

3.2.6 Water scarcity and violent conflict

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SUMMARY: The concept of Environmental Security, emerging at the end of the Cold War period, has prompted different schools of thought. One establishes a direct causality between resource scarcity and military conflict; for water as a resource, this means that water scarcity leads to migration, social deprivation, possibly even state failure and consequently to violent conflict. Another school considers this causal chain not only questionable, but potentially dangerous, since such generalisation renders the concept imprecise and therefore useless. The latter school's focus lies on the role of political and economic factors in addition to the impact of resource scarcity in the emergence of violent conflict. The following article outlines the main schools and their respective focus and sketches a number of existing conflicts over water in different areas of the world

After the Cold War, the concept of security, which hitherto had been defined as referring mainly to the nation state, was challenged by numerous new and territorially not confinable threats. These included, among others, the effects of global environmental changes, the awareness of which resulted from an increased appreciation of ecological issues and problems originating in the 1970s. As a result of the following revision and amendment of the concept of national security, the notion of »Ecological Security« emerged.

Generally speaking, a shortage of essential resources such as water can lead to allocation conflicts, particularly in regions where the political landscape is shaped primarily by confrontation rather than co-operation. In such a political atmosphere, economic independence and self-sufficiency is usually perceived as a central interest of national security, and seen as a means to reduce a state's dependence on supposedly hostile neighbours to an absolute minimum. In order to achieve this aim, however, the access to sufficient water resources is crucial, since without water neither economic development nor sufficient food production are possible. In consequence, water is often regarded as a zero-sum game, since the opposing claims seem to be mutually exclusive.

Nevertheless, it remains a key question whether resource scarcity in general and water scarcity in particular are connected to the actual outbreak of violent conflict, and if yes, how. The main schools of thought relating to this issue shall be presented in this article.

The main schools of thought¹

The theoretical opus on the concept of Ecological Security divides into three consecutive generations. The first generation emerged out of a growing knowledge about the effects of environmental destruction. The main representatives are Mathews, Kaplan and Connelly as well as Kennedy, who together embody a selective, but nevertheless powerful link between politics and research. This first generation mainly dealt with the conceptual issue of whether and, if yes, how environmental issues

could be incorporated in questions of security². They interpreted the term Ecological Security as denoting the potentially conflict-generating correlation between underdevelopment, environmental issues, growing poverty and military tensions, which all jeopardise a state's security. This view was opposed by critics who believed this interpretation of the concept to be incorrect; they argued that treating environmental issues exclusively on the state level was inadequate, since such issues were not spatially or socially confinable, but on the contrary had a global character.

The second generation emerged out of the disapproval of the first. In particular, it found fault in the first generation's lack of empirical evidence for the relevance of the concept of Ecological Security. As a result, large-scale empirical studies were conducted. The main representative of this generation is the Toronto Group around Thomas Homer-Dixon (s. HOMER-DIXON 1999), which is characterised by its focus on tangible conflicts and renewable resources. The researchers of this generation, particularly the Toronto Group, were accused – more or less disrespectfully – of neomalthusianism³, since the global population growth plays a central role in their analysis of resource scarcity. They repeatedly emphasised that a growing world population will inescapably generate ecological scarcity, which will engender social effects like migration and poverty and, as a result of these, violent conflict. Following this rationale, the Israeli »water apartheid regime« in the Jordan basin, which grants the Palestinians only very limited amounts of drinkable water, would first lead to acute water scarcity, thereby to massive socio-economic limitations, and would then result directly in violent conflict with Israel.

The one-dimensional causality of this scarcity rationale was criticised by the third school of thought. The »cornucopians« extended their analyses to cases of peacefully solved resource conflicts, and they underlined that conflicts are usually brought about by more than one cause. This school assumes that there is enough water on

our planet; the problem, according to them, lies mainly in its utilisation⁴. Accordingly, agriculture and irrigation techniques are believed to constitute the main problem. According to this view, water is never more than one aspect of a conflict. In addition, this school builds on the empirical experience that even in conflict situations, water can potentially engender co-operation (see for instance WOLF 2001).

