ENVIRONMENTAL CONFLICTS AND REGIONAL CONFLICT MANAGEMENT

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Keywords: Environmental conflicts, regional cooperation over renewable resources, human-environment interaction, environmental conflict management, freshwater conflicts, fish conflicts, Nile Basin

Contents

Summary

This chapter examines when and how environmental scarcity and environmental degradation cause conflicts, and how countries manage conflicts over internationally shared renewable resources. Two research programs concerning environmentally induced conflicts are examined and some thirty environmental conflict management efforts are summarized. One example, the Nile Basin Initiative, is discussed in more depth. Three main conclusions can be drawn:

Firstly, scarcity of renewable resources and degradation of the environment can cause conflict when combined with certain political and socio-economic conditions. Such conflicts can turn violent in the intra-national setting, often in the context of political instability and poverty. International environmental conflicts, however, very rarely result in military action. Lack of international cooperation over internationally shared resources does, however, hinder the adequate development of these resources, thus leading to resource overuse or under-use, or unmitigated natural catastrophes such as

droughts and floods. These negative impacts, in their turn, can be co-responsible for poverty, migration and conflicts that arise.

Secondly, there are indications that third-party assistance, typically of an International Governmental Organisation (IGO), is often more effective in reducing international tensions and enhancing ecological sustainability than conflicts solely managed by the conflicting parties themselves. The examples discussed demonstrate that conflict management efforts are more likely to be successful when they focus on interests, when they aim at efficiency increase and demand-side management, and when there is a legal and institutional framework in place that corresponds to the natural system it aims to manage.

Thirdly, the examples of conflict management listed here indicate that IGOs should be strengthened in their role as third-party facilitators. IGOs need to support the actors without taking on ownership of the process or outcome. **Cross-track** management, i.e. efforts to link government with mid-level leadership and the grass-root level, is needed to avoid shifting problems from the international arena to the national one.

1. Introduction

"No peace will be secure unless it is grounded in equitable sharing of scarce resources or offers a sustainable future for all concerned." In this statement, Malcom Rifkind, former British Foreign Minister, points to the links between the environment, conflict and conflict management. The topic of this chapter, namely these linkages, is referred to with terms such as environmental conflicts, ecological conflicts, and environmental conflict management or in a broader sense environmental security. There are two main questions. The first question concerning environmentally induced conflicts asks when and how scarcity of renewable resources and degradation of the environment lead to violent conflict. The second question concerning environmental conflict management asks how large groups of people can use scarce natural resources in a cooperative way. Wars over non-renewable resources such as mineral oil are referred to as resource conflicts; they are to be distinguished from environmental conflicts over renewable resources and will not be discussed here. The destructive effect of violent conflicts and war on the environment is not examined either. Global environmental conflicts are discussed elsewhere in this volume (see International Cooperation to Resolve International Pollution Problems). The chapter focuses on regional conflicts and cooperation, e.g. between neighboring countries of a shared river basin. Furthermore, it will focus on conflict dynamics and the involved communication patterns rather than on the more long-term legal policy issues and regime formation (see International Environmental Agreements and the Case of Global Warming).

The conflict terminology is ill-defined. The term *conflict* will be used as defined by Lewis Coser: "… a struggle over values and claims to scarce status, power and resources in which the aims of the opponents are to neutralize, injure or eliminate their rivals." Conflicts can be categorized or described by the following dimensions: (1) The issue at stake (e.g. resources, self-determination); (2) The actors and the characterization of these (e.g. state, non-state); (3) The form of the conflict (e.g. latent, manifest, violent, or non-violent conflicts); (4) The causes of the conflict (e.g. acquiring or defending

material and immaterial values); (5) The arena in which the conflict takes place (e.g. local, international, river basin, forest area).

Violence is used here to describe the abusive use of force intended to compel or hurt people. Violent conflict is thus a wider definition than armed conflict in that it can be applied to the personal, institutional or structural level.

Environment will be used to refer to the natural resources and ecosystems upon which humanity is dependent on for survival, e.g. freshwater systems, terrestrial systems, seas, oceans, atmosphere and biodiversity. Non-renewable resources such as mineral oil are only included in this analysis if their use leads to the degeneration of the environment.

