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Water Governance in Southern Africa— Cooperation and Conflict Prevention in Transboundary River Basins

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Introduction: The global water crisis—A crisis of governance

Water is indispensable for sustaining biological diversity and human life. On a global scale, water is an abundant resource. Water covers 71 percent of the earth's surface; altogether 1.4 billion cubic kilometers of water can be found on our planet. However, only 2.5 percent of this amount is freshwater, and two thirds of that are bound in glaciers and permanent snow, thus non-usable for human demand. However, even this small fraction of all the world's water has-in absolute terms-up to now been more than sufficient to sustain humankind.

Water is an almost ubiquitous resource. Except for completely arid regions, it can be found all over the globe. Furthermore, it is a renewable natural resource, renewed via precipitation. At the same time, however, water is increasingly becoming a scarce resource in many parts of the globe.

The century between 1900 and 2000 witnessed a dramatic increase in global freshwater withdrawals from 500 to about 4000 cubic kilometers per year (Saleth/Dinar 2004, p. 4). "Although current withdrawal represents no more than 5 percent of the physically accessible global fresh water resources, it is close to a third of the planet's economically accessible blue water resources" (Saleth/Dinar 2004, p. 4). Given the current trends of the development of human society on a global scale, the problem of water scarcity most likely will become more pressing in the near future. At present, water consumption on a global scale doubles every twenty years. In many countries demand is growing faster than supply. This holds true especially in developing countries in arid and semi-arid regions of the South, where water is relatively scarce anyhow, and growth rates of population are relatively high. According to the United Nation's World Water Development Report (WWDR), almost two billion people are affected by water shortages in over forty countries today (WWDR

2003, p. 10). In view of population growth and the increase in water use due to agricultural development, industrialization, urbanization and increases in per capita use due to changes in lifestyles, the situation is bound to worsen in the coming decades.

UN projections suggest that by the year 2050 seven billion people in sixty countries will suffer from water scarcity in the worst case, and "even under the lowest projection, just under 2 billion people in forty-eight countries will struggle against water scarcity in 2050"(WWDR 2003, p. 13). Hence the UN World Water Development Report concludes that the world is facing a dramatic and escalating water crisis. Already today, water scarcity has reached alarming dimensions in several arid and semi-arid regions of the South, including parts of the Middle East, Central Asia, the Indian sub-continent and especially Africa.

When talking about water scarcity one has to keep in mind that "water is needed to meet not only human needs but also the needs of the water-based ecosystems that form part of the global life-supporting system" (Saleth/Dinar 2004, p. 4). Global changes to the environment, e.g. global warming and sea level rise, as well as regional and local problems caused by the environmental degradation of freshwater sources contribute to this scarcity. The water crisis is of man's making.

Water and conflict

It is at this point that conflict comes into the picture: Man-made water scarcity-which first and foremost is felt, of course, in regions of the world where water is naturally scarce anyhow-may lead to conflict over water. For water is not only becoming a scarce resource, but is also one that is divided extremely unevenly between regions

and states as well as within societies. Unevenly divided, scarce resources are-as empirical evidence throughout history shows-contentious subjects leading to conflict.

Conflicts may easily arise if water is-or is perceived as being-(over-)used and/or degraded by other actors at a cost to oneself. The possibility of conflicts at international, regional and local level regarding access to and use of freshwater therefore poses a serious threat to both human security and the security of states, especially in those regions of the globe which are already severely affected by water scarcity.

Having said this, one has to conclude that nowadays water security is an essential component both of the national security of individual states and of international security, because all dimensions of an extended security concept (food security, economic security, environmental security, human security at large) are dependent on water security.

It is against this background that the imminent danger of "water wars" has become a prominent issue in the political and scientific discourse and in the perception of the general public at large.[1] The main focus of those fears lies on transboundary river courses. As nature does not respect man-made political borders, there are more than 260 rivers in the world that transcend international boundaries and that are used jointly by two or more riparian states. 40 percent of the world's population live in those shared river basins. It is hence easy to imagine the number of potential international conflicts. Any unilateral activity by one riparian that affects the quantity or quality of water flowing down a shared river system can seriously impact on other riparians. Many states are dependent on water resources that are generated outside of their territories. Egypt and Turkmenistan are almost completely dependent on water flowing in from outside. States sharing a river basin constitute a highly

complex, interdependent hydropolitical system, the dynamics of which are intimately interwoven in terms of the environment, the economy, politics and security. Therefore hydropolitics have become an important area of international policy.

Especially volatile are upstream-downstream constellations. An upstream riparian might easily cause significant harm to its downstream neighbor by over-using or polluting the waters of the shared river. The downstream riparian might be left with diminished amounts of water or degraded water quality so that the downstream demands can no longer be met in full.

As a renewable resource, freshwater can become subject to environmental degradation. Environmental degradation can take two forms: Firstly, over-exploitation of the resource, that is usage of the resource to a degree that exceeds its natural regeneration capacity. This is the quantitative dimension. Secondly, contamination of the resource, that is usage of the resource in ways that negatively affect its qualitative natural regeneration capacity so that the resource can no longer be used for life-sustaining purposes. This is the qualitative dimension of environmental degradation. Both the quantitative and the qualitative aspect of environmental degradation may lead to man-made water scarcity and subsequently to upstream-downstream conflicts. These conflicts are either conflicts about the absolute or relative allocation of water or about contamination/pollution.

Conflicts about the absolute allocation of water occur in constellations in which the options for usage are absolutely asymmetrical. If water is consumed by the upstream riparian for its own purposes (e.g. irrigation, urban household water supply), this water cannot be used by the downstream riparian. Moreover, the

downstream riparian has to struggle with the environmental effects of reduced water flows, e.g. destruction of wetlands, shrinking of water bodies, saltwater intrusion in river estuaries. This means the upstream riparian is in a position to externalize the costs of water abstractions to the detriment of the downstream riparian. Under conditions of water scarcity and high water usage, the issue of the absolute allocation of water is particularly conflict-prone, all the more so if the upstream riparian intentionally externalizes the costs and knowingly or even willingly causes harm to the downstream riparian.

Conflicts over the relative allocation of water also belong to the quantitative dimension. However, it is not the complete consumption of the resource which is at stake, but the distribution of water flows over time. In those cases, the upstream riparian keeps water for its own purposes for some time (e.g. for the production of hydropower). Water is not denied completely to the downstream riparian, but only held back for some time. This also may lead to upstream-downstream conflicts because the downstream riparian is confronted with additional costs, e.g. salination, and possibly misses out on adequate water quantities in times when water is in particular need, e.g. in the dry season.

Conflicts about pollution/contamination result from the fact that the upstream riparian can externalize the costs of using the river as a sink to the detriment of the downstream riparian. Urban sewage, pesticides for agricultural use, contaminated mine tailings, industrial pollution, etc. all contribute to the qualitative degradation of the resource. In these cases, the quality of the resource is the cause of conflict, and not the quantity as in cases of conflicts about absolute and relative water allocation.

All three issues-absolute or relative water allocation and water contamination/pollution-can cause conflict between riparian

states. Moreover, in cases where the downstream country is highly dependent on that given river for its water supplies and power relations between the riparians allow for confrontative behavior (e.g. the downstream riparian being militarily stronger than the upstream neighbor(s)), a resort to the violent conduct of conflict cannot be ruled out.

Another type of conflict constellation is given where a river forms the border between two states. This means that the river is shared over a certain length-sometimes hundreds of kilometers-by two riparian states. This might give reason for disputes over the precise position of the boundary line along the river bed (and eventually over islands in the river), all the more so if the river is altering its course more or less regularly, e.g. because of variations in its flow. Furthermore, water distraction on the one bank of the river by one riparian, e.g. for irrigation purposes, might have negative effects on the other bank. What has been said about the absolute allocation of water in an upstream-downstream constellation also holds true in this situation: Water that is consumed on the one side is not available on the other side of the river.

However, in principle both sides have the option of water distraction on border rivers; the situation is symmetrical (in contrast to the asymmetrical upstream-downstream constellation). In the worst case, this might lead to a devastating competition with both sides distracting water unilaterally, without caring about the neighbor's concerns or the environmental impact on the river.

With regard to the discharge of pollutants into the river, the situation is different from the upstream-downstream constellation. The polluting riparian also affects itself negatively, because in a shared water course one cannot externalize the

environmental costs (this also holds true for international lakes). When it comes to the issue of pollution/contamination, bordering riparians are more dependent on each other than upstream and downstream riparians. Nevertheless, there might be cases in which one riparian is more interested in and/or more advanced in economic development and less interested in environmental protection, whereas the other riparian puts more stress on environmental protection more than its neighbor. This could be the case if one riparian wants to establish chemical industry or mining projects on its side of the river, whereas the other riparian traditionally has a strong interest in river fisheries. Fisheries are dependent on a certain degree of water quality: mining projects and chemical plants can easily lead to the deterioration of that very water quality.

Furthermore, any endeavors to develop the river economically and make use of its resources that necessitate the usage of the river as a whole, e.g. production of hydroenergy, can become issues of contention. A dam for the purpose of producing hydropower cannot be built on one half of the river bed only. Agreement between the riparians has to be reached. Last but not least, river borders only too often divide communities which settle on both sides of the river and share a common culture and history, have close family ties and a tradition of interaction (trade, etc.) across the river. This holds true especially for regions in the South where political borders along rivers were drawn by colonial powers-because rivers lend themselves easily as 'natural' demarcation lines-without taking into account the traditional transfluvial relations of the local population. Those 'artificial' colonial boundaries were inherited by the newly independent states, which until today have to cope with problems stemming from this way of demarcating boundaries. From this conflicts between states and conflicts between local river communities and their respective central governments can emerge.

Conflict, not war

In the arid and semi-arid regions of the South, where water is crucial for economic development and societal well-being and is at the same time scarce, conflicts between upstream and downstream or bordering riparians have already led to serious tensions. The Nile River, the Euphrates and Tigris, the Jordan River, and the Amu-Darja and Syr-Darja are cases in point. The "water war" discourse refers to those cases again and again. However, in doing so, it presents a highly distorted picture. Thorough empirical research reveals that no serious conflicts have occurred so far with regard to the large majority of transboundary river systems and that even in many of the most conflict-prone cases it has been possible to avoid the outbreak of violent conflict. Aaron T. Wolf and his colleagues of the "Basins at risk" (BAR) project at Oregon State University have conducted comprehensive empirical work on the issue of international water courses and conflict. The empirical findings of this project, which are presented in the so-called Transboundary Freshwater Dispute Data Base (TFDD), have contributed considerably to putting the 'water wars' thesis into perspective.

The project assessed all reported events of either conflict or cooperation over water resources between two or more states in the period from 1948 to 2000. It was found that of the 1831 interactions between riparians the vast majority (1228) were of a cooperative nature. Among other things, approximately two hundred treaties on the common use of shared water courses have been put into effect over the last fifty years. 507 conflictive events were registered. Only 37 involved violence, and only 21 included military action. And of these 21 cases (out of 1831), 18 involved Israel and its neighbors, hence a very specific conflict constellation (see below).

Not one single "water war" can be found in the data base. However, two caveats have to be kept in mind here: first, Wolf and his colleagues confined themselves to research on state-to-state relations with regard to international water courses, they omitted the sub-national and regional level. Given the fact that internal (or at least not "classical" international) violent conflicts constitute the bulk of today's wars, this is probably a shortcoming of major importance. Maybe water played a role in internal violent conflicts on a much larger scale than in the international arena. Wolf and colleagues cannot say anything about that. It was only in a follow-up study (BAR II) with regard to three case study regions (the Middle East, South Asia, and Southern Africa) that the domestic dimension was also addressed, by collecting internal water events for the period from 1989 to 2000 (see Yoffe et al. 2004, p. 8-12). Secondly, future developments that will contribute to an escalation of the water crisis-e.g. climate change and its impacts on precipitation patterns-cannot be appreciated adequately if one only looks back into history. The problem might rise to new dimensions in the future, and this might also have repercussions on the scope and intensity of conflicts. Wolf and colleagues only hint at this problem briefly (under the heading: "Why might the future look nothing like the past?") and suggest that "tomorrow's water disputes may look very different from today's" (Wolf/Yoffe/Giordano 2003, p. 51).

And although there were and are no inter-state "water wars", this is not to say that there were not any international tensions with regard to water. Those tensions at times even led to the threat of the use of force. The most famous and maybe a thousand times quoted example is the statement by Boutros Boutros Ghali, then deputy foreign minister of Egypt (and later UN Secretary General), in 1987 that the next war in the Middle East will be fought not about politics, but about

water, and the repeated threats of the Egyptian government that-if need be-Egypt will go to war over the river Nile. These kinds of tensions have hampered development, not only in the case of the Nile, but also with regard to other international river courses.

However, water scarcity obviously does not automatically lead to violent conflict. On the contrary: the dependence on transboundary water courses offers strong incentives for cooperation between riparians. In fact, hundreds of bilateral and multilateral agreements are already in place dealing with specific concerns regarding international freshwater resources. Moreover, the UN Convention on the Law of the Non-navigable Uses of International Watercourses (21 May 1997) provides a general framework which lays down basic principles for the use of international rivers by riparians. Three core principles of international water law are enshrined in the Convention: the principle of equitable and reasonable utilization, the obligation not to cause significant harm, and the duty to cooperate with co-riparian states. "The abstractness and generality of the core principles provide flexibility to accommodate in the framework of specific watercourse agreements the multitude of geographical, economic, technological, social and political factors potentially leading to diverging interests of states sharing a common watercourse" (Mechlem 2003, p. 18).

In the light of these positive developments, it would be misleading to cling to a deterministic view which assumes that there is a direct causal link between water scarcity and violent conflict. At the same time, it would also be false to negate any linkage and to rule out the possibility of violent conflict becau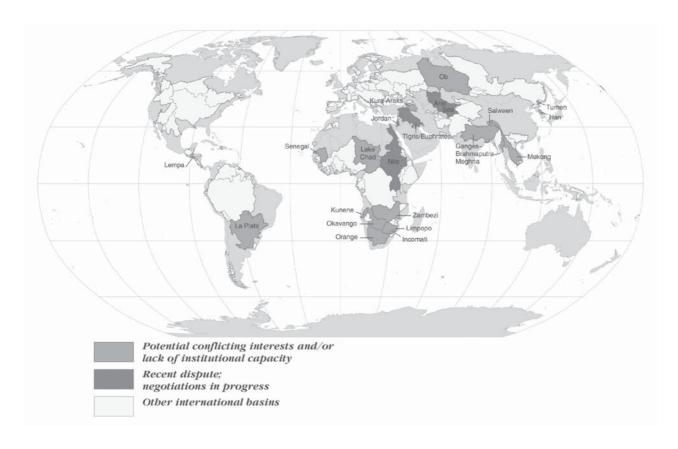se of and over scarce water resources. The danger of "water wars" may often be exaggerated, yet there is no doubt that water scarcity deriving from environmental degradation can and does lead to conflicts between and-probably even more important-within states.

At present the situation with regard to international river courses is characterized by a spectrum ranging between the extremes of-rare-best practice examples of coordinated and integrated management of international water courses, on the one hand, and of-also rare, albeit dangerous-cases in which violent escalation of water-related disputes cannot be ruled out, on the other. Although the BAR project is very critical about the 'water wars' thesis, Aaron Wolf and his colleagues identify certain "basins at risk" where an escalation of conflict in the near future (five to ten years) is more or less probable. They name the following cases: Aral Sea, Ganga-Brahmaputra, Han, Incomati, Jordan, Kunene, Kura-Araks, La Plata, Lempa, Limpopo, Mekong, Nile, Ob, Okavango, Orange, Salween, Senegal, Tigris-Euphrates, Tumen, and Zambezi (Wolf/Yoffe/Giordano (no date), p. 14; Wolf/Yoffe/Giordano 2003, p. 47).

In-between we find a majority of cases that are closer to the positive pole, cases which either do not need special attention (yet) because scarcity and environmental degradation are not a problem (so far) or because they are fairly settled or in the process of being settled, and some cases that are closer to the negative pole. Regarding the latter, one might speak of an open situation: the future might bring about a cooperative settlement or an escalation of conflict. These cases we might term "critical" (compared to the "settled" and the "dangerous" cases), and these critical cases are the ones which deserve special attention from a peace research and conflict prevention perspective. For at the end of the day, it depends on prudent politics whether conflict escalation or cooperation will prevail.

Figure 1: Status of cooperation in transboundary river basins

Source: *Wolf/Yoffe/Giordano 2002, p. 47*

Legend:
- Potential conflicting interests and/or lack of institutional capacity
- Recent dispute; negotiations in progress
- Other international basins

Integrated Water Resources Management

As was mentioned earlier, the present water crisis is of man's making. And man also has the capacity to cope with and overcome the crisis. It is not any 'naturally' given, 'objective' water scarcity 'as such' which is the problem. Rather, it is inadequate unsustainable modes of water usage. These have to be overcome, not least in the interest of conflict prevention. The lack of adequate institutions for water and conflict management is a more important cause of conflict than actual water scarcity.

This is a matter of the 'social adaptive capacity' of the actors involved. As the 'first-order resource' water is or is becoming scarce relative to demand (due to an increase of population, economic development or other factors), 'second-order resources' drawn upon from the societal context become decisive for addressing the problem. Not the scarcity of the 'first order resource' is the decisive problem, but the scarcity of 'second order resources' which allow for an intelligent and adequate adjustment to 'first order resource' scarcity. Those 'second-order resources' consist of a "set of potential 'adaptive behaviors' that are drawn upon from the broader social context by decision makers" (Ashton/Haasbroek 2002, p. 195) They can be used for the development of 'coping strategies' that allow management of the problems associated with the (scarcity of) first order resource.

In our times, the shift from a primarily supply-oriented paradigm to a demand-oriented paradigm is at the core of adaptive behavior. The supply-oriented paradigm which has to a large extent determined the adaptive behavior over the last decades has to be transcended. It focussed on developing ever new sources of water, relying on ever more complex and challenging technical engineering solutions to the problem of increasing water demand. This paradigm has become obsolete because it is inconsistent with the objectives of sustainable development. It has to be overcome by a new demand-oriented paradigm, which focuses on flexible and effective water allocation and management mechanisms and institutions. The prime task today is not to increase the water supply ever

more, but to prudently manage water demand in line with the overall aim of sustainable development.

