations, and the actions of elites.

The abundance or scarcity of resources decides the direction a society will take in development. Imbalances, not only of scarcity but of abundance, may distort environmental and socioeconomic policies, leading to social friction, though newer approaches to social problems do not see scarcity as leading necessarily to conflict. Problems may be mitigated by factors such as leadership and social capital, but it is not easy to identify the factors which lead to a spiral of degradation. Other studies indicate how conflict may arise through the efforts of elites to capture scarce resources, or through the debilitating effect on innovation that scarcity entails. Countries heavily dependent on exports of primary commodities are more liable to conflict. The "honey pot" of abundant resources may be a focus for greed that determines civil conflict.

In rentier states, which receive substantial rents from external sources, it is claimed that fewer people tend to be involved in the production of wealth, and more in its utilization or distribution. Democratic development and economic growth are both likely to be slowed down. To what extent can this model be applied also to water distribution?

The article considers conflict resolution capabilities, in particular the institutional dimensions, comparing the capacities in developed and developing countries. While most of the items presented in the article are tools for large-scale change, the relevance of incremental advances is also considered. Early warning models to predict the likelihood of conflict are compared, as are risk-assessment models such as that of the Minorities at Risk Project, and conflict prevention trajectories to identify "preventors" of conflict.

1. INTER- AND INTRA-STATE WATER CONFLICTS

In considering international conflicts involving major rivers and reservoirs, we should also note the importance of intra-state water conflicts (which are often related to those that are inter-state conflicts).

Basic research questions used for building further indicators in this area could be for example:

a. What conflict histories can be identified in the given sample and what is their dynamic?
b. Who are the major actors involved in the conflicts and what motivates their behavior?
c. What clusters of factors and external moments could explain the origin and evolution of confrontations in given countries, not only around water but also in other areas?

   According to our basic understanding, the culture of general conflict management in the given country, and especially in local elites, will also be crucial for handling and processing strategies of water issues.
d. Which policy options with regard to prevention, mitigation and early warning can be derived from the case studies and indicator systems?

The different phases of conflict used for further analysis will be tension, escalation, de-escalation, and settlement. The factors identified in the different periods will be the triggers (events that actually set off a conflict, but are not sufficient to explain it), pivotal factors (generating the conflict in a certain way and needing to be addressed in order to change its outcome) and mobilizing or aggregating factors (using the Frerks classification (1998)).

In most cases of water conflicts, the "water issue" is closely connected to a whole gamut of other socio-political conflicts. In other words, a water conflict as a natural resource control issue or a redistribution conflict around water is hardly ever isolated from a sort of framing encased by other conflicts. In some cases – in fact quite often – the water conflict is manifested just as another type of social issue; in others the form of the water conflicts would be determined by the "covering" conflicts.

Water conflicts usually occur in situations of scarcity, are generally accompanied by other types of conflicts, and may in part be simply "dressed" in other forms of confrontation. In some cases they can be understood as pure redistribution conflicts. In other cases they also relate to border disputes or to mega-projects such as dams and reservoirs. Often they incorporate conservation issues that frame the emerging problems into environmental policy considerations. Finally, in some cases natural scarcity conflict is bound into broader identity conflicts of the region. Actors playing definite roles in those conflicts should be identified as mobilized elites, state-centered institutions, foreign political interests, the ambitions of multinational corporations, green movements, and the local communities.

The instruments they use in processing the conflict should be grouped as follows: lobbying, open and hidden negotiations, violent actions, civil network building, involvement of international organizations, media presentation (modeling), and special actions of professional elite groups or associations.

The types of conflicts covering or framing the water issue could be structured as shown in the following table:

Conflicts/ Actors	Mobilized elite	State-centered	Foreign political interests	Multi-national corporation	Green movements	Local communities
Border disputes	XXX	XXX	XX?	X	X	X
Identity conflicts	XXX	X	X	X	X	XX
Redistribution conflict	X	XX	XXX	XX	XX	XXX
Mega-projects	X	XXX	X	XXX	XXX	X
Conservation issues		X	X	X	XXX	X

"X" means here low and "XXX" very high relevance of the given actor, or instrument to the given "presentational" form of conflict.

The instrument matrix is presented in the next table:

Conflict/ Instruments	Lobbying	Open negotiation	Violent actions	Civil networks	Internat. Organ. Involvement	Media presentation	Profess. Elite's actions
Border disputes	–	X	XX	X	XXX	XX	X?
Identity conflicts	–	X?	XXX	XXX	X	XXX	–
Redistribution	XXX	XX	XX?	X	XX	X	XX
Mega projects	XX	X	X	XXX	XXX	X	XXX
Conservation issues	XX	XX	X	X	XX	X	X

2. NATURAL RESOURCE SCARCITY CONFLICTS

Various approaches could be used for measuring the conflict potential of a water scarcity issue.

De Soysa (2000) examines whether civil conflict is related to the scarcity of natural resources, by utilizing a precise measure of the availability of natural capital among a large sample of countries. Homer-Dixon (1999) links environmental scarcity and conflict to the debilitating effects of resource scarcity on the production of societal "ingenuity," which is in turn required to overcome poverty-related debility. De Soysa (2000) tests the direct effects of the availability of resources on conflict and possible indirect effects through the "ingenuity gap" evidenced by economic growth and human and institutional development.

The scarcity perspective suggests that the link between environmental pressure and conflict is sometimes mediated in part by the ability of societies to achieve economic growth and adapt to changing economic conditions and pressures. Economists who suggest that resource abundance lowers the incentive to innovate contrast this view with strong arguments that it can lead to economic stagnation. Since an economy's success is determined by its ability to move out of subsistence production and into manufacturing, resource abundance apparently produces little pressure on governments and economic agents to make the right investments in dynamic sectors, leading to lower economic performance through what is commonly referred to as "Dutch disease."

According to the findings of a new WIDER study (1998), resource abundance can be blamed for distorting overall policy on the environment, leading to less investment, lower accumulation of human capital, persistent income inequality, an unsustainable path of resource usage, lower levels of social capital, and "factional" political patterns that erode institutional capital. In fact, what these findings suggest is that resource abundance is a cause of what Homer-Dixon terms "social friction." The issue of environmental pressure as a source of conflict revolves largely around resource degradation and scarcity. Since internal armed conflicts are mainly found among the poorest countries in the international system, the issues of environmental degradation, scarcity of resources, and poverty are thought to be parts of a process that has trapped poor countries in a vicious cycle (de Soysa, 2000).