• *Further reading:* BARANDAT (1997), DIEHL & GLEDITSCH (2001) and MADER et al. (2001).

Case Studies on Water as a Cause for Conflict

In the second and third generations' numerous case studies, both violent and peaceful conflict solutions have been analysed. Due to spatial limitations, this article will focus on only a few typical examples of international water allocation conflicts in which two or more neighbouring states assert claims on the same water resource.

The Nile

The Nile Basin differs from many other basins in that the upper neighbouring state is not the most influential party of those involved in the conflict over water. On the contrary: It is the lower neighbouring state, Egypt. This is a result of Egypt's political, economic and military superiority in the region. However, all regional governments are aware of the relevance of water for their respective socio-economic development, so that it is part of each nation's perceived security interest to secure as many water rights as possible for themselves. More than 140 million people live in the Nile catchment area, and ten countries share its water. The pressure on the resource is rising steadily due to population growth and the way in which the water is predominantly used.

Egypt lays claim to the largest part of the Nile's water, which up to now covers approximately 90% of the country's water needs. Thus, the state depends on water resources which have their source outside of its national borders; 86% of the Nile's waters originate in the Ethiopian plateau. This was one of the reasons, for instance, why Egypt answered Ethiopian plans to build large dams on the upper Nile with political and military threats. Such a dam, however, would help Ethiopia immensely to irrigate agrarian land and thus to reduce the probability of famine considerably. Also, the Sudan has encountered pressure by Egypt in the past: Sudanese considerations to terminate the contract of 1959 between Egypt and Sudan about the use of Nile waters were met with analogous threats. One reason for Egypt to resist the formation of an independent South-Sudanese state is the fact that this state would be yet another neighbouring

state with claims to Nile water. Moreover, this new state would not border on Egypt, and would thus be far outside Egyptian influence. In any case, the termination of the Sudanese civil war would presumably entail hydropolitical changes, since it would be followed by economic development in Sudan which would entail increased water needs.

Thus, there are several different and contradicting political and economic claims and needs in the discussion about Nile water allocation. Even today, the majority of the region's population is suffering from malnutrition, and conflicts or wars like in Rwanda, Burundi, Uganda, Sudan and Eritrea are not uncommon. But it has not, however, been verified that the region's water scarcity is directly and causally connected to these conflicts. On the contrary: The region's states have united to the so-called »Nile Basin Initiative«, and have thus institutionalised international co-operation between the neighbouring states in water management. Today, the representatives of the Nile countries meet annually in the so-called »Nile Council of Ministers« (Nile COM). In addition, the »Nile Technical Advisory Committee« (Nile TAC) meets four to five times a year. Thus, a prime example for insufficient co-operation in water management has developed into an example for international co-operation.

In the more recent past, Ethiopia has once more hinted at the necessity to increase its water usage for its development, especially in terms of food production. The Egyptian reaction has been swift and threatening. At the same time and in a parallel development, however, Egypt has raised the issue of stronger economic and technical co-operation. A peaceful solution of this allocation conflict is much more probable than a violent conflict over water.

• *Further reading:* MASON (2001)

The Indus

The Indus supplies water for an area of more than 100.000 km²; this is one of the world's largest irrigation areas of one single river catchment. The catchment area is located for the most part in Pakistan, but important tributaries stem from India. As early as under British rule the Indus basin had been the object of allocation conflicts, which were then internationalised through the division of the Indian subcontinent. The newly created states did not agree about the way in which the Indus water should be managed and allocated. India, which controls the headwaters of the Indus basin since the separation, pursued different goals than Pakistan. This became clear when India, in 1948, drastically reduced or completely cut off the water flux of the Divalpur Canal and the main arms of the Upper Bari Daab Canal. The people living in the area of today's Pakistan had for centuries used this water for agriculture, and felt threatened in their existence

by these actions. In 1951, as a result of these tensions, the negotiations about water distribution between India and Pakistan were so deadlocked that a solution seemed to be impossible. At the same time, a war about Kashmir seemed increasingly probable; the conflict about water allocations further increased the political tensions between the conflicting parties. But also, co-operation in water management appeared to be the one possibility to ease these very tensions.