The concept of integrated water resources management (IWRM) is an important element of such a novel approach. UNDP defines IWRM as a "cross-sectoral policy approach to responding to the growing demands for water in the context of finite supplies. Designed to replace the traditional, fragmented sectoral approach to water resources and management that has led to poor services and unsustainable resource use, IWRM is based on the understanding that water resources are an integral component of the ecosystem, a natural resource, and a social and economic good (…) Practicing IWRM means seeing watersheds, rivers, lakes, wetlands, coastal zones, and oceans as part of an interdependent system; recognizing the ways in which the hydrological cycle affects and is affected by land use; and aiming to create governance systems, policies, institutions and instruments that take these physical processes into account in planning, decision-making and implementation" (UNDP 2004, p. 11, see also WWDR 2003, p. 377). This concept is of special relevance for cooperation on international rivers. Taking the necessity of 'integrated' water resource management seriously means that states can no longer confine their management strategies to 'their' respective stretches of a given river, but have to collaborate with (all) other states in the catchment area. Hence IWRM by definition is an international cooperative endeavor in the 260-plus international river systems of the world. In all these basins, IWRM is or has to be transboundary.

Moreover, as the notion of 'integration' implies a holistic view of water (that is, not perceiving it merely as a commodity), taking the necessity of 'integrated' water resource management seriously also means that management strategies can no longer

be confined to technical and economic aspects, but have to take into account the ecological and social dimensions and even the cultural and spiritual meanings of water.

Water governance

Having said this, it is perfectly clear that IWRM cannot be conducted as a merely technical endeavor. Far from that, it is a highly political issue. It has to be put into the context of water governance. Again, we refer to UNDP for a definition: "The term water governance encompasses the political, economic and social processes and institutions by which governments, civil society, and the private sector make decisions about how best to use, develop and manage water resources" (UNDP 2004, p. 10). Hence "water governance is more than national-level water legislation, regulations and institutions, though these are important components. It also refers to the processes that exist to promote popular participation in designing water and sanitation systems and where decisions about those systems are made (in the capital city or the community itself) as well as how and by whom" (ibid.).

This conceptualization of water governance clearly demonstrates the highly political character of water issues. And it makes clear that it is not only a topic for governments and state bureaucracies. On the contrary, a host of other societal actors from civil society and the private sector are involved, too. UNDP particularly underscored 'popular participation' in development of, decisions on and implementation of water use and management. This makes water governance without doubt an utterly complex and complicated undertaking. A multitude of actors on several levels-from the local to the international-have stakes in the issue. They have distinct interests in (the use of) water, hold their specific views on (the value or meaning of) water and pursue particular goals with regard to the resource. These interests, perceptions and aims have to be dealt with in the political process, which

necessarily is a process of conflict and cooperation. The process itself as well as its results are: water governance. And in international river basins, this water governance has to be of a transboundary nature-which makes things even more complicated.

However, experience shows that even transboundary IWRM cannot be conducted merely on a state-to-state basis, as an intergovernmental endeavor. Rather, other societal actors, from the local to the international level, become involved too-whether the governments like it or not. This holds especially true under conditions where, on the one hand, state structures are relatively weak and state boundaries relatively porous and, on the other hand, non-state societal actors are relatively strong and transboundary relations relatively intense. That is the situation in many international river basins in the South. Hence (the process of) water governance in those river basins cannot be anything but multi-actor, multi-institutional, multi-level and transboundary. This by no means makes things easy. However, if one is really interested in good water governance, sustainable IWRM and conflict prevention there is no other way than to face the difficulties. The WWDR rightly states: "The water crisis is essentially a crisis of governance" (WWDR 2003, p. 370).

If this is true, every effort has to be made to establish good water governance. This paper will explore problems, experiences and options with regard to this aim. After all, conflict prevention is in the first place an issue of good water governance.

The context of natural resources and conflict or: Why water is a special case

As we have seen, water is hardly an issue with regard to traditional international, inter-state wars, apart from very special cases. But what about internal wars and major internal violent conflicts? The vast majority (more than 90 percent) of the wars of the post-World War II period and of today's violent conflicts are intra-state. Moreover, since the end of the confrontation between the Eastern bloc and the West, and within the context of intensified globalization, some strikingly new features of those violent conflicts have attracted considerable attention, not least the importance of natural resources. Natural resources figure prominently in many contemporary violent conflicts-and in the academic and political discourse about the causes and issues of contemporary violent conflict. So much so that the term "resource wars" has been coined in order to stress the importance of natural resources in causing and fuelling war. Obviously there are intra-state "resource wars", but are there intra-state wars over the resource water?

Resource Wars

"Resource wars" as defined by Michael Klare are "conflicts that revolve, to a significant degree, over the pursuit or possession of critical materials" (Klare 2001, p. 25). They are seen by some analysts as a new type of violent conflict (e.g. Klare 2001, Renner 2002). The natural resources that are in the center of the 'resource war' thesis are resources which are of value in the context of the global market economy, resources which can be traded on the world market. Conflict parties increasingly rely on the licit and illicit exploitation of and trade in such lucrative natural resources. Revenues from oil, diamonds, etc. are either utilized to sustain and equip one's armed forces (and thus prolong the violent conflict) or for the personal self-enrichment of the members of the elite of the conflict parties. In many of today's violent conflicts "there is a self-sustaining vicious cycle at work in which the spoils of resource exploitation fund war, and war provides the means and conditions that allow continued illegitimate access to these resources" (Renner 2000, p. 10).

Sierra Leone (diamonds), Angola (diamonds, oil), the Democratic Republic of Congo (copper, cobalt, coltan, etc.) are the most prominent cases, but not the only ones. In fact, almost one-third of all wars and major armed conflicts that where fought in 2004—13 out of 42—have a significant resource dimension, that is, resource exploitation caused, triggered, exacerbated and financed the conflict.

Figure 2: Wars and armed conflicts in 2004
Source: AKUF, 2004

Notes: A war is defined by AKUF, in accordance with the late hungarian peace researcher István Kende (1917–1988), as an armed mass conflict with the following characteristics:

- Fighting involves a minimum of two forces, at least one of which constitutes regular government forces
- There is a minimum of centralized organization of forces and fighting
- Fighint is frequent and recurrent

Armed conflicts do not fully correspond to these characteristics: usually fighting is infrequent and not continuous.

World region	Conflict	Start	Type	Resource related to conflict
Africa	Algeria	1992	War	
	Angola (Cabinda)	2002	Armed conflict	Oil
	Burundi	1993	War	
	Chad	1966	Armed conflict	
	Congo-Kinshasa (Ituri)	1999	Armed conflict	Gold, diamonds, coltan
	Congo-Kinshasa (Kivu)	1997	Armed conflict	Gold, diamonds, coltan
	Ivory Coast	2002	War	
	Ethiopia (Gambela)	2004	Armed conflict	
	Nigeria (Niger Delta)	2003	Armed conflict	Oil
	Nigeria (Scharia Conflict)	2004	Armed conflict	
	Senegal (Casamance)	1990	Armed conflict	
	Somalia	1988	War	
	Sudan (Darfur)	2003	War	
	Uganda (LRA)	1995	War	
Americas	Colombia (ELN)	1965	War	
	Colombia (FARC)	1964	War	Coca
	Haiti	2004	Armed conflict	
Asia	Afghanistan ('War on Terror')	2001	War	
	Afghanistan (Civil war)	1978	War	Opium
	India (Assam)	1990	War	
	India (Bodos)	1997	War	
	India (Kashmir)	1990	War	
	India (Maoists)	1997	War	
	India (Nagas)	1969	Armed conflict	
	India (Tripura)	1999	War	
	Indonesia (Aceh)	1999	War	Oil, natural gas
	Indonesia (West Papua)	1965	Armed conflict	Copper
	Iraq	1998	War	Oil
	Israel (Palestine)	2000	War	Water
	Laos (Hmong)	2003	War	
	Lebanon (South Lebanon)	1990	Armed conflict	Water
	Myanmar (Karen)	1948	War	Opium
	Nepal (Maoists)	1999	War	
	Pakistan	2001	Armed conflict	
	Philippines (Mindanao)	1970	War	
	Philippines (NPA)	1970	War	
	Thailand	2004	Armed conflict	
	Turkey (Kurds)	2004	War	
	Yemen	2004	War	
Europe	Georgia (Abkhazia)	1992	Armed conflict	
	Georgia (South Ossetia)	2004	Armed conflict	
	Russia (Chechnya)	1999	War	Oil

Several of the so-called "forgotten wars" in remote parts of the South are closely linked to the resource issue. The internal wars in Indonesia (Aceh: natural gas; West Papua: copper, gold), in Burma (timber, gems, opium) and in Papua New Guinea (copper) are cases in point. They are illustrative of the "resource curse" thesis: Abundance of natural resources does not lead to development and wealth, but to violence and societal breakdown.

"Protracted warfare over valuable resources, involving combat between government forces, warlords, insurgents, and various private interests, has become a conspicuous feature of the post-Cold War landscape. (...) Typically, wars of this type have erupted in poor and undeveloped areas, where the ownership (or control) of major sources of minerals or timber is a pivotal factor in domestic power struggles. The conditions that give rise to these conflicts-high external demand for resources combined with unrepresentative governments and ruthless political factions-are likely to persist in the years ahead" (Klare 2001, p. 210).

The exception to the rule

Interestingly enough, the resource water only figures twice in the list above, namely in the context of the armed conflict in South Lebanon and the Israel/Palestine war. In fact, those two conflicts are closely linked so that one also might say that water plays a role in only one single case of violent conflict, and that is Israel vs. Palestinians/neighboring Arab countries.

Furthermore, it is common knowledge that the conflict between the state of Israel, on the one hand, and its neighbors and the Palestinians, on the other hand, has a variety of causes and features, among which the conflict over water resources is only one,

albeit an important one that is often ignored in descriptions of the conflict. Israel/Palestine and their neighbors are situated in a particularly water scarce region where demand is growing much faster than supply and where water is a highly contested resource. Access to and the division of the groundwater of the West Bank and the Gaza Strip, the Wazani Springs on the Golan Heights, the waters of the rivers Jordan, Yarmuk and Litani are issues of contention. Israel is in conflict with Syria over the tributaries of the Jordan river, Banias and Hasbani rivers, which stem from the Golan Heights. The Litani river in southern Lebanon is another conflict issue. Israel is also in conflict with the Palestinians over the groundwater of the West Bank and the Gaza strip and over the lower reaches of the Jordan river. And Israel was in conflict with Jordan over the river Jordan and its main tributary, the Yarmuk river.

In the past, these conflicts led to directly water-related military skirmishes on several occasions (e.g. Israeli air raids against dam construction sites along the Banias and Hasbani rivers in the 1950s and1960s). And moreover, all the wars Israel fought over the last decades always were-among other things, of course-also wars over water. In fact, the BAR project found that nearly every incidence of military violence related to water issues had to do with the Israel-Palestine/Arab states conflict (see above). Hence, here we have the exception to the "no water wars" rule: Water contributing to the causes of war.

Apart from this, one must also mention that there has been and still is not only conflict over water between Israel and its adversaries, but also cooperation. To a certain extent this cooperation has been successful and has led to commonly agreed management endeavors, most importantly the peace agreement between Jordan and Israel of October 1994, which comprises highly detailed regulations on water issues (see Jaegerskog 2003 as an

overview) and which can be lauded as "one of the most creative water treaties on record" (Medzini/Wolf 2004, p. 203).

Water is a special resource

Why is it then that water obviously is a special resource which does not lend itself as easily to violent conflict as other natural resources? There is a relatively simple and straightforward answer to that: It is not of considerable economic value on the global market, and it is not (at least not easily) tradable. Therefore it cannot serve as a basis for economic power and political might.

By contrast, oil, for example, is a source of tremendous income for the elites of oil-rich states in the South and thus a major source of political power. Oil secures the survival of authoritarian regimes and thus is conflict-prone: Competing elites fight over it, and opposition from within the societies challenge the authoritarian regimes and fight for "their" share of revenues. Furthermore, oil gives rise to secessionist movements in cases where a central government controls the oil revenues and ignores the interests and needs of the regions of the country from which these revenues are derived. Then, the populace and elites of the oil provinces fight their respective governments in order to achieve control over "their" oil.

Oil in the context of civil wars can also be a source of income to sustain one of the conflicting parties (e.g. the Angolan government), and it can become a subject of contention in the context of war economies where conflicting parties are not so much interested in political aims but rather in economic gains. Oil then becomes a resource like diamonds or tropical timber that is commodified on the world market for personal enrichment.

On the other hand, water and the revenues derived from its exploitation neither lend themselves to the stabilization of authoritarian regimes nor to secessionist causes. Water is not a lootable and tradable commodity that might drive and sustain war economies. Diamonds, tropical timber, coltan and the like are resources with which conflict parties can make money in today's global economy-water is not. Water therefore does not play the prominent role that the aforementioned resources play in today's "resource wars" and war economies.

However, water comes into the picture again if one looks at the issues from another angle, namely the angle of environmental degradation as a cause of (violent) conflict. Water as a renewable resource can be the subject of environmental degradation (whereas non-renewables like oil, diamonds or copper cannot). The extraction and exploitation of non-renewables only too often negatively impacts on the renewables, not least water. Water-as well as land, forests, wildlife, air-is environmentally degraded in the process of oil production and mining. Be it that water resources are over-used for mining purposes, be it that water resources are polluted by oil spills or by the dumping of mine tailings and waste into nearby rivers. This kind of environmental degradation of the renewable resource water in the process of the extraction of non-renewable resources such as oil, diamonds or copper can lead to massive (violent) conflict as the affected local population depends heavily on clean, useable and safe water resources.

A typical case in point is the situation in the oil producing areas of the Niger delta in Nigeria. The massive violent conflicts that erupted there in the 1990s were in the first place not so much conflicts about the exploitation of the non-renewable resource oil but about the environmental degradation

of renewable resources (water, land, forests) in the course of oil extraction. It was only over time that the main motives of resistance changed from (environmentally substantiated) "grievance" to (pecuniary) "greed".

Hence developments in the Niger delta point to another important aspect of the resource-conflict relationship. Trying to make money from natural resources is not the only motive for insurgency. Large-scale environmental degradation caused by the extraction of natural resources such as oil, copper or timber often leads to violent resistance as the affected local communities lose the basis of their (subsistence) economy and see no other alternative than to engage in protest. This again only too often provokes violent response from the government side, thus triggering a spiral of violence that might even escalate into all-out internal war. In most cases, however, violence will stay locally confined.

Not war, but localized violent conflict

It is neither in the context of international wars nor in war economies that water plays a role. Nevertheless, water is-and even may become increasingly-a source of violent conflict. But (potentially) violent water conflicts are confined to the local context. In addition to the already mentioned cases where environmental degradation of water in the course of the extraction of non-renewable resources is a cause of-or at least contributes to-violent conflict at the local level, there are other constellations which are also conflict-prone. These include situations of scarcity in which conflicts are carried out between immediate water users who are highly dependent on the resource, especially if water is used for different purposes by different

groups, e.g. conflicts between nomadic pastoralists and sedentary farmers and irrigators.

Conflicts between different groups of pastoralists are also highly violence-prone. Hence it comes as no surprise that the most recent sad example of sub-national localized water-related violence are the clashes, raids and massacres in the Marsabit district of Northern Kenya close to the Ethiopian border between May and August of 2005. Competition over water in this semi-arid region between pastoralist communities from the ethnic groups of the Borana and the Gabra turned violent. Hundreds of people were killed and thousands displaced. The underlying cause of the violence are long-running disputes over water and pasture.

"Traditionally the area is endemic to conflicts between rival pastoral groups over resources. During the 1990s, the frequency and magnitude of conflicts has increased" (Edossa et al. 2005, p. 29-5), resulting in the death of hundreds of people (see also Tadesse 2002). The fact that the Borana and Gabra reside on both sides of the Kenyan-Ethiopian border complicates the conflict further. It is at the same time a local and a transnational conflict.

In a more indirect way, migration that is induced by lack of or competition over water might lead to conflict between local communities and the newcomers, especially when in-migration increases pressure on already scarce resources (Carius/Dabelko/Wolf 2004, p. 61).

Even incidents of violent conflict between central governments and modern water sectors, on the one hand, and local communities, on the other hand, might occur. Conflict issues might be large-scale irrigation schemes for agricultural (cash crop) production, hydroelectricity for mining and industrial purposes, all of which

might negatively impact on local communities who are often highly dependent on subsistence economies and the respective local water resources. Again, migration because of the (forced) resettlement of people affected by water-related infrastructure construction (large dams) might indirectly contribute to conflict.

The privatization of public water utilities to multinational enterprises from the North seems to be becoming a serious source of future localized water-related violence as the urban poor in the slums and squatter settlements of the big cities in the South cannot afford the rising water prices imposed upon them. An example of this kind of violence are the water riots that emerged following the privatization of the water supply in Cochabamba (Bolivia) in 2000 (Ratsch 2004).

To summarize: Water obviously is not a resource that lends itself as a cause for full-fledged international inter-state or large-scale intra-state wars, but rather localized violent conflict. This gives reason for concern, no doubt. However, one has to put this kind of water-related direct violence into perspective: The problem of direct violent conflict over water resources pales against the fact that 6,000 people, mostly children, are dying from water-related diseases every day (WWDR 2003, p. 4), that waterborne diseases kill 5 to 10 million people each year (Saleth/Dinar 2004, p. 5). It is the structural violence that expresses itself in these figures which is the much more pressing problem. Water is a matter of life and death beyond the issue of violent conflict.

The context of weak states or: Why water governance 'beyond the state'

The discourse on water conflicts and water governance has to be linked to another discourse that is prominent at present in international politics, security and development policy and peace research, namely the discourse on weak/failing states and new forms of violent conflict/'new wars'. The water crisis as a crisis of governance is linked to the weakness (or even failure) of state structures in the crisis regions of the South. Not only is violent conduct of conflict an effect of this weakness, but also poor water management. And the latter again can contribute to more violence.

Given the linkages between (deficiencies of) water governance, performance of states, and violent conflict/conflict-proneness, it is hypothesized that in order to overcome violent conduct of conflict-water-related and general-one has to overcome a state-centric approach and search for new forms of governance 'beyond the state' (i.e. the conventional model of the western state). Furthermore, it is hypothesized that the development of non-state centric modes of water governance can contribute not only to the prevention of water-related conflicts, but also to conflict prevention and peace building in general as 'good water governance' will positively influence the stability of societies, will strengthen societal institutions and enhance their legitimacy.