Newer approaches to population pressure, scarcity, and conflict do not see conflict as an inevitable result of scarcity. These analyses see other factors mediating environmental degradation, scarcity, and conflict. These intervening variables include cultural conceptions of the environment; the nature and degree of social cleavages; the availability of social capital; the nature of institutions; and the skills and ideological propensities of leadership and groups. However, as Kahl (1998, p. 6) has lamented; "analysts have thus far failed to identify" which of these myriad intervening variables are associated with conditions that lead to environmental degradation. Gledistsch (1998) and Barbier and Homer-Dixon's (1996) efforts to link environmental scarcity and conflict through the inability of resource-poor countries to adapt to economic conditions and pressures offer, however, a clearly testable hypothesis linking resource scarcity to conflict.

The neo-Malthusian argument suggests that resource scarcity acts as a barrier against innovation and thus as an obstacle to the creation of societal conditions conducive to prosperity and peace. It provides a comprehensive review of the "state of the art" in the environment and conflict literature, and suggests that, the complex relationship between environmental pressures and conflict notwithstanding, "models must be built gradually, with limited modules being put to the test first."

The Environmental Change and Acute Conflicts Project (ECACP) has argued forcefully that environmental degradation, which has led to scarcities in natural resources, is fuelling civil conflicts within the poorest states in the international system. The "Toronto Group" and the Swiss Peace Foundation's program on environmental conflicts (ENCOP) have spearheaded a vast research program on "eco-violence." According to the scarcity and conflict perspective, conflict is generated by the scarcity of natural resources in two primary ways. The first mechanism is that resource scarcity drives elite to "capture" resources, marginalizing powerless groups in the process.

The second way in which scarcity supposedly causes conflict is through its debilitating effect on economic and social innovation – what Homer-Dixon terms the "ingenuity gap" (1999: pp. 5, 7). The link between environmental pressure and conflict then is mediated in part by the ability of societies to achieve such collective goals as economic growth and innovation, thereby adapting to changing economic conditions and societal pressures generated by resource scarcity. To deal with scarcity, a society needs ingenuity – but the very scarcities that make social ingenuity necessary act as constraints on innovation.

Systematic large studies of the effects of environmental degradation and scarcity on conflict are extremely sparse (see Esty et al., 1998; Gleditsch, 1998). Hauge and Ellingsen (1998), in perhaps the most ambitious test of the effects of environmental variables on conflict, find moderate support for the position that the acute degradation of forest resources, soil, and the per capita availability of fresh water predict the incidence of internal armed conflict. They conclude, however, that economic and social variables tend to have a much larger effect on conflict and overshadow the effects of the environmental variables (de Soysa, 2000).

Hauge and Ellingsen (1998) use the annual change in forest cover and the change in the quality of soil to measure "supply-induced scarcity." Under such conditions, it is difficult to judge whether capricious policies create grievance and conflict, or whether environmental degradation and scarcity cause conflict, or whether indeed it is dysfunctional policies and processes that result in degradation, scarcity, and also conflict. As Dessler(1999), a reviewer of Homer-Dixon (1999) has also pointed out recently:

> He (Homer-Dixon) undermines his case by building political factors into his definition of environmental scarcity. More robust conclusions concerning the effects of environmental trends on violent conflict [are made] possible . . . only by clearly disentangling the physical sources of such conflict from its political, economic, and social determinants.
>
> (Dessler, 1999)

Moreover, arguments that are based on scarcity as a source of conflict have based their cases on the dependent variable, leading to issues of selection bias (de Soysa, 2000). Collier (2000) has argued that the discourse within conflict zones is heavily dominated by stories of grievance. The discourse of perceived scarcity, whether of physical resources or political and social resources, is a huge part of the language of conflict. In such situations, even the keenest researcher is liable to miss underlying "causes" and overemphasize the by-products of the conflict.

The work of Collier and associates (Collier, 2000; Collier and Hoeffler, 1999) represents some of the first systematic studies of conflict from a microeconomic perspective that integrate natural resources as a factor in conflict. They find strong empirical support for the proposition that natural resources motivate rapacious behavior, thereby causing civil wars.

This proposition is based on the premise that the availability of natural resources (especially if they are exported as primary commodities) spawns violent conflict because the resources can be looted by rebel groups, and are thus an incentive to civil war. Mineral resources especially are easily captured. In short, resources are seen to act as a "honey pot" that provides incentives for profit-seeking groups to engage in violent actions. In order to get beyond the discourse of conflict, Collier (2000) gauges which of the proxies of greed and grievance predict conflict best. He finds that the economic variables that proxy greed-motivated rebellion outperform the proxies for grievance-motivated rebellion.

A country more than one-fourth dependent on primary commodity exports emerges as four times more likely to be engaged in a conflict than one that is not. However, even a slight increase in the level of education can decrease the risk of conflict. As Collier puts it: "a country with large natural resources, many young men and little education is very much more at risk of conflict than one with opposite characteristics" (Collier, 2000, p. 5). This study suggests that natural resource "abundance" leads to conflict through a "honey pot" effect.

Collier and associates use the proportion of primary goods exported to model the motivation for greed-driven conflict.

Proponents of both sides of the debate have assumed that resource dependence signifies abundance or scarcity. Further investigations of water conflict issues, propositions on scarcity, abundance, innovation, and development, or the competing arguments on the scarcity and abundance of natural resources and the production of societal ingenuity need to be outlined in detail.

Homer-Dixon (1999) and Barbier and Homer-Dixon (1996) have little to say about human capital, which is the latent supply of ingenuity available to a society, but suggest that resource scarcity prevents the generation of ingenuity, and so of endogenous technical change. Scarcity perpetuates the ingenuity gap (Homer-Dixon,

1999). The argument is that (where other important factors are constant), it is because of resource scarcity that poor countries are prevented from achieving endogenous technical change.

Sachs and Warner (1995) provide strong empirical evidence in support of the counter-argument that suggests that resource abundance leads to lower economic growth. They argue that endogenous technical change does not occur in resource-rich countries because they become dependent on natural resources and fail to innovate. However, this occurs not because of scarcity, as Barbier and Homer-Dixon would have it, but because the availability of a resource affects the incentives for allocating capital, labor, and innovative energies to other sectors, such as manufacturing.