Environmental conflicts is defined by the Environment and Conflicts Project (ENCOP), headed by Günther Baechler and Kurt R. Spillmann, as follows: "Environmental conflicts manifest themselves as political, social, economic, ethnic, religious or territorial conflicts, or conflicts over resources or national interests, or any other type of conflict. They are traditional conflicts induced by an environmental degradation. Environmental conflicts are characterized by the principal importance of degradation in one or more of the following fields: 1) overuse of renewable resources; 2) overstrain of the environment's sink capacity (pollution); 3) impoverishment of the living space."

The Toronto group, headed by Tomas Homer-Dixon, used a somewhat different definition: "Environmental conflicts are violent conflicts that are caused by environmental scarcity in interaction with a variety of often situation-specific, contextual factors. Environmental scarcity appears in three forms: demand-induced scarcity (i.e. scarcity arising from increases in demand caused by, for example, population growth); supply-induced scarcity (i.e. scarcity arising from a reduced total availability of certain resources due to degradation or depletion), and structural scarcity (i.e. scarcity arising from the unequal distribution of, or access to, resources)."

Both research groups focused on the causal relationship between the environment (natural, renewable resources) and violent conflicts, the focus of the first section of this chapter on environmentally-induced conflicts.

For the second section of this chapter on environmental conflict management we use a wider conflict definition, as used by the Environmental Change and Conflict Transformation research group of NCCR North-South: "Environmental conflicts are conflicts over the use of natural resources, where at least one of the actor groups is negatively affected by objective and subjective divergences in positions and/or interests". Rather than focusing on violent conflict alone, the continuum between cooperation and highly escalated conflict is of interest when dealing with conflict management.

2. Environmentally Induced Conflicts

ENCOP and the Toronto group were pivotal in launching research on the environment as a cause of violent conflict in the 1990s. Both groups arrived at similar conclusions, even if they used somewhat different categories and research methods.

2.1. Typology of Environmental Conflicts

The ENCOP group differentiated between the following types of environmental conflict, which frequently overlap in reality in the following.

Centre-periphery conflicts often ignite around large-scale development projects such as dams or irrigation schemes. The benefits of such projects are mainly accrued by the central state power, and are often linked to a globalized market. People in the periphery, often surviving on a subsistence basis, do not benefit equally, e.g. when they are forced to migrate from a sacrifice area to make space for a reservoir. If these people are not compensated and integrated, they may oppose the central state.

The fault lines of *Ethnopolitical conflicts* run along (often superficial) ethnic differences. Ethnicity is used as an identification and mobilization mechanism to unify people, in this way unanimously articulating individual needs and grievances concerning the environment. As the conflict escalates and becomes more protracted, ethnicity as a factor may become more important than the original question of resource use. This phenomenon was pointed out and referred to as conflict inversion by Mohamed Suliman when analyzing environmental conflicts in Sudan.

Internal and cross-border migration conflicts result from voluntary or forced migration, one of the most frequent consequences of environmental degradation. Often these migration conflicts are caused by relative overpopulation, linked to poverty and political instability. In the year 2000, at the World Water Forum in Hague, Ismail Serageldin, Chairman of the World Commission on Water, pointed out that: "The land and water crisis in river basins contributed to the total of 25 million environmental refugees last year, which for the first time exceeded the number of war-related refugees. By 2025 the number of environmental refugees could quadruple." Once the migrants arrive in a new area, conflict with those already present may arise if the respective needs of the different communities are not dealt with adequately.

International water conflicts may arise over river basins that cross national boundaries. Conflict lines frequently form between upstream and downstream users of the river, particularly, as the cost and benefit of water used for hydroelectric power or irrigation are often asymmetrically distributed. Another example is the effect of upstream pollution on downstream regions.

Finally *global environmental conflicts* were identified by the ENCOP group. The failure to agree on international management of global problems, such as climate change, may indirectly lead to violent conflict, e.g. people being forced to migrate from islands in the South Pacific that are endangered from a rising sea level.

The Toronto group differentiated two processes of interaction between the environment and society that might lead to violent conflict, namely, resource capture and ecological marginalization. Resource capture describes the process by which powerful groups in a society may seek to control access to, and distribution of, scarce resources in their favor. Scarcity of renewable resources, an increase of population dependent on these resources, and an unequal distribution of these resources may cause people to migrate to

marginal ecosystems, a pattern of interaction referred to by the Toronto group as ecological marginalization.