The discourse on weak states

The discourse on weak/failing states and violence posits that in the crisis regions of the South there is a link between violence/the violent conduct of conflict and the performance of states. Hence 'state weakness/failure' are put at the center of the analysis of the causes of violent conflict, focussing subsequently on 'state building' (or even 'nation-building') as the main element of conflict prevention and peace building (e.g. Fukuyama 2004).

However, the 'state failure' discourse that is currently so popular in research and policy, as well as the practical political fall-out from that discourse, namely the promotion of conventional 'state building' as the avenue for the control of violence and for peace building, seems to be too narrow and short-sighted. Only too often this approach has proven to be haphazard, unsustainable and flawed. One will have to search for alternative explanations for, and assessments of, the current status of statehood in the South and the related causes and forms of violent conflict. And resulting from that alternative non-state-centric approaches to water governance, the control of violence and peace building will have to be searched for.

State weakness is in general characterized by inadequate capacity to uphold law and order and to control violence, inadequate provision of basic services and public goods, inadequate means of resource generation and resource allocation, and as a consequence of these deficiencies: lack of legitimacy in the eyes of the 'citizens' of the state. Weak states hence are situated between full-fledged consolidated states of the OECD type on the one hand and failed or collapsed states on the other hand. The latter are characterized by (almost) complete breakdown of law and order and control, services and legitimacy.

However, one has to acknowledge that the modern western-style Weberian/Westphalian state, towards which both the state failure discourse and the state building policy are oriented, hardly exists in reality beyond the OECD world. Rather the 'actual existing states' in most parts of the world are hybrid political orders combining elements of the western model and elements stemming from the local traditions of governance and politics (Boege 2004, p. 26-35; Schlichte 2005, pp. 277-296).

'The state' is only one actor among several claiming to be in charge of the control of violence, and the state order is only one political order among a number of other orders claiming to provide security and frameworks for conflict regulation. Although state institutions claim authority within the boundaries of a given 'state territory', only 'outposts' of 'the state' can be found in large parts of that very territory, in a societal environment that is to a large extent 'stateless'. 'The state' has not (yet) permeated the whole of society. On the other hand the state's 'outposts' are infiltrated by 'informal' societal institutions that implement their own logic and their own rules within the state structures. In other words: the societal environment permeates the 'outposts' of the state in a way that distracts them from the ideal type of 'proper' state institutions, e.g. clientelistic networks infiltrate state positions, kinship ties determine who is in charge and how the 'outposts' actually operate(Trotha 2000; Schlichte and Wilke 2000).

On the other hand, the intrusion of state agencies impacts on non-state local societal orders as well. Customary systems of power and rule are subjected to deconstruction and re-formation as they are incorporated into modern statal structures and processes.

As local pre-state customary patterns and logics of political action mix and overlap with introduced modern state (and civil society) patterns hybrid political systems emerge.

Thus regions of weak statehood generally are places in which diverse and competing (perhaps mutually exclusive) logics of order and behavior overlap and intertwine: the modern logic of the 'formal' state (and the market), the pre-modern logic of traditional 'informal' societal order (and subsistence), the post-modern logic of globalization and international civil society with its abundance of highly diverse actors (NGOs, MNEs, international organizations, development aid agencies, mercenaries, …).

Hence 'statelessness' does not necessarily mean 'anarchic' or 'chaotic'. On the contrary: to speak of 'weak' states implies that there are other actors on the stage that are strong in relation to the state. These actors must be taken seriously, assuming that it is not enough simply to establish that a state is 'weak or has 'failed', but to thoroughly map the various actors and societal orders in circumstances of 'weak' and 'failing/failed' statehood (Boege 2004, p. 26-29).

Recognizing hybridity is the starting point for endeavors that aim at conflict prevention and peace building in general and at water governance in particular (we'll come back to that later, see chapter 5). The current problems of water governance can only be understood when hybridity is taken into account, expressing itself as it does in a multi-layered, multi-institutional and multi-actor setting with complex interlinkages. Positive mutual accommodation is a promising way to make use of hybridity. Modern attempts at 'state building', peace building-and water governance-that ignore or fight hybridity experience difficulty in generating effective and legitimate systems of violence control and water management.

The state as the problem

From what has been said so far it is clear that the state has not to be seen as a solution only, but also as a problem. The state is a solution as it provides (or promises to provide) 'law and order' and the appropriate institutions for the management of water and other natural resources; but it also poses a problem, as it has to (violently) expropriate competing societal entities of their respective means to exert and control violence and their customary approaches of natural resource management. Furthermore, one must not forget that state agencies exert violence themselves. The process of the establishment of the 'monopoly over the legitimate use of violence' against local resistance is in itself a violent endeavor, and the expropriation of customary ways of natural resource management and the introduction of modern state-regulated resource management is violence-prone, too.

The majority of states in the South have difficulty delivering effective governance and guaranteeing order to the whole population, especially to those groups that are spatially or economically peripheral to the center. To guarantee the minimal stability and order necessary for human existence is a particularly pressing problem in those states that have not yet secured precise borders and where the state apparatus lacks effective national reach. Porous border zones often generate sites of resistance to national political control. At the same time they are locations where non-statal forms of natural resource management/water management are still rather strong and intact, because state institutions have not yet reached out to and permeated those peripheral locations.

Weaknesses of state and of water governance are not only problems of structures, institutions and powers of enforcement and implementation, but also of perceptions and legitimacy. Legitimacy is at the core of the problematique of state weakness as well as of water governance. It is often forgotten that Max Weber's famous definition of the state-'monopoly over the legitimate use of violence'-includes both: enforcement power and legitimacy. All too often the state is weak because it has no legitimacy in the eyes of the people. People on the ground do not perceive themselves as 'citizens of the state', as 'nationals' (at least not in the first place). They define themselves instead as members of some sub-or trans-national, pre-statal societal entity (kin group, tribe, village, …). This has extraordinary consequences for their (dis)loyalty against the state and for the state's legitimacy. People are loyal to "their" group (whatever that may be), not the state. Legitimacy rests with the leaders of that group, not with the state authorities, and people do not obey the rules of the state, but the rules of their group. 'The state' is perceived as an alien external force. This perception of course also impacts on the state's authority and hence ability to introduce new modern forms of resource/water management.

Control of violence and of water-beyond the state

Contemporary violence and violent conflicts in the South are characterized by an entanglement of a host of actors, issues and motives (Boege 2004, pp. 84-87; Duffield 2001, pp. 138-139). They combine modern state-centered, pre-modern non-statal, traditional and post-modern trans-statal causes and forms. The state is only but one actor and only but one frame of violent activity among others. Contemporary violent conflicts hence are not only wars (over secession, over regime change) between the forces of the state and armed political opponents whose political aim is the establishment of an own state or overtaking the given state. Rather, they are also violent conflicts between pre-statal societal entities (tribes, clans, religious brotherhoods,…) over non-state-centric issues (land, water, honor, identity,…) in a non-statal framework, or conflicts between those entities and

the state over control and legitimacy. Or they are economic endeavors in which opposing groups fight-in a sub-national and/or transnational framework-not over state-related issues (power, secession, etc.), but over access to lucrative valuable resources which can be sold on the world market; this political economy of armed conflict has generated a wide range of new players such as warlords, mercenaries and mafia-type criminal networks which do not care about 'states' and 'borders' and 'sovereignty' and 'territorial integrity' at all.

Only too often these actors and issues are hopelessly entangled in contemporary violent conflicts. In short: Violent conflicts of this kind can be construed as hybrid sociopolitical exchanges.

Thus when it comes to conflict prevention and peace building, it is advisable to also apply a combination of modern and traditional actors and methods, customary and state-based as well as civil society institutions and instruments. In the same way as the analysis of violence and violent conflict has to overcome a state-centric perspective, so have the approaches for control of violence and non-violent conduct of conflict.

Almost the same can be said about the management of natural resources in general and water in particular. Again, a host of actors, issues and motives are involved. Modern state-centered as well as customary non-statal approaches overlap and ever more often post-modern trans-statal forces interfere, too. This overlap and entanglement is in itself conflict-prone. Again, however, this hybridity can become the starting point of new forms of water governance that apply a combination of modern and traditional actors and methods, customary and state-based as well as civil society institutions and instruments. We will come back to that later (see chapter 5). In the same way as the analysis of actual water

management on the ground has to overcome a state-centric perspective, so have the approaches for good water governance. And good water governance in turn is an important element of conflict prevention and peace building.

Given the hybridity of political order one has to search for ways and means of generating a positive mutual accommodation between state-based and non-state mechanisms and institutions. A central question is how to accommodate and merge modern state-based formal institutions, traditional customary informal local institutions and civil society institutions so that new forms of statehood or 'governance beyond the state' might emerge that are more capable and effective in the control of violence as well as in water governance than narrow Western models of the state.

This does not mean an all-out rejection of the notion of the state. The juridical importance of the state in the international realm is not to be questioned. States will continue to be the foundation of the international system. They are and will be indispensable for transboundary water governance. However, what has to be done is to confront the-outmoded-Western concept of the state in the domestic realm with some deeper awareness of what processes actually deliver order and stability and resource governance in large parts of the world. It is somewhat paradoxical that influential academic and political actors from Europe, for example, strongly advocate 'state-building' as the remedy for the problems of the conflict regions of the South when the importance of the conventional nation state has already been considerably reduced in favor of new supranational political forms (such as the European Union) and new modes of 'global governance'. One has to challenge the thinking which assumes that all societies have to progress through "Western" stages of state –society development. In the first place this means challenging the assumption

that weak incomplete states have to be developed into 'proper' Western-style states before they might proceed to new supranational political forms of governance (EU style, for instance). In contradiction to that we perceive the 'actual existing state' in the crisis regions of the South not in the perspective of 'incompleteness', not in the perspective of either 'not yet' properly built or 'already again' failed. Instead one has to analyze the potentialities (and deficiencies, of course) of 'actually existing states' in order to determine how 'hybridity' can become positive and utilized in conflict prevention, peace building and water governance.

The international level: Transboundary water management in Southern Africa

The following sections of this paper focus on Southern Africa when illustrating the problems, achievements, shortcomings and prospects of good water governance. This region has been chosen for several reasons. First of all, it is home to a number of conflict-prone international river hot spots. At the same time, promising approaches of transboundary IWRM can be found. Independent states are young, some of them have only recently emerged from protracted internal war or large-scale violent conflict. State structures are relatively weak. "The Westphalian 'map' of Southern Africa (…) is one of twelve small, mostly weak, juridical 'states' lacking the capacity to diversify their economies, develop their human resources, and to manage their natural environments" (Swatuk/Vale 1999, p. 367). On the other hand, customary societal institutions still play a major role in the life of large portions of the population, especially in the countryside. Statehood is doubly weak: states lack implementation and enforcement capacities, and they lack legitimacy in the eyes of their 'citizens'. And last but not least, a variety of external actors-donor agencies, international organizations, international NGOs-exert considerable influence on policies in general and water management in particular. Hence both states and rivers in Southern Africa are somehow 'intermediate': States are neither failed or collapsed states, nor are they full-fledged states as presented by the western (OECD) state model. The future direction of development is open: either

strengthening of state structures or weakening and decay-both are possible. And transboundary rivers in Southern Africa are 'intermediate', too: Neither dramatic war-prone nor settled and regulated, but 'critical', with the future direction of development open: either on the path of conflict escalation or comprehensive regulation. This constellation makes Southern Africa a rich source of experiences with regard to lessons learned as well as to the problems and deficiencies of transboundary water management.

International river basins in the SADC region: Some basic data

Although Southern African rivers are generally not mentioned when it comes to illustrate the "water war" discourse (from the African continent it is the Nile and only the Nile which is taken as an example of "water war" danger), the most comprehensive and encompassing research project on the issue of international waters and conflict-the already mentioned "Basins at risk" project-identifies not less than seven sub-Saharan water courses as potential hot spots of intensified tensions and possible conflict escalation, namely the Incomati River, the Kunene River, the Limpopo River, the Okavango River, the Orange River, the Zambezi River, and Lake Chad (Wolf/Yoffe/Giordano 2003, p. 14 and Wolf/Yoffe/Giordano 2003, p. 52). This means that almost half of the international water courses in Southern Africa are assessed as being 'at risk'.

Thirteen (or 15) transboundary rivers, shared by two or more states, can be found in the region of the Southern African Development Community (SADC), the number depending on the criteria of definition. The Zambezi River is the water course that has the most riparian countries, namely eight, and it is the river with the largest catchment area, approximately 1.4 million square kilometers.

Figure 3: International river basins and riparian states in the SADC region

Source: Ashton/Turton 2004, p. 5

River Basin	Riparian States
Buzi	Mozambique, Zimbabwe.
Congo	Angola, Burundi, Cameroon, Central African Republic, Congo, Democratic Republic of Congo (formerly Zaire), Rwanda, Tanzania, Zambia
Cuvelai	Angola, Namibia
Incomati	Mozambique, South Africa, Swaziland
Kunene	Angola, Namibia
Limpopo	Botswana, Mozambique, South Africa, Zimbabwe
Maputo	Mozambique, South Africa, Swaziland
Nile	Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda,
Okavango / Makgadikgadi	Angola, Botswana, Namibia (Zimbabwe, shares the Nata River sub-basin and is a riparian state of the Makgadikgadi basin, though not the Okavango sub-basin)
Orange	Botswana, Lesotho, Namibia, South Africa
Pungué	Mozambique, Zimbabwe
Rovuma	Malawi, Mozambique, Tanzania
Save-Runde	Mozambique, Zimbabwe
Umbeluzi	Mozambique, Swaziland
Zambezi	Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe

Water resources in parts of the SADC region are scarce and unevenly distributed. Large areas regularly experience severe droughts, and water availability is extremely variable (and often unpredictable) over time. Put simply: the North is water rich, whereas the South is water scarce.

The southern SADC members Republic of South Africa (RSA), Namibia and Botswana in particular suffer from water scarcity and depend to a large extent on water resources generated outside of their own territory (transboundary rivers and underground aquifers). The RSA in particular is dependent on international water resources; at the same time, it is the 'powerhouse' of the region. It is furthest developed economically, with the largest population and of considerable political weight. The RSA consumes 80 percent of the water resources of the region, but only approximately ten percent of those resources are generated within its boundaries (Henwood/Funke 2002). Swasiland, Lesotho and Zimbabwe are also dry SADC countries, whereas Angola, Zambia, Malawi and Mozambique have a humid climate. Estimates imply "that several Southern African countries will exceed the limits of their internally renewable and economically usable, land-based water resources before the year 2025" (Ashton/Turton 2004, p. 1).

About a third of the people in Southern Africa live in drought prone areas (Manzungu 2004, p. 3). In general, the region is characterized by a mismatch of water distribution and

population/industrial centers: "... the bulk of the region's water resources are found in the north, whereas most of its people and industrial development are found further south, particularly in South Africa" (Swatuk 2002a, p. 514). Population growth and various aspects of development (irrigation agriculture, industrialization, urbanization, changes in lifestyle, …) contribute to an increase in the demand for the quantity of water, and at the same time many of those aspects of development also contribute to the environmental degradation of the quality of the resource. Salination and sedimentation caused by irrigation, pollution caused by industrial assets and poor urban waste disposal systems, lack of sanitation facilities are cases in point. As a result, the primary causes of disease and poor health in the region are mainly water-related (Manzungu 2004, p. 4).

The vast majority of freshwater throughout Southern Africa (about 70% of all water used) is used by irrigation schemes, "most of whom are producing not food crops for local consumption, but cash crops for export" (Swatuk 2002a, p. 520). Already today the water resources of a number of transnational rivers are extensively used. River courses in the RSA are paved with dams in order to retain as much streamflow as possible. South Africa and Zimbabwe belong to the top ten countries with the largest number of dams in the world. Several international river basins in Southern Africa are approaching the point of closure, meaning that no more water is left to be allocated to human use, that all the water of the system is utilized already.

However, the availability of sufficient water is a fundamental prerequisite for economic growth in all the countries involved. Their developmental and economic options are closely tied to the availability of water. Interestingly enough, the four most developed nations in the region-Botswana, Namibia, RSA, Zimbabwe-"are also

those facing the greatest scarcity of water; they all share international river basins with other states, and they all face significant limitations to their future economic growth prospects as a result of looming water shortages" (Ashton/Turton 2004, p. 6). Technical solutions to the problem of water shortage are sought primarily by means of inter-basin water transfer schemes, that is the diversion of water from one basin to another. Twenty five inter-basin water transfer schemes can be found in the SADC region, mainly constructed in order to cope with the ever rising water demand of the RSA. They are technically highly challenging endeavors and at the same time highly problematic from an environmental point of view.

Inter-state conflicts

Under these circumstances competition for water will inevitably intensify and conflicts over access to and use of transboundary water courses are bound to arise. Secure access to water is an integral dimension of economic security, and economic security is perceived as a decisive aspect of national security. Thus water for the affected countries becomes a national security issue. It is imbedded in a political security complex which lends itself to potentially conflictive strategies. Taking into account the recent history of violent conflicts in the region, the most protracted of which-the civil war in Angola-came to an end only recently, there are even more reasons for concern.

However, open conflict with an inherent danger of violent escalation between states has so far only occurred very seldomly in Southern Africa. Mention has to be made of the following cases:

■ There was a major conflict between Botswana and Namibia with regard to the Sedudu/Kasikili Island in the Chobe River bordering the two countries. Both states claimed sovereignty over the island. The military of Botswana at one stage occupied the island. After a phase of protracted heated debate, mobilization of troops and intermittent threats of military action, both sides agreed to take the case to the International Court of Justice (ICJ) in the Hague. In May 1996 they jointly submitted their cases for territorial sovereignty of Sedudu/Kasikili Island to the ICJ, asking the court for a ruling. The ICJ finally decided in favor of Botswana. Namibia respected the ruling. Although the Chobe River figured prominently in this conflict, it was not really a conflict over water, rather it was a typical border dispute (cf. Ashton 2000, pp. 82-86; Swatuk 2002b, pp 152-153).

■ The same holds true for the conflict between Namibia and the RSA with regard to the Lower Orange River. Again, this was a territorial dispute over the precise position of the boundary line along the river bed and hence some islands in the river. It was solved by an agreement between the two countries that follows the general principles of international law which govern the position of boundaries located along river beds (cf. Ashton 2000, p. 88).