The recent findings of the WIDER study show clearly the differing impacts of resource abundance on lower performance in terms of growth and socioeconomic development. As Auty (1998) points out, there has been little consensus on measures of natural capital abundance. But various measures, such as the share of primary goods exported, the intensity of manufacturing, land availability, and the extent of the available natural resource rent, have generally tended to support the proposition that resource-rich countries are prone to growth collapses. Structural change in a resource-rich country causes the tradable sector to shrink vis-à-vis the nontrading sector (which includes protected manufacturing) in a manner that is not sustainable (de Soysa, 2000). This adverse trend in the production structure is associated with policies to wall off the economy and create discretionary rents behind protective barriers and results in the cumulative misallocation of resources. The build-up of productive capital and skills is slower than in a successful resource-deficient economy.

Overall, the inherently slower and less egalitarian growth trajectory of the resource-rich countries is intensified and the end result is usually a growth collapse. The collapse causes all forms of capital, including institutional, social, and natural forms, to run down. Part of the explanation for the superior performance of the resource-deficient countries is that their spartan endowment of natural capital acts as a constraint on government failure by placing a premium on the need to nurture scarce resources and to achieve an efficient allocation of capital. As suggested earlier, what is needed to test this proposition properly is a measure of the absolute availability of natural capital defined in terms of renewables and non-renewables.

In general, for further work we should address the following questions:

a. Does the scarcity of natural resources affect civil conflict directly, controlling for other salient factors?
b. What are the differences between renewables and non-renewables as they affect conflict, growth, and human development?
c. Is the availability of natural resources beneficial or detrimental to social cooperation, economic prosperity, and to conditions conducive to generating societal ingenuity among the poorest groups or countries?

De Soysa (2000) tested the opposing positions of those who argue that natural resource abundance provides incentive for conflict and those who argue that scarcity drives conflict. His work tested the indirect effects of renewable resource scarcity on conflict by gauging its influence on economic growth and human and institutional development. He finds that the abundance of subsoil assets has a direct, positive effect on intra-state armed conflict, regardless of where these resources are located, which suggests that the "honey pot" of abundant resources is a major determinant of civil conflict. A high level of natural capital among poor countries, measured for his purposes as abundance of land, pasture, agricultural and timber assets, and non-timber forest assets (renewables), is also more likely to produce lower economic and social progress, which supports the proposition that abundance has significant indirect effects on conflict. Special investigations should place water in this logic of

argumentation. Future research should concentrate on how and why natural resource abundance, or the "honey pot" effect of resource wealth, interacts with "Dutch disease" effects to create the conditions that spawn internal armed violence. There is no evidence to support the various positions on resource scarcity as a source of eco-violence, nor for the argument which suggests that the scarcity of natural resources somehow hinders the production of human ingenuity.

3. WATER AND THE "RENTIER STATE"

Economists used the term "rentier state" in the early twentieth century to refer to the European states that extended loans to non-European governments. Mahdavy (1970, p. 428) is widely credited with giving the term its current meaning: a state that receives substantial rents from "foreign individuals, concerns, or governments." Beblawi (1987, p. 51) later refined this definition, suggesting that a rentier state is one where "only a few are engaged in the generation of this rent (wealth), the majority being only involved in the distribution or utilization of it."

There are two main variants of the rentier state claim (Ross, 2000). One is that rentier states are less likely to become democratic; the other is that they do a poor job of promoting economic development. Barro's (1999) model of democracy uses a dummy variable for states that derive at least two-thirds of their export income from oil. He explains that:

> The idea here is that the income generated from natural resources such as oil may create less pressure for democratization than income associated with the accumulation of human and physical capital.
>
> (Barro, 1999)

In this article we aim to think about water, especially in situations of extreme scarcity, in the same manner.

Yet there are different types of questions about this claim that have not been carefully investigated. First is the question of the argument's validity: is it true? The rentier state hypothesis is difficult to test in the Middle East because the region offers little variation in the dependent variable: virtually all of the region's governments have been highly authoritarian since gaining independence.

There are also questions that are not addressed about the claim's generality: if oil does hurt democracy, does this only occur in the Middle East or also in other regions? Is the effect of oil on regime types linear, or is there a threshold effect – as some observers assume?

A different question of generality concerns whether these anti-democratic effects are restricted to oil, or whether they extend to other types of commodities. Is it true, as Karl (1997, p. 14) argues, that:

> different sources of revenues from commodities have distinctive impacts of the scale of the state, its degree of centralization and decentralization, the coherence of public bureaucracies, the types or organizations adopted, the patterns of policymaking, and even its symbolic images. This "commodity state" underlines different regimes and governments, and . . . can homogenize much of their behavior.

The question is complicated by the fact the oil states are more dependent on oil than the mineral states are on minerals. Minerals may inhibit democracy at the same per-unit rate as oil, but the net effect may be much smaller since they rarely play a major role in a country's economy. What should we think about water in this respect in the future?

And of course, there are questions about causality. For over two decades, Middle East scholars have thought carefully about the causal mechanisms that appear to tie oil wealth to the persistence of authoritarian rule. There is no consensus on what these causal links are, although three arguments are common.

The most popular argument might be called the "taxation effect." It suggests that when governments derive sufficient revenues from the sale of oil, they are likely to tax their populations more lightly, or not at all; in the absence of taxation, the public becomes less likely to demand accountability from – and representation in – its government.

A second causal mechanism might be called the "spending effect": oil wealth may lead to greater spending on patronage, which in turn dampens latent pressures for more democratic institutions. The third argument is that oil revenues provide governments with the ability to prevent the formation of social groups that are independent of the state and hence have reason to demand political rights (Ross, 2000).

Although scholars usually cite one of these three causal mechanisms, there are additional ways that resource wealth could lead to authoritarian rule. First, resource-based development may influence inequality levels, which in turn could affect the likelihood of a transition to democracy. Yet Luciani argues that inequality is politically irrelevant in rentier states, because:

> The solution of maneuvering for personal advantage within the existing set-up is always superior to seeking an alliance with others in similar conditions.
>
> (Luciani, 1987, p. 74)

Is that true for water as a natural resource? Further investigations may show the transferability (or the limits) of past oil models for future water resource control behavioral patterns.