In December 1954, both parties – pressured by the World Bank – resumed their talks about the Indus; six years later, they signed a treaty which regulated water allocation and institutionalised co-operative management in the Indus basin. By now, the »Permanent Indus Commission« has survived two wars, and continues to be a tool of consultation and conflict resolution through inspections, data exchange and mutual visits. The Indus Treaty is the one agreement which India and Pakistan have implemented together and still abide by.

The Jordan

Another example for water conflicts can be found in the Middle East, which has always been suffering from water scarcity. Arguably, this is why the Bible already bestows considerable symbolic value to wells and water. The Jordan basin is one of 261 international rivers and river basins that are divided between two or more neighbouring states. Its climate and geography together with the region's political situation make the Jordan basin arguably the most frequently cited example for international water resources with the potential for conflict.

Usable water is stored in the Jordan and its tributaries (Hasbani and Banyas in Syria, Dan in Israel, Yarmuk in Jordan), the Sea of Galilee and the different aquifers (Mountain and Coastal aquifer, as well as a number of as yet less developed groundwater reservoirs). Already before the Six-Day-War of 1967, water had been a cause for conflict in the region: Israel had planned to divert the Jordan river water from the north of the Sea of Galilee to the very arid south of the country, while Syria intended to use some of the water from the Hasbani and Banyas, which both originate in the Golan Heights, for irrigation projects and the Syrian supply of drinking water. Israel answered these plans between 1964 and 67 with bomb attacks on the Syrian construction sites. The results of the Six-Day-War include that the region's water reservoirs came under Israeli control with the occupation of the Golan Heights and the West Bank. However, it has not been proven yet, and will probably remain an open and contentious issue whether water was one of the explicit causes or triggers for this war.

Today's neighbouring states of the Jordan catchment

are Jordan, Lebanon, Syria, Israel and the Palestinian people. The unresolved political status of the Palestinian Territories adds to the Palestinian's weak position in the negotiations. For instance, their interests are not mentioned at all in the Israeli-Jordanian peace treaty of 1994, in which water allocation plays a major role. The conflicts between all the neighbouring countries regarding water are multifaceted: Jordan and Israel compete about the water of the Jordan, Syria and Israel quarrel about the water in the Golan Heights, and the Palestinians demand a principal consideration of their needs, since until today they do not have access to the Jordan river water, and only limited access to the Mountain aquifer.

However, the outbreak of violence over water allocations is very improbable. The conflict between Jordan and Israel has been considered solved since the Peace Treaty of 1994. And in the conflict between Israel and the Palestinians, water is the only issue that has engendered lasting co-operation since the Oslo agreements. The Israeli-Palestinian Joint Water Committee, established in the Oslo process, has met even during the second *intifada*. In addition, water does not have the same value like, for instance, oil, since the regional states have developed or are developing from agrarian into industrial societies, so that a war over water simply is not economically feasible. The issue of water in Israel and Palestine today is mainly one of ideology, not of vital necessity.

• *Further reading:* DOMBROWSKY (1995, 2003), BARANDAT (1997) and SELBY (2001).