■ The only case of violence on a larger scale which was to a certain extent water-related had to do with the Lesotho Highlands Water Project (LHWP), the biggest hydropower project in Southern Africa and one of the world's largest infrastructure projects under construction today. The LHWP is a bilateral endeavor of the Kingdom of Lesotho and the RSA. It aims at harnessing the abundant water resources of the headwaters of the Orange River (called Senqu in Lesotho) in the highlands of Lesotho to the benefit of the water

scarce Gauteng region, the urban-industrial heartland of the RSA. Here the Lesotho water is urgently needed for the mining and industrial sector. A series of large dams and tunnels is being constructed in order to divert the water from the Lesotho highlands to Gauteng province. The first dam in the multi-dam scheme, the Katse dam, was completed in 1995, and the second dam (Mohale) was completed only recently (in 2004). The sale of water to the RSA constitutes Lesotho's major source of foreign exchange and state revenue. On the other hand, the LHWP has already had and is going to have considerable negative environmental and social effects in the Lesotho highlands and in downstream regions. Most severely affected are tens of thousands of Basotho people dwelling in rural mountain communities in the Lesotho highlands. Resettlements on a large scale have already been executed, with more displacements to follow. Conflict over resettlement, compensation issues, environmental protection and overall construction management between local communities and national and international NGOs opposed to the project, on the one hand, and government authorities, on the other hand, have accompanied the project from its very beginning (not least because of massive corruption scandals which shook the project tremendously). So far those conflicts have been conducted non-violently (apart from some incidents of police violence, which at one point in 1996 led to five workers being killed by police). However, in September 1998 the RSA and Botswana intervened militarily in Lesotho (on behalf of SADC), ostensibly to restore order in the face of internal power struggles. One main reason for this military intervention was to protect the LHWP and especially to safeguard the Katse dam, and

thus the water supply to the RSA. Seventeen people were killed in a firefight that took place between intervention forces and members of the mutinous Lesotho Defense Forces at the dam site, and many more died in the course of fighting in the capital, which was left in ruins. Some observers have called this military intervention Southern Africa's first water war. Even if this seems to be exaggerated (there were other more important causes for the intervention), one has to concede that the LHWP holds some potential for further conflict in the future: the additional planned project phases which are to be implemented in the years to come (until 2020) will impact massively on the whole region.

Hydropolitical hotspots

Hence it comes as no surprise that the LHWP ranks first on a list of "potential hydropolitical hot spots" of planned water projects that Piet Heyns, one of the experts most familiar with transboundary water resources in the SADC region, published in 2003. The other hot spots identified by Heyns are:

- "the completion of the Eastern National Water Career in Namibia by the proposed Rundu-Grootfontein pipeline component, starting on the Okavango River;

- the construction of the Batoka Gorge hydropower scheme between Zambia and Zimbabwe on the Zambezi River;

- the development of the "Congo River Project", where a pipeline will have to cross war-torn Angola and the Democratic Republic of Congo on its way to the water-deficient South;

- the development of the proposed Epupa hydropower scheme between Angola and Namibia on the Kunene River;

- the proposed Divundu hydropower scheme on the Okavango, as well as the sugar-cane irrigation project on the Zambezi in Namibia, the Zambezi-Bulawayo water-transfer scheme in Zimbabwe, and the Mpande Uncua hydropower scheme in Mozambique;

- the supply of water to Botswana and South Africa from the Zambezi" (Heyns 2003, p. 34)."

These hot spots are situated in the basins of the Okavango, Congo, Zambezi and Kunene rivers. One might also add to this list potential conflict over the water resources of the Save River between the upstream riparian Zimbabwe and the downstream riparian Mozambique and potential conflict with regard to the Limpopo between its upstream riparians (Botswana, RSA, Zimbabwe) and downstream Mozambique.

However, talking about potential hot spots and conflicts does not imply an automatism of inevitable violent escalation in each and every case. On the contrary, in many cases the potential dangers have already been identified and work is well under way to tackle the conflict potential so as to avoid violent escalation.

Figure 4: Shared river basins in Southern Africa

Source: Adapted from Ashton/Turton, 2006, BICC paper 46, p. 8

A multilateral framework for transboundary water management: The SADC water sector

In general, the 14 SADC member countries seem to be well aware of the potential dangers of the water issue. They have undertaken several important initiatives that are intended to make shared river courses a source of cooperation rather than a source of conflict. They have agreed in principle on integrated and cooperative management of transboundary river basins. This political commitment fits well into SADC's main overall goal, namely the mutually beneficial economic development of the member states via economic cooperation and integration.

The general framework for such cooperative endeavors is provided by the (Revised) SADC Protocol on Shared Watercourse Systems (1995/2000) and the establishment of the SADC water sector (established 1996). The SADC Water Protocol was the first co-operation protocol that was ever signed within SADC. This underscores the importance SADC members attribute to the role of water for their cooperation. For the availability of water resources is a necessity in order to achieve the overall goals of SADC, namely the attainment of an integrated regional economy on the basis of balance, equity and mutual benefit of all states and-in this context-poverty alleviation, food security and industrial development.

The original SADC Water Protocol was elaborated in line with the SADC Treaty which in its Article 22 (1) posits that member states should conclude protocols with regard to specific issues of common interest that support cooperation and integration; those protocols were to define objectives and scope as well as institutional mechanisms for cooperation in the respective issue areas. Among the issues identified were shared water resources. Discussions between member states about that topic started in 1991, and finally the SADC Water Protocol was adopted by the Heads of State in 1995 (cf. Ramoeli 2002, p. 104). In 1996, a dedicated Water Sector and a Water Sector Coordinating Unit (WSCU) were institutionalized in SADC. The Water Protocol became an instrument of international water law for the SADC in September 1998 after it had been ratified in terms of the provisions of the SADC treaty (Mozambique was the only country which did not ratify).

At the same time, the WSCU developed a Regional Strategic Action Plan for Integrated Water Resources Development and Management (RSAP-IWRM), which was adopted by all SADC member states in 1998. The plan is a component of the overall Regional Indicative Strategic Development Plan (RISDP), that is SADC's long-term strategy in the field of economy and development. It aims at fostering conditions which are conducive to a common management of regional water resources. RSAP shall provide for the prerequisites and institutions necessary for the implementation of water-related infrastructure and development. The RSAP was sub-divided into 31 single projects that address the main issues of IWRM. Those projects again were clustered into seven broader areas, one of which is river basin management.

RSAP-IWRM "is a unique experiment in international cooperation directed at achieving an integrated approach to water use development and management crossing national borders and river basin boundaries. It is the most advanced and comprehensive multi-country freshwater program in the world and it has no parallel on this scale anywhere else in the world" (Halcro-Johnston et al. 2004, p. 3).

However, one has to keep in mind that RSAP-IWRM projects are mainly funded by donors. Their success depends very much on donor commitment. "The procurement of funding for projects is therefore one of the principal determinants of the rate at which the program can be implemented. (…) The success of projects (…) is therefore to a large extent a reflection of the degree to which the projects are aligned with the changing agenda and priorities set by the international donor community. This fact, more than any other, has impeded the ability of SADC to implement a well coordinated and integrated program toward achieving the original goals of RSAP-IWRM" (Halcro-Johnston et al. 2004, p. 3).

The Revised SADC Water Protocol

At the time when the RSAP-IWRM was adopted and the Water Protocol was ratified, discussions about the revision of the latter were already under way. For after the UN Convention on the Law of the Non-navigable Uses of International Water Courses of 1997 had been adopted there was a general feeling among SADC members that the Water Protocol should be revised to bring it more in line with the UN Convention. The UN Convention was based on previous documents-in particular the Helsinki Rules on the Uses of the Waters of International Rivers of 1966-and contained core principles for the cooperative use of shared water systems, namely the principle of "equitable and reasonable use", the principle of avoidance of and abstention from doing "significant harm to other watercourse states" while using the river waters, and the principle of "optimal utilization and adequate protection of an international watercourse" (UN Convention 1997, articles 5, 7, 8). Those principles are subject to interpretation, of course (e.g., what is meant by "reasonable use"?). However, they provide guidelines for the behavior of states that can be applied to specific international river basins.

Hence the revision process of the original SADC Water Protocol was pursued against the background of the UN Convention. It led to the Revised Protocol on Shared Water Courses that was signed by the Heads of State of SADC member countries in Windhoek in August 2000. After the due ratification processes it entered into force on 22 September 2003 (this time Mozambique also ratified). Its overall objective is "to foster closer cooperation for judicious, sustainable and coordinated management, the protection and utilization of shared watercourses and to advance the SADC agenda of regional integration and poverty alleviation" (Heyns 2004, p. 4).

In contrast to the UN Convention of 1997, which lays down elaborate dispute settlement mechanisms (including negotiations, good offices, mediation, conciliation, and an annex on arbitration), the Revised Protocol addresses the issue of conflict resolution only very briefly and incidentally (Article 7 of the Revised Protocol). It states that "the parties shall strive to resolve all disputes regarding implementation, interpretation and application of the provisions of the Revised Protocol amicably, in accordance with the principles enshrined in the Treaty establishing SADC (...) The Revised Protocol stipulates further that disputes between states that are not settled amicably shall be referred to the SADC tribunal which is established under the SADC Treaty. According to the SADC Treaty, the decisions of the tribunal are final and binding" (Salman 2004, p. 36). These provisions have not been applied in practice so far.

Article 5 of the Revised Protocol provided for the institutional framework for its implementation and established a number of committees with varying functions. At the top of that structure was the Committee of Water Ministers whose main responsibilities were to oversee and monitor implementation of the Protocol and to deal with potential conflicts on shared watercourses. Below this were the Committee of Water Senior Officials, the Water Sector Coordinating Unit and the Technical Committee (cf. Salman 2004, p. 36). This rather elaborate institutional framework made up the SADC Water Sector.

However, the SADC Water Sector also became subject to major changes in the process of a general structural reform of SADC, which started in 2001 and which was finalized only recently. At the core of the reform was the concentration of the formerly 21 Coordinating Units at the SADC Secretariat in Gaborone, Botswana. Hence the WSCU was substituted by a Water Division as part of the Directorate of Infrastructure and Services at SADC Headquarters in Gaborone in the framework of the SADC Secretariat (April 2003). The Committee of Water Ministers was abolished. The structural reform was burdened by considerable frictions and communication problems, the impacts of which can be felt even today. The newly established institutions, namely the Integrated Committee of Ministers, which has to oversee and coordinate the various directorates, and the National Committees, which are responsible for implementation on the national level, are not functioning well yet. And the mandate, functions and procedures of operation of the new Water Division also still lack clarification.

In general terms, the main function of the Water Division is defined as overseeing and facilitating the implementation of the provisions of the Revised Water Protocol and the implementation of the RSAP-IWRM. "However, the function of the unit is sometimes to manage projects, sometimes to procure Implementing Agents (Ias) and to act as the facilitator/coordinator, and sometimes do both. This reflects well on the unit's ability to adapt to changing requirements but it demonstrates a fundamental weakness in administration, which undermines the confidence of international donors. Also, there is no defined hierarchy in the institutional structure of the professional staff within the unit, and most of the staff are appointed on short term contracts. Again, this creates uncertainty and a lack of confidence in the future of the unit" (Halcro-Johnston et al. 2004, p. 6). With the uncertainties surrounding the structural reform, the Water Sector became "a ghost of its former self. (The Water Division) is manned by a skeleton staff whose tenure of office is not clear and are poorly resourced. This compromises the vital coordination and facilitation role they should play (…) the WD itself seems to be in a state of paralysis as it has to both manage its present responsibilities, with limited resources, whilst planning and negotiating its future and stature in the restructured SADC" (Mushauri 2004, p. 16, 17).

In addition to the Revised SADC Water Protocol and the SADC Water Sector, several other bilateral and multilateral institutions regarding shared water courses have been established in the SADC region during the last years. At present, almost twenty agreements related to transboundary water courses are in place. They are of three different types: firstly, agreements establishing general water course commissions (e.g. the Permanent Water Commission of Namibia and the RSA); secondly, agreements concerning single water

courses (e.g. the Permanent Okavango River Basin Water Commission OKACOM of Angola, Botswana and Namibia); and thirdly agreements dealing with specific water course projects such as dams (e.g. the Lesotho Highlands Water Commission of RSA and Lesotho for the management of the LHWP) (Croll/Wirkus 2003, pp. 185-186). Four of the agreements of the second type that established river basin organizations (RBOs) were deliberately designed along the lines of and in accordance with the (Revised) SADC Water Protocol. These are: OKACOM for the Okavango, ORASECOM for the Orange-Senqu, LIMCOM for the Limpopo and ZAMCOM for the Zambezi. Those RBOs include all riparian states of the respective river systems. Hence they are a decisive step forward as they go beyond the hitherto common bilateral agreements. Notwithstanding that, all former agreements in the given river basins remain untouched and continue to exist in parallel to the new RBO agreements.

As the Water Division is to liaise and guide RBOs with regard to the implementation of the overall SADC water policy, the current difficulties faced by the SADC Water Division impact negatively on RBOs. After the restructuring of the Water Sector, "most RBOs are now caught-up in no-man's land without the necessary support" (Mushauri 2004, p. 16). Improvement of the WD's performance is a must for the advancement of existing RBOs and the establishment of new RBOs.

Last but not least, mention has to be made of overarching all-African institutions that have been established over the last few years with the task of coordinating water policies and water management. In 2002, the African Ministerial Council on Water (AMCOW) was founded. It is part of the African Union (AU) framework, and as an organ of all the African water ministers it is the most senior political institution dealing with water issues on the African continent. Prospects are good that AMCOW will

develop into an efficient and effective institution for the coordination of politics with regard to transboundary water resources in an all-African context. Besides AMCOW, the New Partnership for Africa's Development (NEPAD) has a water program, too. As part of its 'Short Term Action Plan for Infrastructure', NEPAD runs a 'Transboundary Water Resources Strategic Framework and Action Plan', closely cooperating with the African Development Bank (AfDB).

Hence a three-level structure of international institutions dealing with transboundary water issues is developing in Africa at present: Firstly, AMCOW/NEPAD on the continental level, secondly regional organizations such as SADC on the regional level, and thirdly multilateral RBOs. Southern Africa is covered by all these levels.

The SADC Water Protocol and the establishment of the SADC Water Sector and the other multilateral agreements and institutions point to the fact that in the Southern African context the question is not so much if there should be cooperation, but rather how it can be implemented. Of course, questions of implementation may give rise to conflicts, too. However, those conflicts are not conflicts about the resource as such, but conflicts about the ways and means to achieve a political goal that was commonly agreed upon, namely the mutually beneficial use of the resource.

Whereas conflicts about the resource as such are potentially dangerous and maybe even bear the potential of violent escalation, the latter can be confined to the technical and political sphere. Therefore in the SADC context it does not make much sense to talk about conflict or cooperation as mutually exclusive alternatives. Rather one has to talk about conflict and cooperation, the interesting development being that the conflict-side has been transformed: from conflict about the resource to conflict

about the ways of cooperation with regard to the commonly beneficial use of the resource.

River Basin Organizations in Southern Africa: Some success stories

Several bi- and multilateral general water course commissions, specialized river commissions, technical committees and development authorities responsible for the integrated water resources management of transboundary river courses have been set up by SADC member state governments. Most important are the so-called river basin organizations (RBOs) which (in the best case) comprise all the riparians of a given river basin and are responsible for the comprehensive integrated transboundary management of the basin's water resources. Their main functions can be described as: "Reconciling and harmonizing the interests of riparian countries; Technical cooperation; Standardization of data collection; Exchange of hydrologic and other information; Monitoring water quantity and quality; Submission for examination and approval of proposed activities, schemes or plans which could modify the quantity and quality of the waters; Development of concerted action programs; Enforcing agreements; Dispute resolution" (Savenije/van der Zaag 2000, p. 27).

The oldest RBO in the SADC region is the Permanent Okavango River Basin Water Commission (OKACOM) that was established in September 1994 by the Okavango riparians Angola, Botswana and Namibia. The Orange-Senqu River Commission (ORASECOM) was established in November 2000. Its members are Botswana, Lesotho, Namibia and the RSA. It was followed by the Limpopo River Commission (LIMCOM) that was established in November 2003 by Botswana, RSA, Mozambique and Zimbabwe. And the region is still
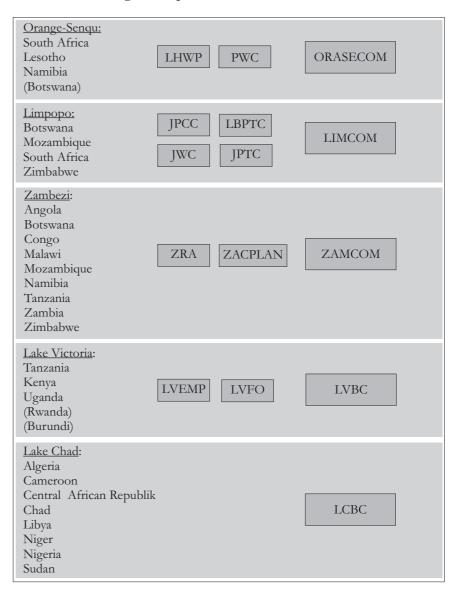
in the process of establishing even more institutions. The most recent endeavors in this respect are, the Incomati Maputo River Commission (agreement signed November 2003, participants: RSA, Mozambique, Swaziland), and the Nyasa Shire Basin Commission (agreement also signed in November 2003, participants: Malawi, Mozambique, Tanzania) (cf. Pazvakavambwa 2004, p. 6ff). The freshest success of institution building

is the establishment of the Zambezi Watercourse Commission (ZAMCOM) in July 2004, comprising all eight riparian states.

The RSA and Mozambique lead in numbers of membership of river basins institutions, they are member to 18 such institutions respectively. Swaziland is member to eight, Namibia and Zimbabwe to four international basin institutions.

Figure 5: River Basins, Members States and RBOs
Source: Wirkus/Böge, 2005, p.6

Although this looks like an impressive record at first sight, one has to keep in mind that the majority of international rivers in Southern Africa are still not covered by functional agreements, and that many of the institutions mentioned are rather new and weak. However, their existence is an indication of the political will to joint problem solution. All these institutions aim at the economic and social development of riparian states and the economic integration of SADC member countries. IWRM is intended to benefit all riparians and thus contribute to the prevention of water-related conflicts. Insofar institutionalization and IWRM do not only have economic and social dimensions but also security implications-even if the actors involved do not explicitly talk about that security dimension.