4. INDICATORS OF INCREMENTAL CHANGE

This part of the article considers three main questions:

1. Is there a systematic relationship between "conflict resolution capability" and the regulatory performance of institutions?
2. What is the nature of that "conflict resolution capability"? And in particular, what are its institutional dimensions and how important are they?
3. Are there any significant differences between water regulatory agencies in industrialized and industrializing countries in their productivity performance, the nature of their "conflict resolution capabilities," and the relationship between the two?

In answering these questions this section explores the link between "conflict resolution capabilities" (causal variables) and performance improvement of water policy makers (end result variable) by examining how "conflict solving capabilities" are actualized into the generation of technological/organizational changes (intermediate variables) leading to regulatory performance improvement.

The "conflict resolution capacity" embodies the resources required to manage and realize the generation of new water regulatory visions. These resources are accumulated and embodied in the skills, knowledge, and experience of professional groups and organizational systems. There are very few studies that have systematically analyzed the link between conflict resolution capacity and performance improvement. This may be due to major difficulties encountered in securing the

necessary data for proper tools for water conflict solving. And here most of the literature has focused on conflict solving capabilities embodied in people rather than of organizational systems within which the individuals act. Tremblay (1998), Kurosawa (1991) and Beer (1981) also make a distinction between "latency" on one side, and productivity and performance in regards to "potentiality," "capability," and actuality."

A second body of literature has focused on change at the concrete conflict level as being a source of improvement. Much of the research has concentrated on those micro-issues. On the one hand, there is the impact on "radical" or "breakthrough" changes (trigger effects, accelerators) in acute conflicts. On the other hand, researchers advocate that the strategic link between cooperation of the partners and regulatory performance can be explained by measuring capacity and latency.

At the same time, most efforts and strategies in solving potential water conflicts have not focused on radical changes. They are instead oriented towards a) improving the quality and features of existing solutions, and b) improving the "decision-processing" capacities of the actors in the given environments. The majority of approaches presented in this article represent tools for achieving major changes in violent conflicts, but for a while we should concentrate on tools that can effect smaller or incremental changes in "normal" conflicts.

Despite some classical studies on innovation (for example, Enos, 1992) there has been a dearth of empirical evidence showing that the cumulative effect of small changes often overcomes that of radical ones. It is only recently (Tremblay, 1998, p. 4) that the importance of such changes has gained ground in the literature on total quality management and continuous improvement. This body of literature on learning curves and types of learning such as "learning-by-doing" could also be used in the water conflict environment. But there are major difficulties in measuring these relatively minor changes of conflicts. How does one measure simply, in practical ways, the incremental change in badly algorithmised situations? The same literature also emphasizes the way experts influence and change the original processing style of the conflict, but again how can it be measured in a practical manner? Basically, factual and quantitative measurement of performance and cooperation is frequently problematic.

We suggest using three types of micro-indicators for comparative water conflict management investigations in "incremental cases":

1. Regulatory performance indicators.
2. Change generation patterns indicators.
3. Conflict-solving capacity indicators:
    a. human resource competencies
    b. institutional commitment to change.

There is a great deal of confusion in handling regulatory performance indicators about defining performance and productivity in natural resource management. This can be seen, for example, in the use of ROI measurements of productivity from the industrial organization theory or the "constraint analysis" techniques (Merrifield, 1994).

As for research design, four elements should be acknowledged:

- Analysis that focuses on the change processes in formal ("technical"?) decision-making and its underlying set of intra-institutional capabilities. Measures that assess attributes of financial resource utilization in the basin management (profitability-budget measures) should perhaps be here rejected. Even if they are available they do not indicate differences in terms of conflict-solving capabilities.
- It would be important to develop the study longitudinally to make it sensitive to performance trends.

- The performance trend indicators must be capable of presenting an institutional or case level data set.
- Finally, quality improvement cannot be measured comparatively. The socio-political dimension is partly embedded in subjective indicators.

Following Tremblay's (1998) approach and transferring it to water conflict management situations, two types of conflict solving capability indicators will be used: human capital and change-generating efforts. An assessment of these follows.

The human resources competencies should be assessed via formal qualifications. Two ratios could be easily used: first, the number of degree holders formally involved in the conflict-solving/total economic potential of the conflict, and second, the disciplinary composition of degree holders/total staff (app.) potentially involved in the conflict-solving process.

For measuring the change-generating efforts (for example, in one river basin regulatory performance) a scale with four variables – scale, intensity, role, and responsibility – can be used.

- The *scale variable* should be assessed by the ratio of the number of individuals in the participating agencies and institutions committed to cooperation to the total number of actors (individuals) involved in the crisis process.
- The *intensity variable* indicates the frequency at which change-generating (cooperative) activities are performed.
- The type of activities performed defines the *role variable*.
- Finally, the *responsibility variable* assesses the amount of responsibility felt by each of the members of the participating institution to commit themselves to cooperation (to change the ongoing confrontation).

The proposed investigation should examine:

- The link between the growing readiness to cooperate and the conflict-solving capabilities embodied in the human resources' "latent" capabilities, and also embodied institutionally.
- The link between the level of cooperation and the technical (legislative, information-processing, and so on) changes in conflict management.
- The link between the capacities embodied in human resources and the change-generating efforts embodied in the participating institutions.
- The link between the problem-solving capabilities embodied in human resources and the change toward cooperation.
- The link between the capabilities embodied in institutional/organizational settings and the change toward better cooperation.

5. WATER AND POVERTY

There are important links between natural resources management and poverty. Many poor people, particularly in developing areas, rely on those resources for their livelihood, and are very vulnerable to deterioration in the resource. This is especially important in relation to drinking water conflicts. Government policies to conserve water and other natural resources can be explained in some situations by a concern for the poor, in addition to more commonly cited aims of ensuring sustainability. But on the other hand, poverty contributes to the degradation of natural resources (in some cases of water quality/quantity). In some regions local inhabitants suffering conditions of desperate poverty have no choice other than to continue their exploitation of natural resources (Heady, 1998). This link between poverty and

resource degradation is not as well established as the link from resource degradation to poverty.