Euphrates and Tigris

For years, the Euphrates-Tigris-basin has been the object of conflicts between Turkey, Syria and Iraq. Both rivers originate in Turkey, and the Turkish government as upper neighbouring country claims large parts of their water for exclusively Turkish projects. Particularly the GAP-project, which involves the construction of more than twenty dams in Turkey's east, will dam up immense amounts of water on Turkish territory. This is supposed to serve both the production of electricity and the irrigation of agricultural areas. Through these dams, and also due to the resulting high evaporation losses, the amount of water that reaches the lower neighbouring countries is decreased massively. Turkey argues that in spite of this large-scale project, the water allocations that have been agreed upon do reach both Iraq and Syria; however, the water does not necessarily reach them at the time when it is most needed by the Syrian and Iraqi agriculture. No agreement has been reached through negotiations up to now, since Turkey is militarily superior and privileged through its NATO membership. Neither Syria nor Iraq find themselves in an advantageous position for negotiations.

Especially Turkey as upper neighbouring country has abused water as a political tool to put pressure on the other states. For instance, Turkey has used the water leverage to force the Syrian government not to support the PKK any longer. But nevertheless, not even in this region there has been a genuine »water war«; if anything, water is one single aspect of a greater political conflict that is being utilised for the latter's political ends.

• *Futher reading*: BARANDAT (1997)

Concluding remarks

The reductionist generalisation of the neomalthusian view does not do justice to the complexity of water conflicts. As has been shown in the case studies, conflicts about scarce water resources are highly complex. Usually, they are not a matter of mere allocation conflicts – if the water resource is international – but are influenced by aspects of power politics, economy, society and religion.

In addition, it has been made clear that water not only has a potential for conflict, but also for co-operation and peaceful solution. There has not been a single war fought exclusively over water allocations in the past, and in all probability, there never will be. Water is one aspect among many others which may pander conflict; but more importantly, it may benefit co-operation even in times of persistent military conflicts. Thus, there is no evidence whatsoever for an inevitable development from water scarcity to water wars. There are various technical, organisational and political means to solve water conflicts peacefully. These include an increase of water efficiency, water recycling, desalination and solutions through compromise and co-operation, to name only a few.

The University of Oregon's »International Water Treaties database«⁵ lists more than 400 water treaties, almost one hundred of them of the last 60 years, which have solved water allocation conflicts. Thus, extensive know-how concerning international co-operation in the water sector is at hand. In addition, international developmental co-operation is devoting a lot of attention

to the support of multilateral co-operation in the field of efficient and just usage of scarce water resources in order to prevent the political utilisation of differing claims on such resources.

Kurt Spillmann writes: »Today, international wars over renewable resources like water are not likely, since the usage of renewable resources can neither easily nor rapidly be turned into power«⁶. This does not mean, of course, that conflicts over water allocations will never occur again. It does mean, however, that such conflicts not only may be successfully solved, but also that they may help to engender co-operation ♦

¹ Due to spatial limitations, this article deals exclusively and rather briefly with the ongoing and prevailing schools; a more extensive analysis of the different research generations can be found in RINGSTORFF (2003), which also forms the basis for this study. For the benefit of a concise structure (and in accordance with most studies on this topic), the different approaches presented here have been divided into generations; however, this does not mean they are homogenous. The approaches melt into one another and exist parallel to each other.

² See RINGSTORFF (2003), 21/22.

³ This name derives from Robert Malthus (1766–1834), who in his »Essay on Population« (1798) outlined that a growing population needs corresponding amounts of foodstuffs in order to be sustained. At the same time, however, the area suitable for food production is limited; the logical and inevitable consequence of this limited »carrying capacity« of our planet is, according to Malthus, food scarcity, hunger, and malnutrition.

⁴ Nils Petter GLEDITSCH, lecture at the International Expert Workshop »Water, Development and Co-operation. Comparative Perspective: Euphrates-Tigris and Southern Africa«, organised by BICC and ZEF, Bonn, 1.3.2004.

⁵ <http://www.transboundarywaters.orst.edu>.

⁶ Kurt R. SPILLMANN (2000), 5. »Zwischenstaatliche Kriege über erneuerbare Ressourcen wie Wasser sind auch gegenwärtig wenig wahrscheinlich, da die Nutzung erneuerbarer Ressourcen weder einfach noch schnell in Macht umgewandelt werden kann«.