Most of the agreements and institutions mentioned above do not explicitly provide for elaborated dispute settlement mechanisms. However, their mere existence already implicitly has conflict preventive and mitigating effects. Thus a functional institutional approach obviously enables a proactive policy of conflict prevention. This is at least how practitioners from the region interpret the state of affairs on the ground: "The foundation for the prevention of conflicts therefore lies primarily in the development of functional institutional mechanisms to facilitate a dialogue between the parties about their internationally shared watercourses" (Pinheiro/Gabaake/Heyns 2003, p. 116).

The conflicts that nevertheless do actually still occur are not about the resource as such, but about the implementation of the agreements and institutions which have been commonly set up. And without doubt there are a host of problems, deficiencies and shortcomings associated with implementation. Only too often the agreements and commissions look impressive with

regard to their "paper form", but when it comes to actual activities, not much can be seen on the ground. It seems that, for the time being, national water policies and strategies are still more important than common integrated policies and strategies on the river basin level.

At present, the challenge for Southern African countries is to harmonize their respective national water legislation, plans and policies, which are based on very similar principles anyhow, so that the mutually agreed goal of IWRM in the river basin context can really be achieved. This is emphasized by Ashton and Turton: "A central factor in all regional or transboundary agreements between countries is the degree to which the policies, legislation, resources and management practices of each country can be aligned and implemented in harmony with those of its neighbors" (Ashton/Turton 2004, p. 10).

Policymakers are well aware of this necessity, and work has started on the "joint development and deployment of a consistent regional set of water resource management strategies (that) would also promote and enhance political and economic stability across the sub-continent" (ibid, p. 12).

In the following sections, three RBOs will be presented in more detail in order to provide an impression of the problems and approaches of formal institutionalized intergovernmental cooperation in transboundary river basins in the SADC region.

The Orange-Senqu River and ORASECOM

The Orange river has a length of approximately 2300 kilometers and a catchment area of almost one million square kilometers. Riparians are Lesotho, the RSA and Namibia; Botswana covers part of the catchment area (10 percent; RSA 60 percent, Namibia 25 percent and Lesotho 5 percent). The northeastern highlands area of Lesotho is rich in precipitation

(2000 mm per year), whereas the rest of the basin is arid (400 mm per year).

The mean annual runoff (MAR) of the Orange river is 11,000 million cubic meters (MCM); 55 percent thereof originates in the RSA, 41 percent in Lesotho, four percent in Namibia and (almost) nothing in Botswana (Heyns 2003; Heyns 2004). Major tributaries are the Senqu river in Lesotho, the Vaal river in the RSA and the Fish river in Namibia. The Vaal is the major source of water for the Gauteng region in the RSA. This is the economically most developed region in the RSA and in sub-Saharan Africa in general. Forty percent of the RSA's population live in Gauteng, and 85 percent of the RSA's energy is produced here.

Thirty seven large dams can be found in the basin, most of those (24) on the territory of the RSA. The largest dams are the Gariep dam in the RSA and the Katse dam in Lesotho. Gauteng's agriculture, mining, industry and cities demand water in quantities that cannot be provided by the Vaal river alone. Hence inter-basin transfer schemes were built, connecting the Vaal to several other rivers which were tapped for the water demand of Gauteng. Most of the water is needed for irrigation. Today approximately 800,000 hectares are irrigated in the RSA, 300,000 hectares of which are situated in the Orange basin. Several big cities and mining projects consume large amounts of water, too.

The Lesotho Highlands Water Project (LHWP) was established as a solution to the water problems of the Gauteng region. This project goes back as far as 1986. It comprises a complex system of several large dams and water transfer schemes, making it one of today's biggest water infrastructure projects worldwide. The LHWP agreement of 1986 between the RSA and the Kingdom of Lesotho is by far the most comprehensive and most detailed water-related agreement in Africa (Turton 2004, p.

274), and several rather sophisticated organizations are responsible for project overview and implementation (Lesotho Highlands Water Commission (LHWC), Lesotho Highlands Development Authority (LHDA), Trans-Caledon Tunnel Authority (TCTA)). However, the LHWP was confined to only two Orange riparians, and it was and still is plagued by a host of political, social and environmental problems which at times have led to serious conflicts (see above). With its originally exclusively economic-technical focus, the LHWP does not represent today's 'state of the art' in transboundary IWRM.

Therefore it can be considered a positive step forward that in the meantime the LHWP and its institutional framework have been linked to the newly established ORASECOM. This RBO follows the principles of integrated and sustainable water management by including all riparians. However, ORASECOM does not substitute former bilateral agreements, such as the LHWP agreement.

ORASECOM is the result of lengthy negotiations among riparian states. According to the agreement that establishes ORASECOM, it is an international organization that has legal personality. The agreement acknowledges the Helsinki Rules, the 1997 UN Convention and the SADC Water Protocol. Parties to the agreement are obliged to exchange hydrologic data (ORASECOM Agreement article 7,4) and to notify "any project, program or activity with regard to the River system which may have a significant adverse effect upon any one or more of the other Parties" (ibid., article 7,5). Parties commit themselves to the protection of the river system. ORASECOM functions as the consultative body of riparians with regard to issues of development, usage and preservation of water resources in the basin (ibid., article 4). ORASECOM is authorized to conduct respective feasibility studies.

Dispute resolution has to be strived for by negotiations in the commission. In case this is not successful, disputes will be transferred to the SADC Tribunal as the authoritative dispute resolution mechanism. The Tribunal's decisions have to be accepted "as final and binding" (ibid., article 8).

The organizational structure of ORASECOM is rather weak. At present there only exists a council, comprised of the delegations of member states. Each delegation has three members (ibid., article 2). Delegations meet twice a year. Decisions are taken by consensus (ibid., article 3). Delegations are assisted during the meetings by a so-called task team (consultants, donor representatives et al.). Furthermore, the council may establish working groups and engage experts and consultants if this is deemed necessary (ibid., article 6). All parties have expressed the desire to establish an ORASECOM secretariat. Such a secretariat is to be established in the course of the year 2005. It will be based in Pretoria, RSA.

ORASECOM's main task at present is the elaboration of an IWRM plan for the Orange-Senqu basin. This plan shall be ready in two to three years' time.

ORASECOM is financed by the water ministries of the member states. Furthermore, it receives financial assistance from Germany and France and in the context of the EU Water Initiative (EUWI). The Orange-Senqu river basin/ORASECOM is one of the five EUWI assistance regions, with Germany as the steering partner. ORASECOM has tabled a "portfolio of projects" to the EU, "relating to the harmonization of the legislation in the different countries, the study of transboundary aquifers, water demand management, a basin information system, capacity building and stakeholder participation" (Heyns 2004, p. 9). Germany's Gesellschaft fuer Technische Zusammenarbeit (GTZ) provides assistance with regard to the elaboration of the IWRM plan,

the establishment of a permanent secretariat and other measures of capacity building.

The Limpopo and LIMCOM

The Limpopo is almost 1800 kilometers long. Riparians are Botswana, Mozambique, Zimbabwe and the RSA. The catchment area covers approximately 415,000 square kilometers, of which the RSA holds 44 percent, Mozambique 21 percent, Botswana 20 percent and Zimbabwe 15 percent. The MAR is 7330 MCM. The RSA contributes 66 percent, Zimbabwe 16 percent, Mozambique 12 percent and Botswana six percent to the MAR. The average annual precipitation in the catchment area is only 500mm.

The Limpopo's water resources are intensively used for irrigation, industry and urban demand. Next to the Orange River, the Limpopo is the economically most important watercourse in Southern Africa. Approximately 14 million people live in the basin, 43 percent of whom are urban dwellers, most of them in the RSA. This makes the Limpopo basin one of the most densely populated and urbanized basins on the African continent.

Many dams can be found in the basin, 44 of which have a storage capacity of more than 12 MCM (Heyns 2003, p. 14). Twenty eight of those are situated at Limpopo tributaries in the RSA. The biggest dam is the Loskop dam at the Olifants River with a storage capacity of 348 MCM.

The RSA's economy is highly dependent on the water resources of the Limpopo system, in particular the industrial heartland of Gauteng province. Almost 200,000 hectares are used for irrigation agriculture in the RSA's part of the basin, an additional 50,000 hectares in the other riparian countries.

The Limpopo system receives additional water from other basins

(Orange, Incomati, Maputo) via inter-basin transfer schemes. Botswana has only recently started operation of the Letsibogo dam at the Motloutse tributary with the aim of improving the water supply of its capital city Gaborone by means of a North-South Carrier.

Densely populated eastern Botswana is highly dependent on Limpopo water. The downstream riparian Mozambique is concerned with regard to further diminishing water flows. Reductions in water flow would negatively impact on Mozambique's large irrigation projects in the south of the country and on the Massingir dam at the tributary Elefante (Heyns 2003, p. 15). As there are plans in all the upstream riparian countries for even more extensive use of the Limpopo water, Mozambique's concerns are well founded (Pereira/Vaz 2000). Furthermore, the water quality is negatively affected because of industries and mining projects upstream. An integrative and cooperative approach to transboundary water management is desperately needed in order to avoid future conflicts.

Therefore the establishment of LIMCOM in 2003 is an important step in the right direction. LIMCOM's predecessor, the Limpopo Basin Permanent Technical Committee (LBPTC) had already been established in 1986. However, because of the political tension in Southern Africa at the time that Committee only became operational almost a decade later, after the collapse of the Apartheid regime in the RSA. Riparians then decided to establish a full-fledged RBO. However, negotiations regarding such an RBO in the late 1990s led nowhere. There were considerable frictions and differences between the riparians. Mozambique, in particular, as the downstream riparian, felt discriminated and overwhelmed by the well-established RSA-Botswana connection. It was only when the SADC Water Sector intervened and the SADC Water Protocol was used as the source of reference that decisive

progress could be made. An additional push was provided by the Rio Earth Summit in 2002. On this occasion, the SADC Water Sector and LBPTC agreed on the elaboration of a joint action plan to combat water-borne diseases in the Limpopo river basin.

Finally, after years of delay, the Agreement on the Establishment of the Limpopo Watercourse Commission was signed by the riparian states on 27 November 2003 (LIMCOM Agreement). According to this agreement, LIMCOM becomes the successor of LBPTC (LIMCOM Agreement, article 12). Other existing institutions continue to exist, but have to be harmonized with the LIMCOM Agreement. The agreement explicitly acknowledges the 1997 UN Convention and the SADC Water Protocol. Riparians commit themselves to the basic principles of those documents: equitable and reasonable utilization, sustainable development, intergeneration equity principle, prevention principle and transboundary impact assessment principle (ibid., article 3).

LIMCOM is an international organization with legal personality. It is a consultative body with the aim of development, utilization and conservation of the water resources of the Limpopo (ibid., articles 3 and 7). Advise shall be given on the following matters: "measures and arrangements to determine the long term safe yield of the water (…) the equitable and reasonable utilization of the Limpopo to support sustainable development in the territory of each Contracting Party (…) all aspects related to the efficient and effective collection, processing and dissemination of data and information (…) contingency plans (…) investigations and studies (…)" (ibid., article 7).

LIMCOM's main organ is the council (ibid., article 4). The council consists of the delegations of member states. Each delegation has three permanent members. The council meets twice a year. Decisions are taken by consensus. The council may establish working groups, appoint commission

consultants and technical experts and nominate administrative service providers. A permanent secretariat can be established.

Article 9 of the agreement provides for dispute resolution. Disputes shall be settled by negotiations of the contracting parties. If the parties to the dispute have not arrived at a settlement within six months, "the dispute may, unless the parties to the dispute agree otherwise, be brought before the Tribunal" (ibid., article 9)-that is the SADC Tribunal. The parties shall "accept the decision of the Tribunal as final and binding" (ibid.).

The German development agency GTZ (Gesellschaft fuer Technische Zusammenarbeit) played a major role in the establishment of LIMCOM. Similar to ORASECOM, the GTZ assisted in the negotiation process and provided juridical advice. Furthermore, EUWI assists LIMCOM with regard to resources assessment, modeling and data exchange.

It is to be expected that LIMCOM will follow the example of ORASECOM in its further organizational development.

The Zambezi and ZAMCOM

The Zambezi River has a length of approximately 3000 kilometers. Its catchment area comprises 1.4 million square kilometers. This makes the Zambezi the fourth largest river system in Africa. There are eight riparians-Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. Zambia has the greatest share of the catchment area, namely 41 percent. The figures for the other riparians are: Angola 18 percent, Zimbabwe 16 percent, Mozambique 12 percent, Malawi eight percent, Tanzania two percent, and Botswana and Namibia 1.5 percent each. Malawi and Tanzania are not direct riparians, rather they are connected to the Zambezi river via Lake Malawi and the Shire River. The MAR of the Zambezi is 94,000 MCM. Precipitation in the catchment area varies between 600 and 1200 mm/year,

with Angola and Zambia having the highest rainfalls and Mozambique and Zimbabwe being the driest countries. The catchment area is home to more than 40 million people, most of them live in Malawi (31 percent), Zimbabwe (29 percent), and Zambia (22 percent). Water resources are used for households, irrigation, mining, hydropower and-to a lesser extent-industry. At present approximately 200,000/250,000 hectares of arable land are under irrigation (Shela 2000, pp. 69-70; Heyns 2003, p. 28). Twelve large dams can be found in the river basin. The biggest dams are the Kariba dam (Zambia and Zimbabwe) and the Cahora Bassa dam (Mozambique).

The high population growth and comprehensive development plans will put pressure on the water resources of the basin. The upstream riparian Angola, in particular, might be inclined to use the waters of the Zambezi more intensely now that the internal war that had made water development projects impossible is over. The water-scarce upstream riparians Namibia and Botswana also have ambitious plans. Namibia wants to extend its sugarcane irrigation projects in the Caprivi Strip considerably, and Botswana wants to use Zambezi water for its capital Gaborone by building a pipeline (Heyns 2003, p. 28). Zimbabwe wants to supply the major city Bulawayo with Zambezi water, too. At the heart of the Bulawayo Water Division Project/Matabeleland Zambezi Water Project will be a 450 kilometer pipeline carrying water from the Zambezi River to Bulawayo. Densely populated Malawi is planning irrigation projects at the Shire River. Last but not least, the non-riparian RSA plays a role, too. The RSA is interested in using Zambezi water for the supply of the Gauteng region by means of an inter-basin water transfer scheme. It is envisaged to build a 1200 kilometer pipeline from the Caprivi Strip through Botswana to Pretoria.

Although there is still an abundance of water in the Zambezi basin, several water-related conflicts can be found. "In recent years, a number of serious

conflicts have been observed in the Zambezi basin" (Chiuta 2000, p. 143). Chiuta mentions:

■ conflict between Zambia and Zimbabwe over Zimbabwean plans to build a dam in the Batoka gorge;

■ conflicts in the East Caprivi region between "tourism facility operators and fishing communities" (Chiuta 2000, p. 143);

■ conflicts between Namibian and Botswanian riparians of the Chobe river about different forms of usage (tourism versus agriculture);

■ similar conflicts between Zimbabwe and Zambia with regard to Lake Kariba (tourism versus fisheries);

■ conflicts between riparians from Malawi and Mozambique about the Lower Shire;

■ conflicts between Namibia and Botswana about border demarcation in Lake Liambezi.

Moreover, "localized conflicts are found in all the riparian states and these are mostly caused by pollution, dam and tourism developments that have dispossessed the local communities of their access rights to the water resources" (ibid., p. 146).

How 'serious' these conflicts really are, might be put into question. Currently, violent escalation seems to be rather unlikely. However, several riparians already suffer from water scarcity, and only Angola and Zambia will have secure water resources in the future. Hence escalation of water conflicts in the future cannot be ruled out. Transboundary IWRM is a prerequisite for sustainable development and conflict prevention in the Zambezi River basin.

Interestingly enough, however, cooperation with regard to the longest and most important river

in Southern Africa is clearly lagging behind. Respective efforts and planning processes were and are characterized by delays. This has to do with the relatively large number of riparian states. It is easier to agree on transboundary IWRM with regard to a river shared by only two riparians than on a river with eight riparians.

For a long time there were only bilateral arrangements on the Zambezi River. The most important of those concerned the establishment of the Zambezi River Authority (ZRA) between Zimbabwe and Zambia in 1987. The ZRA is mainly charged with the joint management of the mighty Kariba dam. Bilateral agreements like the ZAR were perceived as inadequate by those riparians who are not party to them. Therefore a common understanding was reached that a basin-wide regime is required. Although riparians agreed upon the Action Plan for the Environmentally Sound Management of the Common Zambezi River System (ZACPLAN) in 1987, this did not bring a breakthrough in this regard. For the so-called Action Plan in fact was nothing more than a rather loose and non-binding framework program. There was no organizational structure put in place. No financial commitments were made. Only few limited projects were undertaken by some riparians, mostly on a bilateral basis.

The establishment of a real river basin organization took a long time. Respective negotiations were characterized by delays, frictions and setbacks. It was only after 1996 that-with the assistance of the SADC Water Sector and the ZRA-serious efforts were undertaken. National Steering Committees were established and were given the task of drafting an agreement for an all-encompassing Zambezi Commission. However, that meant balancing the interests of eight actors. The decisive phase of negotiations commenced in 2002. Since then there were four rounds of talks, steered by the SADC Secretariat. Matters of contention were the structure of the

RBO, personnel, finances, location, relation of already existing institutions to the new commission (Tumbare 2002, p. 104). However, the Agreement Establishing the Zambezi Watercourse Commission was finally signed on 13 July 2004. Aims of the new Zambezi Watercourse Commission (ZAMCOM) are "to promote the equitable and reasonable utilization of the water resources of the Zambezi Watercourse as well as the efficient management and sustainable development thereof" (ZAMCOM 2004, article 5). Functions of ZAMCOM are defined as:

" (a) collect, evaluate and disseminate all data and information on the Zambezi watercourse (…)

(b) promote, support, coordinate and harmonize the management and development of the water resources of the Zambezi Watercourse;

(c) advise Member States on the planning, management, utilization, development, protection and conservation of the Zambezi Watercourse as well as on the role and position of the Public with regard to such activities and the possible impact thereof on social and cultural heritage matters; (…)

(e) foster greater awareness among the inhabitants (…);

(f) co-operate with the institutions of SADC as well as other international and national organizations where necessary;

(g) promote and assist in the harmonization of national water policies and legislative measures (…)" (ibid.).