There is a similarity between ENCOP's category of migration conflicts and the Toronto group's process of ecological marginalization, as well as between the category of centre-periphery conflicts and the process of resource capture. The terms used in the Syndrome Approach are also similar. The Syndrome Approach, first developed by the German Advisory Council on Global Change (WBGU), looked at different negative human-environment patterns of interaction. The research project NCCR North-South Research Partnerships for Mitigating Syndromes of Global Change is further developing the syndrome approach by analyzing clusters of core problems and how they interact. In the syndrome terminology, centre-periphery or resource capture conflicts have a similarity to the Aral Sea Syndrome – i.e. environmental damage caused by large projects. The category of migration conflicts and the process of ecological marginalization have a similarity to the Sahel Syndrome, i.e. the over-cultivation of marginal land. The findings of both the Toronto and ENCOP research groups agree that environmental scarcity and degradation do not directly lead to violent conflicts; rather they are seen as a contributory condition, sometimes a necessary one, but very rarely a sufficient condition in causing violent conflict. Socio-economic and political factors are contextual factors that influence whether degradation or scarcity will eventually lead to violent conflict or not. Characteristics of environmentally induced violent conflicts include the following:

- They are *multi-causal*. The environment only causes conflicts in interaction with certain economic and political factors.
- There is a strong tendency of *conflict inversion:* Conflict channels are elements that group people and create identification. As the conflict escalates, such channels may become more important than the original environmental cause – an inversion takes place.
- The conflict arena is normally defined by the *physical environment* rather than only through political boundaries. The clash between the natural and political boundaries often lies at the centre of the problem. The largest 260 rivers that cross international boundaries and drain about 45% of the earth's surface, for example, are mainly managed on the national level.
- The *long-term time dimension* of environmental changes and their implication for society do not usually fit political time frames. The effects of environmental change on society are also normally not linear, rather they are marked by thresholds, after which the damage may be irreversible. Ecologically sustainable development is a form of conflict prevention.
- Violent environmental conflicts are generally limited to *developing countries*. People are often directly dependent on renewable resources for their subsistence, and these countries are also less resilient in dealing with increased scarcity. The conflict line often lies between modern technological and traditional subsistence forms of resource use, i.e. small fishers versus large fish trawlers or subsistence farmers and nomads marginalized by large-scale mechanized farming.
- *Non-state actors* are frequently involved. Most violent environmental conflicts are intra-national conflicts. Indeed, this is true for all present day violent conflicts: of the 25 major armed conflicts in the year 2000, all but two of them

were internal, according to the Stockholm International Peace Research Institute. Environmental conflicts often affect different layers of society, from the government down to the grassroots.

Three Types of Criticism

Criticism of this branch of research concerning the link between environmental scarcity and violent conflict can be grouped into: (1) Methodological and theoretical; (2) Criticism of the weight given to environment as a causal factor; and (3) Criticism of the weight given to conflict rather than to other consequences of environmental degradation.

2.2. Methodological and Theoretical Criticism

Methodological criticism partly follows the debate between positivist and phenomenological approaches. The first gives greater priority to the external reality, facts and linear causality; the latter gives greater priority to meanings and inter-linkages and understands reality as something constructed by the observer and the involved actors. Nils Gleditsch points out that the case studies of the Toronto and ENCOP groups were chosen without the independent variable, 'environmental scarcity', or the dependent variable, 'conflict', being left open. Thus, some sort of link was guaranteed from the start. This criticism is valid if one seeks causal effects (does A lead to B?). If one seeks to trace causal mechanisms (how does A lead to B?), however, in-depth case studies are needed. Thomas Homer-Dixon points out that many real life problems cannot be addressed with quasi-experimental methods. He argues that process-tracing, i.e. a detailed step-by-step analysis is an effective way of understanding causal mechanism – how scarcity can lead to violent conflict.

A second phase of environmental conflict research has taken up some of these methodological criticisms, thus attempting greater flexibility of the dependent variable. More recent research also looks at cases where environmental scarcity has led to cooperation, rather than mainly at examples that have led to violent conflict, e.g. the research projects ECOMAN and ECONILE. As a follow-up to the very clear and consistent findings that environmental conflicts are multi-causal, environmental conflict research has also begun to use the Syndrome Approach, e.g. the NCCR North-South project.