The most natural way to reduce resource degradation is to limit activities that make use of the given resource (water reservoir), but a rigid or mechanical policy of this kind could harm the groups relying on the resource, and for whose benefit the policy is (partly) designed. There are however ways, though maybe only in some cases, to reduce the conflict between poverty alleviation and resource improvement (Heady, 1998):

- The resource's quality can be improved without reductions in resource use, by minimizing other contributory causes of resource degradation.
- The resource use can be reduced without reducing the local standard of living, by offering alternative occupations for some local groups, or even the community.
- Restructuring the resource management can enable local groups to enjoy more benefit from it, but with a smaller destructive effect.
- Some of the costs related to resource utilization should be carried by those who are not so poor and are usually more flexible in their behavioral changes. Some general costs of resource utilization could be redirected to them.

It is not possible to draw generalizable conclusions about how policies should be designed to overcome this conflict, because of the variety of specific situations and the nature of resources available.

6. EARLY WARNING MODELS

The models available for investigation differ not only in their understanding of conflict, but also in the methodology used. For discussing the academic efforts at early warning studies, the Gurr and Harff (1994) typology seems to be quite useful. It focuses on the methodology for realizable warnings. According to the typology the various theoretical efforts should be categorized as follows (Goor and Verstegen, 1999):

- *Correlation models* are focused on structural indicators and causality (causal models of conditions: Minorities at Risk Project, PIOOM, State Failure Project, and so on).
- *Sequential models* are used for shorter-term early warnings and are suggested for studying what sequences in these processes have most commonly occurred in the past. Using the so-called "accelerators" (see details below), they visualize the time sensitivity. Using the accelerators, sequences of events that can trigger a conflict are identified. Thus, in assessing likelihood they suggest which particular events will not lead to conflict.
- *Conjunctual models* try to specify alternative scenarios, or their sequences, based on combinations of conditions. The aim is not to understand the ways in which conflicts escalate, but to focus on its intensification.
- *Response models* do not focus on the exploratory–predictive side of the investigations; they aim to anticipate alternative responses. Cause–effect relationships need to be identified mainly from a policy perspective. The model tries to identify the points in the conflict process at which strategic interventions will make a difference to the outcome.

The CPAF (conflict and policy assessment from work), the so-called eclectic (integrated?) approach, provides insight into issues of intervention, paying attention

not to the question of how to warn about conflict, but how to avert it (Rothberg, 1996, p. 267). In this sense CPAF intensifies the search for recurrent pattern forming.

Naturally, predictions (warnings?) of this type can "drown" different kinds of signals, or be pushed to one side by signs of impeding conflict elsewhere. Finally, sometimes they may become "deadened," meaning they are not forwarded to the real decision-makers (Adelman, 1998).

The CPAF developed by the Dutch "Clingendael" Group tries to integrate the objective, the mission, and the tools of the end-user. The policy instrument mix and the concrete strengths and weaknesses of the actors are different. Again, general models should be understood only as part of the investigation, and with structure monitoring a concrete conflict trend-line should be identified. Then the available policy toolkit is assessed and applied to strengthen the positive line, or redress the negative one.

7. CONFLICT-PROCESSING CAPABILITIES

The risk assessment model of Gurr (2001) aims at identifying the groups at greatest risk of victimization in (future) episodes of ethnic conflicts. The model behind the Minorities at Risk Project (MRP) uses the concepts of grievances, mobilization, rebellion, and repression. Statistical analysis in the project shows a positive correlation between mobilization and grievances and group coherence, and and between repression and grievances and rebellion. The indicators developed for the assessment of the potential risks of conflict focus on group incentives, capacity, and opportunities for collective action. The categories of risks used here are divided into three classes: Highest Risk (high incentives together with high capacities or opportunities), Medium-High Risk (high to middling incentives and capacities or opportunities) and Medium Risk groups.

On the basis of these indicators a Risk Index can be developed. The original version of the MRP describes only the structural conditions of the conflict, but a newer version (Gurr and Harff, 1998) adds accelerators (indicators of dynamics) and trigger events to the model for early warning purposes. Accelerators of a rebellion might be, for example, elite instability or insecurity, increases in external or internal symbolic or political support, demand escalation (changes in group rhetoric), or the occurrence of violent opposition to the given regime by neighboring countries. The indicators are identified on different levels (usually structural factors are fixed at group level, and accelerators at the state level).

Another large-scale project commissioned by the CIA Directorate of Intelligence – using a somewhat similar approach – was developed with Gurr and the involvement of an important interdisciplinary group of academic experts and data management specialists. It deals with conflicts related to state failure. The task of the group was to identify critical thresholds in forecasting or at least signaling a high risk of political crisis in the given countries in advance (Esty, 1997, 1998). Here four types of state-failure-related crisis are identified: revolutionary wars, ethnic wars, politicized crises, and adverse/disruptive regime transitions. For the period of 1953–94, 113 cases of state failure were identified, using 31 selected major indicators from the original 617 measures. The best model describing the system crises operates with three major variables: openness to international trade, infant mortality, and democracy. The project was eventually used as a basic system for a more detailed analysis of the vulnerability of given political regimes without a prospective force, identifying prospective elements of change. From a methodological point of view, this is perhaps even more interesting for our purposes than detailed cases. The particular state failure approach shows the validity of using indicator categories instead of well-defined indicators.

One of the best-known techniques used for early warning system developments is the Dutch PIOOM package originally developed for monitoring human rights violations. The original model could be described as something between traditional fact-finding and forecasting, using more than 500 indicators. The first part of the indicator system focused on background information (historical, political, legal, and socioeconomic data), developing options for further risk assessment. The second part detects local capacities for potential actions (demands, rights, benefits, disadvantages). For our purposes it is probably important to note that the forecasting capacity of such an approach, related to particular periods and places, is not very applicable in terms of universal water conflict indicators as a holistic system.

Harff's efforts in modeling – joining the Gurr school – were focused on accelerators of the conflict process. While the structural factors quite often build the bases for universal indications, the accelerators are mainly context-specific, Harff argues. The expectation is that, a few months prior to a major conflict, accelerator events are likely to increase, and at the same time decelerators (indicators of cooperative activity) will decline in their relative frequency. Harff proposes daily monitoring of high-risk situations, but this (with the exception of total confrontation cases) is not very applicable to water conflicts. Studying the methodological outcomes it can be seen that; the quantitative approach developed here (event system, scaling in approximate order of severity, and so on) could be transformed easily into a more qualitative interpretation. In a given concrete situation, investigating the concrete water conflict's qualitative and quantitative approaches could quite often be mutually substituted or interchanged.