The treaty explicitly acknowledges the 1997 UN Convention and the (Revised) SADC Water Protocol as its "basis" (ibid., preamble). Accordingly, member states commit themselves to some basic principles, namely sustainable development, sustainable utilization, prevention of harm, inter-generational equity, assessment of trans-frontier impacts, co-operation and equitable and reasonable utilization (ibid., article 12).

ZAMCOM is an international organization with legal personality (ibid., article 4). ZAMCOM consists of three organs-a council of ministers, a technical committee and a secretariat with an executive secretary. The ZAMCOM treaty explicitly provides for conflict prevention and dispute resolution. Article 5 deliberately states that ZAMCOM shall advise member states "on measures necessary for the avoidance of disputes and assist in the resolution of conflicts among Member States with regard to the planning, management, utilization, development, protection and conservation of the Zambezi watercourse". Article 21 provides for a mechanism for the settlement of disputes: In the event of a dispute, parties to the dispute "shall expeditiously enter into consultations and negotiations in the spirit of good faith and equity with a view to arriving at an amicable settlement". In this stage the council of ministers may "where appropriate, make recommendations to the parties". If a settlement of the dispute cannot be reached, the dispute may be brought before the SADC Tribunal. Disputes between ZAMCOM and a member state shall also be referred to the Tribunal for decision.

Each member state is obliged to notify the ZAMCOM secretariat on "any programme, project or activity with regard to the Zambezi Watercourse". In case such a project should cause a dispute with another member state, "such Member States shall, on the request of any of them and utilising the good offices of the Commission, promptly enter into consultations and negotiations with a view to arriving at a settlement of such dispute" (article 16). During the course of the consultations and negotiations, the party planning the project shall "refrain from implementing or permitting the implementation" of the project "for a period agreed upon by the Member States involved or, failing such agreement, for a period determined by the Commission" (ibid.).

The ZAMCOM agreement leaves former agreements (e.g. on ZAR) untouched: such agreements, however, shall be harmonized with the ZAMCOM agreement (article 18). "Thus, old and new approaches to water resources management coexist in a single basin, signalling the uneasy relationship that exists throughout the SADC region between old ideas of partial, exclusivist 'modernisation' and new ones of holistic, inclusive 'sustainable development'" (Swatuk 2002a, p. 518).

Stakeholder participation, inclusion of civil society and the public did not play a role in the establishment of ZAMCOM (the same holds true for ORASECOM and LIMCOM). However, article 16 of the ZAMCOM agreement states: "Member States shall ensure that the Public in an area likely to be affected by a proposed programme, project or activity are informed thereof and are provided with the opportunity for making comments thereon or objections thereto as well as on the transmittal of such comments or objections to the Commission". It is planned to guarantee stakeholder participation via a project steering committee and national steering committees. It remains to be seen, if and how and to what extent this will really be implemented. One of the major shortcomings of ZAMCOM and the other RBOs in Southern Africa such as LIMCOM and ORASECOM so far is their narrow, purely inter-governmental character. This state-centric, inter-governmental approach does not sit well with societal realities on the ground in a region where non-statal institutions play an important role with regard to water governance and water-related conflict prevention.

The local level: Customary water management in Southern African communities

In this chapter we will leave the world of formal international water institutions and international cooperation and turn to a different world that nevertheless exists at the same time in the same places, namely the world of informal local water management that is much closer to the people who are the water users on the ground.

The UN WWDR states that in many developing countries "local regulations, customary laws and traditional rights assign rights and responsibilities that differ from state regulations" (WWDR 2003, p. 374). Although there is a rich tradition of customary water management on the ground and indigenous water management arrangements are still very important in the local context, local non-state actors and their customary ways of water management and conflict resolution are widely ignored by the state agencies and international organizations occupied with modern IWRM. Customary law , so-called 'informal' institutions and traditional authorities play a decisive role in water management on the ground in regions with weak statehood and a weak formal economy.

The relationship between local, customary, 'informal' water management and modern, statal, formal water management is uneasy. Only too often they run in parallel, compete or even conflict with each other, thus adding further conflict potential to already difficult circumstances. "Failure to recognize the existence and resilience of customary practices, and to take them into account in 'modern' water resources legislation, is a recipe for social tension" (Burchi 2005, p. 32-1). On the other hand, however, there seem to be options for positive accommodation, for combining customary and modern approaches. In fact, "… some form of accommodation between formal and informal rights regimes is necessary" (Hodgson 2004, p. 59).

Legal pluralism

In order to achieve good water governance it is important to take the existence of legal pluralism as a starting point . Modern state actors have to be willing to adapt and integrate customary elements into formal water management. By doing so, improved forms of water governance can be established that could contribute to the shaping of new forms of statehood and non-state-centric forms of governance in general. In other words: New forms of participatory water governance further state building in a region with weak statehood, and at the same time participatory water governance opens avenues to forms of general political governance that well transcend the state-centric approach of government.

Of course, one has to avoid any kind of romanticism: customary law and traditional structures are not per se better than formal statutory law and modern state institutions; "customary law frequently reflects unequal power relationships in local communities" (Hodgson 2004, p. 57). It might favor the community leaders and disadvantage the weak, and as most traditional communities in Southern Africa are patrilineal/patriarchal, women only too often have a minor status and fewer rights, which also holds true with regard to rights of access to water and other natural resources.

It would be too simplistic to assume that local communities are homogenous and all community members share the same interests and norms. Rather, communities are heterogeneous with regard to gender, age and other differences, interests differ, distribution of power and wealth matters, and traditional norms only too often are questioned (and violated) by community members under the influence of modern ideas and interests-for the better or the worse (Bruns 2005, p. 13-2). Local custom favors members of the local elite, and customary approaches to water management may reproduce inequalities. Mohamed-Katerere/van der Zaag for example mention the case of "the manipulations of a traditional leader who used traditional imagery and spiritual guise to secure water for himself and other uplanders to the disadvantage of downstreamers" (Mohamed-Katerere/van der Zaag, p. 14). Hodgson is perfectly right when stating: "Another risk regarding customary law is that it is often taken to be inherently democratic, egalitarian, equitable and therefore to deserve support in contrast to formal law and regulations issued from distant capitals, which are not. This kind of romantic view is false" (Hodgson 2004, p. 57). This has to be taken into account when referring to tradition and customary ways.

Customary law varies considerably from community to community. Unfortunately the situation is not that simple that there is the formal statutory law, on the one hand, and "the" customary law as a single unified body of norms, on the other. Rather, customary law is localized and hence one is confronted with a myriad of different customary laws. Furthermore, there is much contention about how the-unwritten-norms of customary law should be applied in practice. Customary law is far from being static, it changes and adapts to new

circumstances, not least influenced by statutory law. Moreover, the extent to which customary law is still applied and the forms of accommodation of modern and customary law vary from place to place. In most places the modern statutory law imposed is dominant at first sight, but below the surface the realities are more complicated: one can find places where customary law is still intact and strong, other places where there is a mix and/or co-existence of customary and modern law, and places where customary law is almost completely destroyed. In all cases, local communities are forced to deal with modern statutory law and external actors that come from beyond the boundaries of the local communities and their water management institutions.

Of course, these uncertainties can themselves lead to conflict; "even at the local level there may be conflicts between those that adhere to customary law and those that do not, over which legal system should have jurisdiction" (Mohamed-Katerere/van der Zaag, p. 14). To make things even more complicated, the issue areas covered by formal and customary law do not fit together neatly. Introduced formal law has a tendency to separate a host of issue areas, whereas the approach of customary law is holistic, stressing the linkages between various issues. Thus formal introduced law clearly distinguishes between land law and water law. In customary law, however, this distinction is often irrelevant, customary land rights and customary water rights are closely linked, in accordance with a holistic management of natural resources including water. Hence it might be difficult to cut out a distinctive 'piece' of customary law, water law in our case, in order to combine it with formal statutory law. For this 'piece' is inextricably related to other elements of customary law that will not be left unaffected by such an operation.

Finally, unwritten customary law is not fixed like modern statutory law;

it is much more flexible and fluid, dependent on the actual situation on the ground, focused on the specifities of the issues at stake and the individual people involved. This again can make the incorporation of customary law into modern law difficult. Customary law cannot simply be transferred into the rigid system of modern western law. On the contrary, such an operation will lead to distortion and a dead set of static rules far apart from the living custom on the ground.

In real life, there are no clear-cut boundaries between the realm of the modern and the customary, rather they are interwoven, there is overlap and blending.

Resilience of community and custom

In Southern Africa, traditional actors and institutions, customary law and indigenous knowledge are factors that one has to reckon with. They have shown considerable resilience despite colonialism and post-colonial state-building. They were subject to modernizing influences, of course, and hence have been re/de-formed and modified to a certain extent. As it was said before, customary law is by no means static, rather it has shown itself to be highly adaptable. Customary law "is not something that was but something that is", it is "about how people actually operate on a day-to-day basis" (Mohamed-Katerere/van der Zaag n.d., p. 2).

Customary law and traditional societal structures-extended families, clans, religious brotherhoods, village communities and the like–and traditional authorities–such as village elders, clan chiefs, sorcerers, religious leaders, etc.–determine the everyday social reality of large parts of the population in Southern Africa even today, in particular in rural areas. (The influence of introduced European law was mainly focussed on urban areas.)

They persist despite state building and co-exist with state institutions. An approach that is confined to 'the state' and 'international relations' hence cannot comprehend the political reality on the ground and the real mechanisms of power and governance. State institutions are perceived by many people, especially in peripheral rural regions, as alien and threatening. For them the state, that is the capital city, is far away not only geographically, but also mentally. As mentioned above, they perceive themselves not so much as 'citizens' of the state, rather they define themselves as members of some pre-statal social entity, e.g. village, clan, tribe. Their loyalty rests with the authorities representing those social entities, and their expectations with regard to security, resource management, etc. are geared towards them.

Finally, it must not be forgotten that traditional societal structures are not confined by modern state boundaries. Rather they transcend borders that were drawn in colonial times and inherited by the newly independent states. Communities often settle on both sides of the border and form transnational social networks, thus contributing to the relativization of the importance of political borders: "The fiction of the Westphalian state system in Southern Africa contrasts with the lived reality on the ground: goods, people, resources, animals and so forth continue to ignore these borders and to get along in spite of them" (Swatuk/Vale 1999, p. 368). This, of course, considerably impacts on formal 'international relations' in general and transboundary water management in particular. The analysis and assessment of transboundary water management cannot be confined to inter-state endeavors.

Up to now traditional actors and institutions have only received little attention in the context of water management. After independence, the newly established independent states

followed the example of the former colonial masters and institutionalized modern western European legal systems, including western-style water laws. Customary law was discredited as anachronistic. In most Southern African states, the constitution and statutory law fail to mention and to acknowledge customary law. Mohamed-Katere/van der Zaag hold the opinion that state-based water management is relatively inefficient because "little attention has been paid to the potential role of customary law and other locally developed legal or normative systems" (Mohamed-Katere/van der Zaag, p. 1). Moreover, they posit that customary law is not only of relevance for the micro-level, but it can be "used in developing national, regional, and international law systems" (ibid., p. 3). Hence the attitude of state bodies to ignore customary law as anachronistic and outmoded has to be overcome, all the more so as in many places formal water rights regimes "have never really been systematically introduced or because those that do exist are ill-adapted to the need of water users" (Hodgson 2004, p. 56).

It can be assumed that the majority of rural Africans today are still under the influence of customary institutional arrangements of water management. "In sum, customary arrangements exist and govern water development, use, and management of the majority of the rural population, including the poor. These arrangements have generally shown to be effective, but are still fully ignored in formal legislation" (Implications 2004, p. 13). Hodgson gives the example of the Pangani River Basin in Tanzania where out of 2,265 abstractions only 171 were subject to formal water rights. "A typical lawyer's response is to assume that all such abstractions are simply 'illegal'. In practice the majority are likely to be made in accordance with rights created under customary law" (Hodgson 2004, p. 56). Unfortunately, however, the "lawyer's response" is only too often

the response of state authorities: They tend to criminalize 'illegal', that is not formally registered, users and uses and hence distort customary arrangements, although customary law "frequently remains the only type of 'law' that is applied at the local level" (ibid., p. 59). Its disregard creates confusion, conflict and a state of uncertainty in which the most powerful and most rogue actors dominate whereas the weak and poor loose the protection provided by the customary law (however minimal that may be), without gaining protection from the formal statutory law.

However, some recent developments give reason for optimism. There are some indications that customary law and traditional authorities are being taken more seriously by state authorities in Southern Africa, and there are approaches to incorporate them into modern state-based water management. For instance, Namibia's legislature recently adopted a Water Resources Management Bill "which directs the government water administrators to (a) take into account customary water rights in determining applications for abstraction licenses, and (b) enter in the new abstraction licenses terms and conditions which will satisfy the requirements of customary water rights" (Burchi 2005, p. 32-5).

Tanzanian experiences

Tanzania has a pluralistic legal system that comprises modern statutory law (first introduced during the German colonial regime), Islamic law and customary law or, to be more precise: the various customary laws of the various social (ethnic) groups that dwell on Tanzanian territory (Maganga 2002, p. 54). Hence in Tanzania the regulatory framework of water management is a mix of colonial and post-colonial state legislation and formal water rights, on the one hand, and "the set of local, community based practices that are normally determined by local customs, traditions and culture of the water users" (Sokile/

Mwaruvanda/van Koppen 2005, p. 28-1), on the other. The national level is the reign of formal legislation and institutions (with the state proclaiming ownership of the water resources of the country); at the basin level "there is a mix of formal and informal arrangements, but the formal predominates" (ibid.), whereas at the catchment and sub catchment levels "informal institutions gain strength and the patterns of the formal-informal interface become clearer" (ibid.).

Sokile/van Koppen (2003) and Sokile/Mwaruvanda/van Koppen (2005) present the example of the Great Ruaha River catchment/Mkoji sub-catchment in the Tanzanian Rufiji Basin in order to highlight that interface. They show that the formal institutions and the informal ones co-exist and more or less influence each other. They posit "that local water rights, local water rotations and local water user groups are widely in use and are more influential than the formal water rights, water fees and water user associations" (Sokile/van Koppen 2003, p. 1). With regard to the formal Water User Associations (WUAs) and village committees for instance they state: "Generally, there is no specific provision for taking on board the local and customary views into the formal councils and committees. Occasionally, however, the basin sub-office has used informal community leaders in implementing some of the water management activities, especially in resolving water conflicts. The results have been very impressive" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-6). They observed that "whenever the formal village sub-committees are weak, there is a stronger informal institution that assumes the roles and fills the gap" (ibid., p. 28-7). Nevertheless, there are also contradictions between

formal and informal institutions (as well as between competing old and new formal institutions). The new WUAs are perceived by many people on the ground as an alien structure superimposed by state authorities. People on the ground perceive new bureaucratic institutions generally "as costly, lacking in legitimacy and cumbersome" (Cleaver 2002, p. 28).

The people already had "other means of associating among themselves" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-8), they formed various groups for water-related tasks, e.g. groupings for the construction of irrigation schemes, implementing water rotations or canal cleaning groups. "Unlike in WUAs where membership is long-term and compulsory and requires subscription, membership to the local groupings is open and dynamic. (…) The communal associations were fluid enough to contain water demand variations in dry and wet seasons and had adequate mechanisms for sanctioning allocations. Normally, a culprit would be dissociated from peers and/or would be wished bad omen. Formal WUAs have little contact to informal local associations of water users" (ibid., p. 28-8). Hence the effectiveness and legitimacy of WUAs are doubtful. Informal associations on the contrary are "influential, powerful and attractive to the local communities. Most people feel a stronger sense of identity and belongingness than in the formal set ups" (ibid., p. 28-9). People on the ground "feel more committed to the customary arrangements for access to and allocation of water than to the WUA driven ones" (ibid., p. 28-8); "water users feel more affiliated to local arrangements" (Sokile/van Koppen 2003, p. 1). This is so because traditional authorities are still relatively strong at the local level. They co-exist with the formal local government and (try to) uphold customary rules of water management.

The sources of power and enforcement capacities of formal state and informal customary institutions are different and uneven. "Formal institutions display powers by the virtue of the state and formal rule of law, while the informal ones acquire power through customary influences and beliefs. Since the formal arrangements are backed by state power and the rule of formal law, those who incline and abide with the state are at an advantage" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-8). Although this is true in principle, the situation on the ground in specific places can also be to the advantage of traditional authorities and customary leaders. At times, power struggles between formal and informal institutions accrue, or informal leaders take over formal institutions and utilize them along customary lines. The result of these streams of influence and impacts in both directions is a situation of "dynamic institutional complexity" (Cleaver/Franks 2003, p. 16). This allows people to make use of both formal state institutions and customary institutions to pursue their interests ('forum shopping'). They "draw on a variety of institutional channels to legitimise their access to resources, utilising both 'traditional' and 'modern' institutions to make claims and secure access and rights" (Cleaver/Franks 2003, p. 10).

Sokile/Mwaruvanda/van Koppen draw as the conclusion of their case study: "Formal institutions i.e. policy and legislation on water resources management should assign more room for the other side of the coin-the informal side, as it has a lot to offer for achieving today's water management imperatives. Water managers at different levels should appreciate formal-informal interfaces and encourage the better coexistence of the two arms at various tiers and prefectures of water resources management" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-11).

Experiences from South Africa

It has to be acknowledged that the South African National Water Act (NWA, 1998) "is to provide for the establishment of suitable participatory mechanisms to ensure that the poor, along with other stakeholders, can participate in decision and policy making in connection with water resources management. Unfortunately, recent research suggests that notwithstanding the government's efforts, it is proving more difficult to include black communities in the former homelands who operate in the 'informal' water sector in the reform process. Indeed the relatively complex institutional arrangements for water resources management, which frequently must take account of a state's obligations under international law, coupled with trends in the water sector such as the introduction of charging schemes seem almost by their very nature to militate against the interests of the poor" (Hodgson 2004, p. 66-67). Poor small-scale farmers only too often are not aware of the provisions of the new water law and the respective institutions, whereas large commercial farmers are and actively make use of those institutions.

These shortcomings in the provision of participation could be overcome-at least to a certain extent-by resorting to customary law and customary institutions. Unfortunately, the National Water Act "does not explicitly recognise customary water management structures and in fact, customary water management structures are not mentioned at all in the NWA" (Malzbender et al. 2005a, p. 18-5).