2.3. Criticism of the Weight Given to the Environment as a Causal Factor

This criticism is based on the optimistic perspective that the environment is not as badly off as everyone says, that there is a technological fix to every problem, and that market forces will regulate the demand for scarce resources through price signals. An analogy to human health, however, shows that this optimism is misplaced. According to the World Health Organisation, about 4 million people die every year due to unclean drinking water, lack of proper hygiene standards and bad sanitation. The technology to solve the problem exists, but it is not used due to poverty. Where a liberalized market structure has been introduced in developing countries, poor people are often worse off than before, since the regulatory framework is faulty, and the needs of the poorest are

not sufficiently protected. In other words, it is not a problem of lacking technology or of liberalized markets, but of finding and implementing a suitable political and legal framework to guide these instruments. Nevertheless, this form of criticism gives us an awareness of the enormous potential to solve problems if the political framework is adequate. An assessment of the International Water Management Institute, for example, estimates that half of the world's additional water demand in the year 2025 can be covered by increases in irrigation efficiency.

This block of criticism also gives greater weight to other factors causing conflict besides the environment, e.g. ethnic, economic or ideological factors. These must be taken into account on a case-to-case manner. In conflict research there is always the danger of falling into the mono-causality trap, whatever that one factor might be.

2.4. Criticism of the Weight given to Different Consequences of Degradation

This criticism points to the many consequences of environmental degradation besides conflict, such as internal and international migration, poverty, sickness or unemployment. While they are often less dramatic and therefore less present in the headlines, their contribution to human suffering is tremendous. As noted before, there are more environmental refugees than war-related refugees. Facing the choice of fight or flight, flight seems to be more frequent in relation to decreasing renewable resources. Environmental degradation and scarcity may cause conflict further down the line – when it is forgotten that the environment was the original cause for conflict in the first place. Indeed, this long-term and often invisible nature of many of the effects of environmental degradation is possibly a reason why the environment is not given greater priority in politics and public awareness (see National Accounting and Sustainability). Despite the enormous non-conflict related causes of human suffering, there is an extremely pressing reason for greater human expertise on environmental and general conflict management: the cost of humanity's present way of dealing with conflicts is very high. In 1994 the World Game Institute estimated the annual global military spending at 1 trillion US$. Further, they estimated that 25% of this would suffice to finance global programs to prevent soil erosion, stabilize population growth, stop deforestation, stop ozone depletion, provide clean safe energy, prevent global warming, prevent acid rain, eliminate illiteracy, provide health care, provide shelter, retire developing nations' debts, provide safe clean water, and eliminate starvation and malnourishment. The comparison of military spending with the costs to alleviate the major sources of human suffering is a compelling argument for alternative conflict resolution methods. It is also a plausible hypothesis that one of the roots of migration and poverty is a lack of cooperatively managed resources.

3. Environmental Conflict Management

Environmental conflict management refers to all kinds of interventions in a conflict over the use of renewable resources and the degeneration of the environment. The aim is to solve the problems as perceived by the involved actors, transform the hostile relationship between the actors into a cooperative relationship, and enhance ecological sustainability. If science is perceived as a cycle of understanding and conceptualizing data (e.g. basic research), followed by a phase of prescription and problem-solving (e.g.

applied research), the research focusing on environmentally-induced conflicts can be positioned to be dealt with in the first phase, while the research on how to manage these conflicts can be positioned in the second phase. While the debate over the environment as a cause of conflict continues, there remains an urgent need for more insight into how such conflicts can be managed in order to improve the potential for problem-solving. Similarly, while the debate on the causes of climate change is ongoing, the pragmatic stance is that humanity has to reduce its polluting habits, since by the time human-induced climate change is a reality, it will be too late for precautionary actions.

The following section first looks at the differences between causes and influencing factors in a conflict, as this is a key difference between research on environmentally induced conflicts and research on environmental conflict management. A section on the characteristics of conflict management in general and environmental conflict management in particular follows. To give an overview, a list of environmental conflict management efforts is included; the case of the Nile Basin is then discussed in more detail.

3.1 Difference between Causal and Influencing Factors

To deal with the question of conflict management, a shift needs to take place away from the focus on causes of conflict – that may no longer be apparent – to a focus on the inter-linkages of factors influencing the conflict dynamics in the present moment. These *influencing factors* may not always be the same as the root causes of a conflict. A conflict over access to resources, for example, may develop into a conflict along ethnic lines, as ethnicity is used to group people to fight for their interests. Over time the ethnic factor may become more important than the original cause of the conflict. In this example, ethnicity would be termed an influencing factor. The influence of a third party trying to mediate, is another example of an influencing factor. Influencing factors can influence the outcome of a conflict without having influenced the initiation of the conflict. One can argue that influencing factors are also causes, but influencing factors interact with each other, whereas causal factors imply a one-way influence only. The aim of this shift from causal factors to influencing factors is to develop and assess possible conflict management strategies.

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Biographical Sketches

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