Another early warning approach developed by Harvard researchers (Bond and Rothkin, 1995) is the PANDA Protocol (Protocol for the Assessment of Non-violent Direct Action), which identifies conflict situations before their violent phase. Its central point is mass political conflict, for example, popular mobilization for non-institutionalized collective action. The model tries to measure the conflict-carrying capacity of the system and the conflict civility of civil actors. In other words, first identify the dominant rules guiding the behavior of the participating actors in the conflicts: are they acting outside the established rules or not? And if they are beyond those limits, then when and where? The indicators used for the identification of mass political conflict should be grouped along the outcome dimension (violence or non-violence), the contentiousness dimension (routine or direct action), and the coerciveness dimension (costs, sanctions). Contentiousness refers to the disruptiveness of actions outside the routine resolution procedures, and coerciveness is defined as the severity of negative sanctions or costs. The conflict-carrying capacity indicator used in PANDA is the proportion of contentious action to all action, multiplied by the proportion of violent action to all direct action, subtracted from unity to facilitate interpretation (see the Clingendael approach).

Among the results of non-academic or pragmatic early warning programs commissioned for study by international organizations, the efforts of the ORCI (United Nations Office for Research and Collection of Information), the UN DHA, the Fund for Peace project, and the FEWER indicator system should be mentioned. They could be used as useful elements for future water conflict indication.

8. CONFLICT PREVENTION TRAJECTORIES

In order to assess the effectiveness of conflict prevention measures, we need to establish criteria to gauge when conflicts have been prevented, and whether prevention can be attributed to particular policy measures. However, relating policy measures or institutional attributes to the non-occurrence of events poses a theoretical and methodological challenge. Conflict prevention has moved from

advocacy to fashion in relatively few years. The institutionalization of conflict prevention policy is very recent, and conflicts in which violence has been averted for a period may break out in violence after an apparent success for a policy has been claimed (Miall, 2001). The absence of violence in a particular time period clearly cannot predict future non-occurrence. Moreover, the question of attribution of a particular (non-)effect to a cause in a particular case raises the same difficulties and requirements for judgment as historical studies of the origins of single wars. These problems have led to a number of studies of the methodological problems of assessing conflict prevention (Leatherman et al., 1999; Lund, 2000). It is helpful to think about the causes of conflict by arranging them into underlying (or background) causes, enabling factors, and immediate causes or triggers. Nye (1993), for example, distinguishes between systemic causes, proximate causes, and immediate triggers. In the First World War the "systemic causes" included the Westphalian state system and the structure of alliances. The proximate causes included the definition of Balkan policies by the Serb, Austrian, and German governments. The immediate causes or triggers included the assassination of Franz Ferdinand.

Although the background conditions are a necessary condition for the outbreak of violence, in isolation no one particular background condition is essential, since one background condition can substitute for another.

Any particular violent conflict is caused by a unique combination of immediate, proximate, and underlying causes. But if a trigger cause is removed while the underlying and proximate causes remain the same, wars are still likely to occur, albeit with different triggers.

Corresponding to these causes of conflicts, we can identify preventors at different levels. "Preventors" are factors that mitigate or prevent a potential event. They differ from the mere absence of a cause. In fire prevention, for example, it is generally not possible entirely to eliminate inflammable materials or flames, even though these are clearly a necessary condition of a fire. Instead the approach is to provide fire extinguishers and build fire resistant features (Miall, 2001).

In the case of conflicts, there are "active" factors that are conducive to non-violent outcomes. The clearest finding of the literature on the causes of violent conflicts, namely the proposition that wars do not take place between democratic dyads, has identified democracy as a preventor of interstate war (Gleditsch and Hegre, 1997; Russett, 1993).

This suggests the possibility of a new perspective on the causes of conflict. The emergence of violence in a society or international system is governed by both causes and preventors of conflicts, which are present together in most systems. Where the causes of war strongly outweigh the preventors, the system is war-prone. Where the preventors strongly outweigh the causes, the system is war-averse.

But what factors prevent an international system or society from becoming war-prone?

Preventors work at different levels, as do causes. At the deepest level, there are structural factors that tend to prevent violent conflict from arising. The level of development, the nature of the polity, the quality of institutions, the level of economic activity and distribution of economic opportunities, and the international "neighborhood" are examples of such factors. They are factors that influence the likelihood of grievances arising in the first place, and the capacity to manage conflict within political channels. At the intermediate level, states, groups, neighboring states, and international organizations can select policies that help to sustain cooperation, such as policies of pluralism, elite accommodation, autonomy, power-sharing, recognition and access on the part of states, or conditionality attached to membership of international organizations (Gurr, 1993, p. 306). At the more immediate level, negotiations over specific issues, international diplomatic interventions, and early warnings may have a preventive effect in the short term (Zartman, 2001).

Interventions by civil networks, mediation attempts by "insider partials," and training workshops are tools of immediate interventions.

Conflict prevention policy has been particularly concerned, understandably, with developing short-term responses to emergencies. The main emphasis in policy circles is on "light" prevention, largely by external actors. The longer-term issue of how "deep" or "structural prevention" can be fostered, both within and also across societies, has also become a matter of policy concern. The proposed approach concentrates on "deep" or "structural" preventors of water conflicts, and in particular how we can identify whether they are effective in natural resource related conflicts.

Conflict management theorists have identified a number of features of policies that should prevent violent ethnic conflict at the intermediate level. For example, Horowitz (1985) suggests that political systems offering electoral incentives for multi-interest coalitions are effective, while Lipjhart (1977) favors stabilization through elite agreements. Azar (1990) suggests that governance, development, civil politics, fulfillment of basic needs, and freedom from external dependence are critical variables in preventing identity issues escalating into protracted social conflicts. Peck (1998) identifies "well-functioning local, state, regional, and international systems of governance, which are responsive to human needs" as a vital element of prevention.

More recently, "good governance" has been identified as a structural preventor of internal conflict. Indeed, the promotion of good governance is seen as a critical element in promoting conflict prevention and conflict management. Is "good governance" a deep preventor of water conflicts?

There may be a risk of circularity in the network. Political stability as an indicator of governance is closely related to the absence of violent conflict. At the same time, bad governance is not only a cause but also an outcome of violent conflict, and societies with protracted conflict are often "failed states." The rankings of countries by governance indicators may be associated with other "preventors" (for example, development). These broad-brush relationships, such as that between governance and conflict, give insufficient information about what attributes are most important as preventors. A still more fine-grained approach based either on early warning indicators or political (and sometimes counter-factual) analysis of individual cases is required to establish the effects of "light" or operational prevention measures (Miall, 2001).