In many rural areas of the RSA "formalised water management institutions do not promote widespread stakeholder participation by excluding the rural poor" (Malzbender et al. 2005a, p. 18-1). Government structures are weak and cannot provide for effective and sustainable

resource management. However, in some regions "customary water management structures that operate outside the framework of statutory law are able to fill the void caused by inefficient government structures" (Malzbender et al. 2005a, p. 18-1). In the light of problems with formal water management systems (financial constraints, lack of institutional capacity) "traditional or customary forms of water management might well provide an attractive and practical alternative" (ibid., p. 18-2). The prerequisite, of course, is that customary ways are still in place and traditional authorities still have legitimate implementation and enforcement capacities. Case study research with regard to different rural areas in South Africa shows that the situation in this respect differs considerably from place to place. There are villages where custom is still strong and traditional leaders play an important role. Here villagers have installed self-regulated water supply systems along customary lines, and the traditional leader's authority over water issues "is extensive and includes conflict resolution in water matters and the allocation, management and control of water resources in the area" (ibid., p. 18-3). Traditional authorities are capable "to settle disputes not only amongst villagers but also between villages" (ibid.). In these cases, customary law and traditional authorities step in and fill the gap, fulfilling the tasks of weak or absent state institutions. However, one can also find areas where custom and traditional authority have been considerably weakened and state structures are weak at the same time. Here no customary water management systems are in place and water supply is poor and badly organized. This is due to a "vacuum in governance" (ibid., p. 18-10).

State authorities in the RSA obviously have great difficulties acknowledging the importance and usefulness of customary mechanisms of water management. "The tensions between

modernity-with its manifestation in the promulgation of the NWA-and traditional norms and values that sit more or less comfortably alongside one another, are evident" (ibid., p. 18-7). Customary ways can not simply be incorporated into modern structures. Malzbender et al. point to the difficulty in formalizing customary ways by means of the establishment of WUAs which the NWA provides as a means of stakeholder participation. They stress that "the establishment of a WUA is subject to highly formalised procedures and that these procedures are not in fact compatible to traditional systems whose modus operandi is more fluid. In fact, the very success of the traditional systems is that they remain flexible and responsive, allowing for cost-effective dispute resolution. Furthermore, the establishment and management of WUAs is highly bureaucratic and costly and for many rural communities, the financial and institutional capacity to run a WUA does not present a viable solution" (ibid., p. 18-6). Customary ways have to be acknowledged in their own right, it would be a false approach to simply incorporate them into modern statal structures (as this would mean distorting them and taking efficiency from them). Rather, ways of positive accommodation have to be searched for , so that the lack of capacity of state institutions and their inability to fulfill the state's mandate of sustainable water management in the interest of all citizens can be overcome.

Customary conflict resolution

The strength of customary informal institutions becomes particularly clear with regard to conflict resolution. This is mainly so because of their inclusive participatory character. Customary arrangements stress the inclusion of all (entitled) community members. Cleaver observed in the case of Nkayi district in Zimbabwe that villagers prefer "to take decisions based on a process conducted through whole community meetings rather than through more exclusive committee structures (Cleaver 2000, p. 370-371), and "such meetings of the people are only considered

legitimate if all members of the community are present. Considerable effort is taken to ensure that this is the case (….) The Nkayi model of decision making was high on transaction costs-meetings were lengthy, decisions only taken on the achievement of consensus, after hearing all who wished to speak. Such a process could stretch over a number of meetings, sometimes extending over several months. (…) Such a laborious decision-making process is part of the conscious forging of a common base of understanding, of a consensus which not only contributes to the generalized community solidarity but also lessens the subsequent need for monitoring and sanctions. Thus, while high on initial transaction costs, such a model may be considered highly efficient in ensuring compliance with decisions made" (Cleaver 2000, p. 371). As all community members participated in decision-making and decisions were taken unanimously, causes for conflict were eliminated from the start. As people "prefer to spend more time negotiating consensus than establishing and imposing sanctions" (Cleaver 2000, p. 374) there is also a very "generous interpretation of compliance with rules, regulations and norms, only approximate compliance usually being required" (Cleaver 2000, p. 375). This, again, provides for conflict prevention.

In general, communities try to avoid conflicts altogether. "Conflicts are perceived as deeply threatening to communities, and disputes between people and a failure to live together are likely to incur the wrath of the ancestors and result in punishment through lack of rain, disease and crop failure" (Cleaver 2000, p. 378). When conflicts actually occur, they are dealt with in the local informal context. "Most disputes on water are resolved informally at the lower levels before they erupt into serious conflicts" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-9). For the Great Ruaha River catchment, Sokile/van Koppen found that "more than 70% of water

users choose to settle disputes over water via informal channels and the latter are more effective in resolving water conflicts and reconciling the victims compared to the formal routes" (Sokile/van Koppen 2003, p. 1). Conflicts are dealt with either directly between the conflict parties or by the local elders or the village leaders; and only if conflicts cannot be resolved on these levels, also formal local institutions like wards and sub-basin water offices might get involved, but even those operate according to customary principles, "focusing on reconciliatory rather than punitive rulings" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-9).

People do not like to get the state and the courts involved as the "formal route is expensive, time-consuming and less trusted among local communities" (ibid., p. 28-9). Local customary conflict resolution mechanisms "are more efficient, more cost-effective, longer-lasting and more widely accepted among local water users than most top-down state-driven institutions" (Sokile/van Koppen 2003, p. 7). The adversarial principles of the formal state law system which focus on punitive justice are alien to customary ways which focus on restorative justice. Hence "local water users prefer informal routes over formal ones because they feel a greater sense of identity and hope for justice than they would experience in the courts of formal law where decisions are based on 'I lose - you win' or 'I win - you lose' principles. Such parallel forums provide an effective conflicts resolution institution for managing water conflicts at a lesser cost" (ibid., p. 28-9, see also Maganga 2002, p. 68).

Cleaver similarly observed for the Usangu area in Tanzania: "Conflicts over irrigation water are generally resolved between irrigators themselves, by reference to 'traditional' elders and (Sangu) customs, only if unresolvable are they referred to the Village Government and to Ward tribunals" (Cleaver 2002, p. 22).

Customary conflict resolution is very flexible, generous and geared towards reconciliation. "Social forms of conflict resolution (often conducted through village elders) emphasise the generous interpretation of compliance with the rules (a blind eye is turned to a limited amount of free riding), the negotiation of compliance over time, rather than at a single event, and the desire for reconciliatory rather than adversarial solutions (fines and punishments imposed only in the last resort). Moreover, punishment may often safely be left in the hands of gods or the ancestors, so relieving individuals of the troublesome obligation of imposing sanctions on close neighbours, even kin. Such conflict resolution through socially embedded mechanisms is neither rapid nor low cost but people may be willing to incur transaction costs if the outcomes are socially preferable, more reconciliatory and less adversarial, so preserving the possibility of maintaining livelihood interactions with the offender" (Cleaver/Franks 2003, p. 13).

This way to deal with water-related conflicts has to be seen in the wider context of customary conflict resolution (cf. Boege 2004, p. 172-180). Customary conflict resolution is basically about restoring harmony within the community. The way to achieve this is to reconcile the conflict parties, the victims and the perpetrators. The task of the traditional authorities is to establish a consensus between conflict parties-or the community and the offender-by means of various forms of facilitation, mediation and negotiation. The crucial point is that the perpetrators are willing to confess and to compensate, and the victims and the community are willing to forgive and accept compensation so that reconciliation can take place and peace and harmony can be restored. It is not establishing wrongfulness and punishment of the wrongdoer that is at stake as in adversarial, formal western law, but reconciliation and restitution. This is the only way relationships can

be re-established, meaning not only relationships between perpetrators and victims/the community, but also between their respective social groups (families, villages, clans, tribes,…) with the spirits of the ancestors and with god(s). The spiritual dimension of conflict resolution plays a decisive role in the customary context. Hence the importance of rituals and feasts for the confirmation of conflict resolution and peace building.

The main problem with customary law and customary conflict resolution is that it works well within a given community with regard to the members of that community. Conflicts within and between families, within and between villages lend themselves rather easily to customary conflict resolution (Maganga 2002, p. 55-57). However, it does not provide for dealing with outsiders. Conflicts among the members of the "we-group" of the community can be addressed and solved by customary ways, but conflicts between 'us' and 'them' are more difficult to tackle, as 'they' adhere to another law, be it another customary law or formal statutory law. Conflicts between neighboring local communities pose relatively smaller problems as some overarching customary principles might be developed and applied that allow for the (temporary) creation of common ground, whereas conflicts between ethnic groups or conflicts between local communities and modern outside actors such as hydro-power or mining companies pose much larger problems with regard to the applicability of customary law. Customary rights "are not likely to survive intervention by formal rights holding outsiders such as, for example, the construction of an upstream hydro-power dam constructed and operated in accordance with a formal water right" (Hodgson 2004, p. 60). Hence there is a tendency to try to obtain formal rights because of the insecurity that is associated with customary rights. This tendency is enhanced by government

policies that aim at the establishment of formal legal systems. However, those policies may easily lead to increasing "tensions and conflicts between different resources users, as well as between the government and the villagers", as Faustin Maganga has observed with regard to the Tanzanian situation (Maganga 2002:53). Conflicts between pastoralists and farmers about access to water in the dry season or conflicts between government-backed projects such as large-scale cash crop production or hydropower-generation and local water resource use for small-scale subsistence agriculture are cases in point.

A particularly vulnerable section of the population in many African countries are the (semi-) nomadic pastoralists. Their way of life in the (semi-) arid grasslands is governed and protected by customary law that gives them grazing rights and rights of access to water. Water rights play a vital role for their very survival. However, only too often pastoralist communities do not have formal rights over land and hence no formal rights over water, too. This makes life for them extremely difficult under conditions in which states intend to impose formal statutory law and statal control over all of the state territory and the 'citizens' and in which competition over scarce water resources between different pastoralist groups and between pastoralists and sedentary farmers increases due to factors such as population growth, extension of farmland and increase in numbers of livestock. Pastoralists are 'difficult citizens' in the view of state authorities, because they are difficult to control, tend to ignore state boundaries and cling to their customary ways which inter alia include the notion of carrying arms for the defense of their livestock. Hence state authorities only too often are biased to the detriment of pastoralists in cases of conflicts between pastoralists and farmers or other groups, e.g. when farmers block access to water points. Furthermore, state authorities ignore customary rights of pastoralists with

regard to water and declare state ownership of water resources that are of vital importance to pastoralists, thus opening access to water resources that traditionally were only used by pastoralists to unrestricted use by other (outside) actors. In situations like this, customary conflict resolution is no longer of any help.

Some principles of customary water management

The customary way to distribute water when it is scarce is by allocation of time: "In the peak of dry season (September-November) all water users come together and agree on how to share water through rotational arrangements (zamu). This is done without external formal interventions. A weekly roster is set and agreed upon and each use prefecture, commonly referred to as wana-zamu, i.e. the bearers of the rotation appoints members to make up a loose committee to oversee the water rotations" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-10). This way of water distribution can be found in many customary settings. Aaron T. Wolf observed similar regulations among the Berber communities in the Atlas Mountains of Morocco. He perceives the principle "allocate time, not water" as one decisive "lesson learned" from "indigenous methods of conflict resolution which are applicable to modern problems" (Wolf 2000, p. 357).

Another principle Wolf has identified in customary water management and respective conflict resolution is to "prioritize different demand sectors" (ibid.). Highest priority is for drinking water for humans, followed by water for livestock, then irrigation water, then mills, etc.

This fits perfectly with case studies on customary water management in rural Zimbabwe. Here the top priority is also the right of everybody to clean drinking water. There is a strong obligation to share drinking water.

Such sharing obligations cut across village or kinship borders, and to breach the norm of providing drinking water means "risking sanctions or being the target of witchcraft" (Derman/Hellum/Sithole 2005, p. 6-7). Next on the priority list is water for subsistence gardens that provide the essential source of livelihood for rural families. Only then come other uses of water. Derman/Hellum/Sithole posit that this prioritization of water use in customary law is congruent with a modern law approach that stipulates the right to water as a basic human right (ibid., p. 6-1).

Cleaver (2000) observed similar principles in Zimbabwe's Nkayi district, focussing on a spectrum of access rights. "In times of drought access to water sources becomes more restricted through the application of 'closed hours' rules and queuing (…) A hierarchy of users then emerges ranging from those with undisputed rights of use to those whose usage is considered conditional. Such users then have to negotiate access; on the basis of claiming rights through participation in implementation or maintenance, through kinship or appeals to the 'right way of doing things'" (Cleaver 2000, p. 369). Furthermore, Cleaver found clearly gendered approaches to water use which make negotiation of priorities necessary: "Whilst men and women expressed clear priorities regarding water (men prioritized water for cattle, women water for people), their differing gendered positions in terms of division of labour, and their common interest in securing household livelihood concerns enabled them to negotiate water use" (Cleaver 2000, p. 369-370).

Local-international interplay: Two cases—The Kunene and the Okavango River

The Kunene and Okavango Rivers are a typical illustration of the complex spectrum of issues addressed in the previous chapters. Dealing with the Okavango and Kunene Rivers means having to analyze the interplay of local, transboundary, domestic and international (hydro)politics of the basins and the riparian states of Angola, Botswana, Namibia.

The Kunene case

The Kunene river has a total length of 1050 km and a catchment area of about 106,000 square kilometers. Its MAR is 500 million cubic meters per year. The river basin is shared by Angola and Namibia, with the Kunene's headwaters rising near Huambo in southwestern Angola, forming the border between the two states for the last 340 km and emptying into the Atlantic Ocean at Foz da Cunene. In these 340 km, the river falls more than 1,100 meters, providing the river basin with a considerable hydroelectric power potential. Because of this hydroelectric importance, several dams and hydropower stations have been constructed so far: Gove, Matala, Calueque, Ruacana. Another dam has been proposed-and this project is the subject of contention.

The former colonial powers, Portugal and South Africa, had entered into several water use agreements and had established a Permanent Joint Technical Commission (PJTC) for the development of hydropower and water supply projects on the Kunene River. Because of the wars in Angola and the struggle for Namibian independence these endeavors were seriously hampered. It was only after the independence of Namibia that "the stage was set for greater cooperation between the two bordering countries regarding the Kunene River" (Meissner 2003, p. 264). In September 1990, the governments of the two countries signed an agreement on cooperation with regard to the Kunene waters, basically affirming and endorsing the old agreements between the colonial powers and re-instating the PJTC. This agreement can be seen as a "manifestation of the very good international relations between the two countries" (ibid., p. 265). Both sides agreed to develop another hydropower scheme on the Lower Kunene. However, no consensus could be reached about the best site for the dam which was to be built. While the upstream riparian Angola preferred the Baynes Mountain site, the downstream Namibian side opted for the Epupa Waterfall site.

"The Angolans' argument is that, if a dam is built at the Baynes site, it will mean that the Gove Dam, which was damaged in the civil war, could be renovated. This in turn would bring much-needed development to Angola's Huambo Province. Namibia, however, would like to see a dam built at Epupa: the Baynes site, they argue, is too small, despite its environmental and social advantages. The Epupa site is regarded as a prestige site by Namibia (...). The Epupa Dam will be the third-largest dam in Africa, and this holds the promise of much status and prestige for Namibia" (ibid., p. 266f.).

As the civil war in Angola put on halt any real developments anyhow (the region of the Upper Kunene was a region extremely heavily affected by the war), no progress on the issue could be achieved for years. The war in Angola not only prevented the construction of the dam, but also made it "impossible to come to a decision on whether to go ahead with the project at all" (ibid., p. 266).

When built, the dam will be the largest of the Kunene River dams. Planning data are: Total height 150m, crest length 600m, reservoir capacity 7300 MCM, installed hydroelectric generation capacity 415 mega-watt, capacity to generate 1650 giga-watt hours electricity per year (Heyns 2003, p. 11f.).

Such a large dam will have substantial environmental and social effects on the land and the people. If built at the Epupa site, the project will flood 350 square kilometers of inhabited land and affect thousands of people. Environmental concerns are raised with respect to the river's riverine and marine environments and water loss due to high evaporation from the reservoir's surface area. Hundreds of species rely on the river and would be harmed by changes in its flow. The riverine forests would be destroyed. The reservoir is expected to produce higher incidences of malaria and schistosomiasis. The spectacular Epupa Falls, which have become a tourist attraction and thus a source of income for the local people, would be inundated.

Even more important are the social concerns with regard to the Himba people living in the area. The approximately 15,000 Himba people are semi-nomadic pastoralists, keeping cattle, sheep and goats. They move around large areas in Kaokoland, the northern Namibian region on the southern bank of the Kunene, and cross the river into Angola seasonally for access to grazing grounds for their livestock. The Angolan-Namibian border, drawn in colonial times, means nothing to the Himba who live on both sides of the river border. The Himba's lifestyle will no doubt be severely affected if the dam is built: people will have to be resettled on a large scale and will lose vital grazing grounds for their herds on the banks of the

river. The pressure placed on other grazing grounds further away from the river will be enormous. Furthermore, destruction of the forests would have negative effects, too. The forests provide an additional source of food for the Himba people, especially in times of drought. The Himba harvest the nuts of the palm trees along the river, and they at times engage in some gardening to produce supplementary food, with the alluvial soils along the banks of the river being prime locations for gardens.

Given the dire shortage of land in the region, alternative land is not available. Hence relocation of the people will inevitably lead to their material and-taking into account their spiritual connectedness with the land-cultural impoverishment. One could even go as far as to say that the traditional way of life of the Himba will be completely destroyed. Even more so as the influx of large numbers of outsiders will also heavily impact on the fabric of the local communities. Construction of the dam would require at least 1000 workers, mostly from outside the area. Family members, traders and other 'foreigners' would follow suit. Probable effects will be a rise in crime, alcoholism, prostitution and the spread of HIV/Aids.

It is against the background of these environmental and social concerns that a conflict between the central government of Namibia, on the one hand, and the Himba and other non-governmental, local as well as international, stakeholders, on the other hand, has evolved.

The central government wants the dam for reasons of economic and social development. It argues that Epupa will make Namibia self-sufficient in electricity, which is especially needed in the mining and industrial sectors, and that electricity might even be exported to the RSA and other neighboring countries, earning much needed

foreign revenue. At present, Namibia is dependent on the RSA for its electricity needs. Furthermore, the government maintains that the Epupa project will bring socioeconomic development to the up to now relatively backward region of Kaokoland and the people living there: jobs and roads and schools and hospitals, etc. From this perspective, building the dam means fulfilling the government's obligation to bring development to its citizens, who have a constitutional right to that very development.