Table 1. Violent conflict analysis

LIST OF TOPICS COVERED BY THE INDICATOR QUESTIONS	
A. Structural conflict factors and potential conflict	
1. Determining disparities in society in terms of economics, ecology, and political power:	• What social groups can be identified in a society? • What impact does the socio-cultural structure of society have on existing economic, ecological, and political disparities?
2. Determining the social competence for dealing with conflict peacefully:	• How are social conflicts perceived and communicated? • Are state institutions willing and able to negotiate social conflicts and bring about solutions? • Do they have sufficient legitimacy to carry out this function?
3. International and regional conflict factors:	• Is there a danger that armed disputes will be imported from neighboring counties?
B. Medium or short-term changes in structural framework conditions	
4. Future changes in structural framework conditions and perceived threats born out of historical experiences:	• What political strategies by international actors will lead to comprehensive political or economic reform in the country to be analyzed? • What are the forecasts for changes in the general ecological situation?
5. Recording social clichés:	• What violent disputes have taken place in the past between the social groups? • What role did various groups play in founding the nation, or in any earlier wars? • How have relations between the various social groups developed in the recent past?
C. Political behavior in accordance with main driving forces behind dynamics of escalation	
6. Evaluating the social climate:	• In what fora is social life played out and who normally has access to these fora? • What is the traditional pattern of organization for the rural population?
7. Changes in manner in which conflict is played out:	• What images of "the enemy" exist? What style of political debate is used in the media? • What strategies do various parties in the conflict use to strengthen their powers of persuasion of their political influence?

Source: BMZ conflict assessment questionnaire, Paris, 1998.

Table 2. Pattern recognition as conflict prognostication model

Conflict Early Warning Project	
Author:	P. Brecke, Georgia Institute of Technology
Methodology	Historic analogy. Make grid pictures for each country each day and run through pattern recognition software (ANN). Time-varying probability assessment to anticipate when there is escalation. Conflict description patterns for each type of conflict.
Aim	Anticipation: Identify patterns of particular combinations of values of indicators that have consistently appeared before outbreak of historical cases of conflict. If patterns are found, they serve as templates against which current country situations are compared.
Conflict-preventive focus	Operational (direct)
Type of conflict	Generic
Timing of warning	Shorter-term early warning
Approach	Quantitative

Source: Clingendael (2001).

Table 3. Block from the PIOM human rights violation conflict prognostication model

Stages of conflict	*Characteristic variables*	*Signals*
1. Stable social System	High degree of political stability and regime legitimacy	• Functioning democracy, with minority rights protection • Regular peaceful transitions of power between government and opposition (no coups d'etat) • Independent judiciary • Free press • Social-revolutionary and ethno-secessionist groups lack mass support • No abrupt deterioration of political condition due to (para-)military activities • No abrupt deterioration in economic condition
2. Political tension situation	Growing levels of systemic frustration and increasing social and political cleavages along sectarian identities	• New political parties try to mobilize people around polarizing political or sectarian issues • Elections heatedly contested • Court rules seen as politically charged • Freedom of the press under stress as a result of growing polarization of opinion within society

		• Non-violent protests and violence against property and national symbols by radicals • Little economic growth
3. Serious dispute stage	Erosion of political legitimacy of the national government and rising acceptance of sectarian politics	• Increasing use of inflammatory rhetoric by political elites and sectarian leaders • Increasing use of courts for political purposes by government • Sporadic violence against individual political figures and/or members of ideological or ethnic groups • Economy under stress
4.Lower intensity conflict	Open hostility and armed conflict among factional groups; regime repression and insurgency	• Increase of power among non-democratic forces • Rule of law seriously impaired • Freedom of the press seriously impaired as a result of sanctions by militant groups and emergency measures of (military) regime • State of emergency; security forces violate human rights systematically • Capital flight, disinvestments
5.High intensity conflict	Open welfare among rival groups	• Breakdown of civil society; disintegration of central government • Multiple claims of political sovereignty • Rule of law abolished; political justice • Media as propaganda instruments of regime • Open warfare among rival groups with military taking sides or splitting apart along group lines • Military or emergency rule • Black market economy dominant, falling production • Deteriorating health situation, decreasing life expectancy • Growing dependence on food imports

Source: *The Stages of Conflict and their Signals* (Jongman, 1994, pp. 69–70)

Table 4. Early warning conflict indicators for water conflicts

1. Regional indicators	• Shifting alliances • Tensions of one state transferred across borders • Division of water resources across borders • Resurgence of ethnic relations between borders • "Tit for tat" strategies (interdependent rebel support) • Changes in the power "balance" • Splitting in international alliances • External support for opposition groups (or perception of) • Historical rivalries • Exploitation of divisions/tensions (political/media propaganda) • Inability to maintain territorial control • Deterioration of relations between state and external actors • Rivalries over control of region's resources (not only water) • Demographic changes • Uncertain stance of major external powers/stakeholders on key issues
2. State sovereignty and monopoly of power	• Inability, on the part of the state, to deliver security and stability, and/or public perception of this inability • Systemic instability • Unconsolidated power • Territorial disputes • Increase in number of private security firms • Recent history of or ongoing violent territorial conflict in state or region • Uncertain distribution of powers between the center or Federal government and "autonomous" regions • Weak sense of citizenship • Non-state actors taking traditional state roles • State or region in the process of political or economic transition • Recurring violence in border areas • Low border security • No law enforcement capability of the state • Illegitimate government and subsequent regional revolts • Unresolved border questions • Incoherent government behavior
3. Strategic indicators	• Threats of attacks • Distribution of arms to civilians • Presence of foreign troops and/or mercenaries • Coups ousting governments • Increase in numbers in rebel groups • Popular support to rebel groups • No side being strong enough to win a decisive victory • High crime rate

4. Fragmentation and behavior of main actors	• Political splitting • Political and personal rivalry (disputes among key personalities) • Public accusation of conspiracies • Mutual mistrust • Dissent within and about administration • Governing elite has no coherent policy on key conflict-generating issues • Factionalism within opposition
5. Ideological factors	• Ethnic and/or national polarization (at all levels: from families up to political parties) • Media used for national propaganda • Introduction of national symbols and/or myths referring to past-oriented collective identity • Clashes between two or more communities • Conflicting ideological systems (norms and values)
6. Political opposition	• Dissatisfaction with the management of state affairs • Dysfunctional judiciary or lack of respect for judicial system (due to corruption, maladministration, politicization etc.) • Increased tension between regime supporters and opposition groups • Dissatisfaction with the management of state affairs • Radicalization of traditional institutions • Historical rivalries • Institutionalized persecution, or perception of (economic, political, etc.) • Increase in size and cohesion of opposition groups • Radicalization of opposition • Uncertain period of political transition
7. Social and geographical spread of conflict	• Civilian movements across border • Restriction of movement into and out of the state • Unresolved territorial conflicts • Collectivization of elite conflict • Integration of new actors (that is, expansion of conflict) • Rebels using existing resistance structures
8. Violence	• Increase in organized crime • Authorities sanction arming of civilians in border areas • Revenge and anticipated revenge • Fear of increasing violence (increasing need for self defense)
9. Exclusion	• Exploitation of divisions/tensions (political/media propaganda) • Political under-representation (minority groups, regions) • Growing economic disparity perceived to be related to resources

	• Recent history of minority group forced migration/expulsion • Lack of clear legislation governing distribution of resources • Conflict or competition over water and land distribution, scarcity of arable and, competing claims etc. • Artificial population movement (resettled groups demanding return) • Demographic changes • Obstructive border regime (contributing to economic recession) • Non-inclusion of all actors in negotiations/agreement • Exclusion of important actors in mediation forums • Unequal power distribution among group controlling water • Lack of charismatic leaders for the moderate majority • Dissatisfaction and/or grievance among population about unequal distribution
10. Economic Factors	• Increasing poverty/economic disparity • Agricultural stagnation or failure • Economic collapse • High or increasing unemployment (particularly in rural areas, among youth) • Economic dependence on Federal center • Economic isolation • Large budget deficit • Increase in or strong shadow economy • Obstructive border regime • Questions around resource and distribution • Unclear property rights • Decline in foreign investments • Contested mineral resources • Strong shadow economy

Source: Own development based on the FEWER reporting system (Oct. 2000) and the African Grand Lakes (November 2000)

Table 5. Structural prevention measures for water conflicts (re-developed indicators from FEWER peace-building approaches, 2001)

Thematic issue	*Situation of submerged or rising tensions*	*Post-conflict transition*
	1. Structural sources of conflict	
Problems in managing transition and rapid change	Economic stability and economic reform • Agreements and financial mechanisms stabilizing the national economy • Strengthen government's capacity to regulate foreign investment Migration and resettlement • Assist development of legal framework for rapid social and economic integration of migrants • Support social cohesion and cultural identity within migrant community	Social cohesion • Support broad participation in political process, labor market, and national civil society • Encourage political power-sharing arrangements to avoid brisk shifts of political balance
Widening socioeconomic disparities	Equitable economic development • Prioritize social investment (health, education, water/sanitation) Meet basic human needs • Food security, access to housing and infrastructure Reduce social exclusion • Facilitate access to land, capital, and credit	Equal participation in "peace dividend" • Good governance to convert economic growth into tangible benefits for whole population • Debt relief
Competition over natural resources	Enhance environmental security • Optimize use of existing resources Sustainable resource management systems • Monitor changes in resource management • Support viable customary land tenure and resource management systems	Agreement on sustainable resource management systems as central part of reconciliation process • Provide technological and financial support to resource management agreements Environmental rehabilitation

Political exploitation of cultural and other differences	Constructive social dialogue and cooperation • Residential desegregation • Projects promoting common interests and collaboration of divided groups	Culture of reconciliation • Functional accommodation • Confidence building
	2. Capacity to deal with conflict constructively	
Legitimate government and good governance	• Assist and monitor democratic institutions • Support establishment of a clear division of tasks between central, regional, and local government • Strengthen public administration and effective delivery of government services • Civil service reform for more impartiality and accessibility • Allow time for evolutionary process and provide space for local solutions	• Support restoration of government functions and attraction of specialists into government • Strengthen legislature • Support civilian control over political and economic affairs
Pluralism and participation	• Encourage administrative decentralization • Strengthen intermediary bodies • Assist elaboration of a legal framework for independent and free media • Strengthen independent national and local media institutions • Strengthen local arbitration and mediation skills	• Strengthen structures of participation and decisionmaking, from local to regional level • Strengthen the voices of the marginalized • Strengthen non-exclusive social networks • Help establish "safe spaces" for non-confrontational dialogue • Offer facilitation and mediation training • Promote culture of dispute resolution
Channels for conflict management	• Strengthen legitimate customary dispute resolution systems • Facilitate access to legal system	• Promote systematized and fair dispute settlement • Strengthen equal application of law for all • Encourage public dialogue on the past
Positive and negative international engagement	*Reduce external support for conflict* • Incentives and sanctions to discourage conflict-	• Strengthen regional mechanisms for conflict prevention • Assist regional

	promoting involvement • Address root causes of potential conflict in neighboring states	management of shared natural resources • Strengthen links between civil society in the region
Legacy of violence	Individual and collective security Transform the "'culture of violence" • Promote idea of peaceful conflict resolution	Healing the wounds of the conflict

Source: Nyheim et al., FEWER (2001, pp. 26–29 modified).

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Constitution of UNESCO (excerpt)

London, 16 November 1945

The Governments of the States Parties to this Constitution on behalf of their peoples declare:

That since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed;

That ignorance of each other's ways and lives has been a common cause, throughout the history of mankind, of that suspicion and mistrust between the peoples of the world through which their differences have all too often broken into war;

That the great and terrible war which has now ended was a war made possible by the denial of the democratic principles of the dignity, equality and mutual respect of men, and by the propagation, in their place, through ignorance and prejudice, of the doctrine of the inequality of men and races;

That the wide diffusion of culture, and the education of humanity for justice and liberty and peace are indispensable to the dignity of man and constitute a sacred duty which all the nations must fulfil in a spirit of mutual assistance and concern;

That a peace based exclusively upon the political and economic arrangements of governments would not be a peace which could secure the unanimous, lasting and sincere support of the peoples of the world, and that the peace must therefore be founded, if it is not to fail, upon the intellectual and moral solidarity of mankind…




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