However, the local indigenous group of the Himba people as well as various national and international NGOs are opposed to the planned Epupa hydropower scheme (and the Baynes site, too). They are skeptical about the government's developmental promises and are afraid that the environmental, social and other costs of the project will by far outweigh the promised socioeconomic benefits. They therefore demand from the Namibian government and NamPower, Namibia's national electricity utility, not to construct a dam.

The traditional leadership and the vast majority of the Himba community is against the proposed dam because it will have massive negative impacts on their way of life, not only as far as their material well-being is concerned but also with regard to the social structures of their society and their cultural and spiritual identity. With regard to the latter aspect it is worth mentioning that the reservoir would inundate 160 Himba grave sites and almost 100 archaeological sites. The traditional leaders of the Himba explain the importance of these grave sites in the following way: "For the Himba, a grave is not just the location of the physical remains of a deceased person-it is a focal point for defining identity, social relationships and relationships with the land, as well as being a center of important religious rituals. The preference for riverine locations is partly a practical one-alluvial soils are usually deeper and easier to dig. But

riverine areas are also heavily loaded with emotion, as the points where communities congregate, the starting points of the annual cattle migrations, the places where people struggled to survive droughts, and the sites of graves of other family members. The river courses and the stories which are associated with them are common subjects of Himba praise songs. (…) For the Himba in the Epupa area the destruction of ancestral graves constitutes a major objection to the proposed dam. We wish to state clearly that Himba culture would be at risk if the ancestral graveyards along the Kunene are inundated. Although there have been some suggestions that Himba graves could be exhumed and moved, we believe that relocation will destroy the significance of the graves just as much as flooding them would". That relocation is not an option has to do with the practical purpose of the graves to determine 'ownership' of certain areas of land. For claims on ownership are tied to the graves of ancestors in the area. "Those who can demonstrate the longest connection with the land will have the strongest say over key land-related matters such as rights of access and control over resources. Because graves are so important in the land tenure system, senior elders can recall the location and identity of even the most ancient graves" Hence the key point "is not the physical fact of the graves themselves, but the connection between the graves, the family's history and the community's system of land tenure and decision-making".

The Himba claim that a far-away central government has no right whatsoever to take decisions about the use of an environment-land and water-that the Himba consider as their living space since times immemorial. They heavily depend on the Kunene waters for subsistence. In the local context of their traditional lifestyle they have customary ways and means of water management-similar to those described in the previous chapter-that in the

first place provide for the basic needs of humans and their cattle. Concerns of water management in the interest of energy production and generating foreign revenue are, of course, far away from the water needs of the local people and their customary approaches to water usage and management.

What can be observed in this case is the well-known pattern of a clash of traditional lifestyles of local communities and their customary ways of natural resources management, on the one hand, and actors and interests from the modern sphere of the state and the formal economy that try to introduce modern concepts of natural resource management into the local communities, on the other hand. As the region in question is a peripheral locality from the point of view of the central governments-in Angola as well as in Namibia-the agencies of the state are keen to permeate that region in order to finally establish full-fledged state control in that 'remote' part of the state territory. At the same time they have considerable problems to really accomplish this self-imposed task, as local societal structures prove to be resilient. This resilience not least hinders the implementation of the ambitious water project. The statal permeation of the region is incomplete, state structures in the region are weak , and Himba societal structures are still relatively intact. This makes the realization of the water project difficult. On the other hand, the implementation of the ambitious dam project would no doubt considerably contribute to the strengthening of state structures in the region. The Himba, however, have got along without the 'state' throughout their history.

An additional aspect is that the region they live in is border territory. As semi-nomadic people they are difficult to control by state structures anyhow and in particular have a tradition of ignoring that highly important facet of statehood: the border. They make use of the river water from both of its banks. For them, the river is not

a demarcation between the territory of two states, but the heart of their living space. People are not either Angolan citizens or Namibian citizens, but Himba people born in the Epupa area. Families live on both sides of the river. Graveyards are on both sides of the river. The Himba accordingly regularly cross the river to visit relatives, to conduct business or for other purposes. A dam and reservoir at Epupa would result in the loss of traditional river crossings and hence would have a major negative social impact on community ties.

There is thus a clash between two completely different perceptions of the river: The river as a political border and as a resource that can be exploited for economic gains-that is the view of the modern actors from the sphere of the state and the formal economy. The river as a main feature of a traditional homeland and as a source of social and cultural sustenance-that is the view of the local people.

Interestingly enough, the state was not only challenged from the local sphere, but also from outside. Several external actors came to the assistance of the Himba, mainly environmental NGOs and NGOs concerned with human rights and the rights of indigenous peoples and ethnic minorities. Some of them were national Namibian, e.g. the National Society for Human Rights or the Legal Assistance Centre; most of them, however, were international or NGOs based in developed countries: Germany, Italy, Norway, Poland, Slovakia, Sweden, Switzerland, the United Kingdom, the USA. They all supported the Himba's cause and became engaged in the Epupa conflict either directly or indirectly, either massively or only marginally (cf. Meissner 2004).

Richard Meissner identified 49 actors involved in the Kunene/Epupa conflict (ibid.). The conflict was carried out not only on the local and the national level, but also in the realm of international civil society

and international public opinion. It was this "internationalisation" of the issue which contributed both to the empowerment of the side opposed to the government and its project and to the non-violent conduct of the conflict. The government came under pressure from both within-the local communities-and outside-international civil society. Territorial communities and non-territorial (epistemic, NGO) communities joined forces in a network community (Blatter/Ingram/Levesque 2001, p. 40).

Over the last years, the development of Epupa has been on hold. One can argue that this has been either mainly because of the local and international resistance of an influential and rather well-organized coalition of the directly affected Himba people and international environmental and human rights NGOs, or mainly because of differences between the Namibian and Angolan governments with regard to the site of the proposed dam (Epupa versus Baynes). For both the Angolan and the Namibian central governments, the Himba are a marginal peripheral minority group whose concerns may be neglected in the superior interest of the 'development' of the 'nation state'.

It remains to be seen whether now that the civil war in Angola has come to an end developments will gain new momentum as the Angolan side, which had been distracted from the issue because of the war, will show more interest in the utilization of the Kunene River waters.

Be that as it may, it has to be summarized that in recent years the intra-Namibian conflict over the dam project at the site of the Epupa Falls has attracted considerable international publicity. Far from being a merely local issue, this conflict also impacts on the bilateral relations of the riparians and has led to the massive involvement of extra-basin actors. It can also be argued that it was because of this constellation of factors that a real conflict could be conducted: without international assistance, the Himba people would

hardly have been powerful enough to engage the central government in a conflict-the government would have simply overridden the Himba concerns. Furthermore, it can be argued that international publicity and engagement opened non-violent avenues for the Himba people to fight for their cause; and this same publicity and engagement was protection against the use of violence from the government side. For this reason, the conflict could be conducted in non-violent forms (apart from some instances of police violence against protestors and meetings of the Epupa community).

Richard Meissner's recommendations on how to tackle the conflict in the future can only be underscored:

"Public Participation in the Kunene River basin not only is feasible and desirable but also is a natural outflow of citizen participation in pressing issues in river basins. This is due to the fact that democratic principles have been fostered in Namibia since independence. The Himba community has organized itself into a communal interest group with an alliance with interest groups in Southern Africa and the rest of the world. Transparency as regards the construction of the Epupa Dam could therefore help to alleviate the tension between these interest groups and the government of Namibia" (Meissner 2003, p. 269).

The Okavango Case

The Okavango River is shared by three countries, namely Angola, Botswana and Namibia. The Angolan portion of the Okavango catchment provides some 94.5 percent of the total run-off in the Okavango River, 2.9 percent originates in Namibia and 2.6 percent in Botswana. Angola comprises 45 percent of the total basin area, Namibia 37 percent and Botswana 18 percent. The Okavango's two main

tributaries, the Cubango and the Cuito, originate in relatively water-rich Angola. Coming from the Bie plateau in southern Angola, the Okavango forms the border between Angola and Namibia for some 400 kilometers, then crosses the Caprivi Strip in Namibia, enters Botswana and flows into a large swamp area, branching out to form the Okavango Delta, and finally the waters disappear in the sands of the Kalahari desert and evaporate into the atmosphere above the delta: 84 percent of the water that flows into the delta is lost to evapotranspiration. This means that the Okavango River is endoreic, does not discharge into the sea. The Okavango basin is one of the least human-impacted, near-pristine river systems in Africa. The Okavango river functions as a linear oasis in an otherwise semi-arid and arid region (Ashton 2003, p. 167). The basin is home to an estimated 500,000 people.

The Okavango River is an extraordinarily important source of fresh water and of major economic and political significance to all three riparian countries. Of special importance is the Okavango delta, which on a global scale is an area of unique biodiversity. The extent of the Okavango delta fluctuates considerably due to natural factors. During the dry season the delta area covers between 6,000 and 8,000 square kilometers, during the flood season it expands to approximately 15,850 square kilometers. The overall ecosystem of the downstream delta is highly vulnerable to any permanent changes in the flow patterns upstream. Any alterations in the shape of or reductions in the area of the delta due to a sustained decrease in inflows to the Okavango delta caused by upstream projects abstracting water (irrigation, hydropower schemes, dams) could have catastrophic environmental and socioeconomic effects (not least encroachment of the Kalahari desert). And this is exactly what the conflicts are about.

After the cessation of violent conflict in Angola this upstream state might finally become capable of, and interested in, developing the water resources of the upper Okavango River, a notion that had been rendered impossible for decades due to the civil war. During the war, development of the Angolan part of the Okavango basin was impossible. It was widely UNITA-controlled; and people from the region were internally displaced on a large scale. Fighting and starvation cost an immense death toll, and the basin was littered with thousands of landmines. Now that the war is over, rural towns and villages in the upper reaches of the Okavango basin, which had been abandoned due to the war, will be resettled with limited infrastructure, such as water treatment facilities, and with increasing demand for water. The Angolan government might take up pre-war plans for water projects as mobilization of water resources is key to economic progress. Resettlement of displaced people and development of agriculture and industry will become possible in the wake of the clearing of landmines from the upper Okavango basin. This will enhance demand for water. Due to the topography of the catchment in Angola there is good potential for hydropower generation and the area is suitable for irrigation (Pinheiro/Gabaake/Heyns 2003, p. 106).

The Angolan part of the Okavango basin is "likely to be affected by population growth, mining, hydropower, urbanisation and industrialisation which will have the potential of leading to pollution, reduced river flow, and water quality" (Mbaiwa 2004, p. 1322). Upstream development will inevitably impact on downstream countries. Angola is therefore perceived as "a potential sleeping giant that will come alive and that may have severe consequences for the future availability of water"

for downstream countries (Pinheiro/ Gabaake/Heyns 2003, p. 114). Angola at present "is cautious with regard to agreements over water sharing options that may ultimately limit its own future economic development" (Ashton/Turton 2004, p. 8). Another factor of uncertainty which should not be underestimated is whether the Angolan 'state' (that is the government and central state bureaucracies based in the capital city) will actually become the decisive and single decision-making actor on the Angolan side. Given the fact that the upper Okavango basin was part of the heartland of the UNITA and that state structures in post-war Angola are relatively weak, one has to take into account the possibility that the central government will not show much interest in the region or will not be capable of enforcing its policies there because other non-state actors remain strong, who pursue their own agenda. In other words: At present the situation in the Angolan part of the Okavango basin is very difficult to assess, and it is even more difficult to think of scenarios of future development.

Namibia at present uses very little water from the Okavango River. However, in the future it intends to use Okavango River water for its Eastern National Water Carrier (ENWC) in order to augment the water supplies in the central area of Namibia. The plan envisages extracting water from the Okavango (or Kavanogo as it is called in Namibia) at Rundu, to transport it via a 250 kilometer pipeline to the town of Grootfontein and there introduce it into the existing carrier and carry it to more densely populated, but water-scarce locations. The Rundu-Grootfontein pipeline would be the fifth and last phase of the establishment of the ENWC; all other parts of the system-the construction of which began in 1969-have been completed already. The abstraction of water from the Okavango for the ENWC might have negative effects downstream, especially in Botswana's

Okavango Delta. The magnitude of effects, however, is contested. The off-take proposed at present is a modest one percent of the river's total annual flow, or approximately 100 million cubic meters per year (Swatuk 2002b, p. 144). This might reduce the delta's floodplain by three percent. However, given the considerable natural alterations in the total annual flow it is unclear whether this extraction will be felt at all. Namibia for its part argues that the proposed take-off will not affect the ecology of the delta.

The downstream riparian country Botswana is especially vulnerable as it obtains 94 percent of its fresh water from neighboring countries. Tens of thousands of rural people in Botswana live off the Okavango delta ecosystem (livestock farming, crop cultivation, fishing), and the delta is key to the country's fast expanding (eco-)tourism industry, as large game parks have been established in the delta. Very small amounts of water from the Okavango River are currently used in Botswana (small-scale irrigation schemes). Botswana is at present elaborating an integrated resource management plan for the Okavango delta with the support of international donors in order to ensure its long-term conservation and sustainable utilization.

In 1997, Botswana listed the Okavango delta as a Ramsar site, making the delta the world's largest officially acknowledged wetland of international importance by terms of the Ramsar Convention on Wetlands of International Importance. This poses specific obligations on riparian countries with regard to conservation, management, planning and implementing wise use of resources (sustainable utilization), encouraging research and exchange of data and promoting training, management and wardening.

Namibia, which was not consulted, was very critical of Botswana's listing the Okavango Delta as a wetland of international importance. It was regarded as a means by which the Botswana government was trying to block Namibia's ENWC plans.

However, although there have been considerable tensions between Namibia and Botswana because of Namibia's ENWC plans in the past (which Botswana perceived as a threat to national security), the three riparian countries so far have demonstrated their willingness to solve the problems related to the Okavango River in a mutually acceptable and beneficial way. An interstate agreement aimed at the equitable use and sustainable development of water resources of the Okavango River was already signed by the governments of Angola, Botswana and Namibia in September 1994. The agreement facilitated the establishment of OKACOM, the Permanent Okavango River Basin Water Commission, making OKACOM the first full-fledged modern RBO in Southern Africa.

OKACOM consists of three delegations from the three member states. The Commission determines its own rules of procedure, and decision making is based on negotiations leading to consensus. OKACOM has an advisory role with regard to the member states. It mainly deals with the equitable allocation and sustainable utilization of the water resources of the Okavango basin. An OKACOM Secretariat is in the process of being established; it is expected to provide technical, advisory and other support services to the member states. It will be based in Luanda.

OKACOM's work contributed decisively to the mitigation of potential conflicts "and facilitated a number of constructive achievements that would otherwise not have been possible" (Heyns 2004, p. 14). Through OKACOM, which generally functions

well, parties are in a permanent process of dialogue on the issue of the coordinated development of the Okavango basin.

Basically, the three riparian states "need to reach consensus on three critical issues, namely: the specific water requirements needed to sustain the sensitive aquatic ecosystems; the quantities of water that each country can justifiably claim for their own (consumptive) use; and the manner in which the water resources will be managed in future" (Ashton 2003, p. 165).

The final aim is agreement on an integrated water resource management strategy and a respective Integrated Management Plan (IMP) for the entire basin. A preparatory assessment program was deemed necessary to achieve this aim. This program is in three steps (cf. UN Economic Commission for Africa 2000, p. 43f.): establishing coordination and consultation mechanisms which allow for stakeholder participation in environment assessment and participation in elaborating the IMP; conducting a Transboundary Diagnostic Assessment (TDA) study in order "to identify the key areas of concern and the gaps in the knowledge of the bio-physical, social and economic environment in the Okavango Basin" (Heyns 2004, p. 15), and developing a strategic action program aimed at structuring inputs and resources prior to implementation of the full-fledged IMP. With regard to TDA, OKACOM received support from the Global Environment Facility (GEF) which provides the funds. The TDA is meant to develop a solid and commonly approved basis for an integrated water resource management strategy for the entire basin. OKACOM appointed a steering committee, the Okavango Basin Steering Committee (OBSC), to manage the project, which is now well under way.

As in the case of the Kunene River, it is not only the governments of the riparian states and their respective institutions that have an interest in the Okavango River, but also local communities and stakeholders in the regional and international realm. The difference to the Kunene case, however, is that in the Okavango basin deliberate endeavors are being made for cooperation between governmental and inter-governmental actors, on the one hand, and non-governmental stakeholders from various walks of life, on the other hand. In particular, local communities and their customary knowledge with regard to water management are being deliberately tapped. The forging of networks of governmental and non-governmental actors decisively contributes to conflict prevention in the Okavango case-even if conflict prevention is not explicitly formulated as an aim in itself by most of the stakeholders involved in this networking endeavor.

The engagement of GEF is already an indication of the fact that extra-basin actors are very interested in the Okavango River. This is due in particular to the worldwide unique features of the Okavango delta which make it a place of global interest as is expressed in its listing as a Ramsar site. Numerous projects of development agencies from various northern countries are in place in the Okavango basin and the delta especially, dealing with the environmental protection of the biosphere and the sustainable environmentally sound socioeconomic development of the region. A host of research projects dealing with the same issues are under way, too. And several (international) environmental organizations are running campaigns for the protection of the Okavango basin. Furthermore, several coalitions of environmental and other NGOs have projects running for the preservation of the basin and the lifestyle of the people: The "Sharing Water Project", the "Every River has its people" project, the "Okavango Pilot Project" (as part of the overarching "Water for Peace" program). In these

coalitions international NGOs like Green Cross International (GCI) and the International Union for the Conservation of Nature (IUCN) work together with national NGOs like the Namibia Nature Foundation (NNF), the Kalahari Conservation Society (KCS) or the Desert Research Foundation of Namibia (DRFN), local communities and research institutions (like AWIRU or the Harry Oppenheimer Okavango Research Centre (HOORC)). Moreover, these networks deliberately seek cooperation with national governmental institutions, and especially OKACOM. Given the rather limited capacity of the governmental and inter-governmental agencies, the engagement of non-state actors like international organizations and NGOs and the support they provide is a considerable factor for the transboundary management of water resources in the Okavango basin. Larry Swatuk states that "there is a strong synergy between projects and groups, in part facilitated by the small scientific communities that exist both in Namibia and Botswana" (Swatuk 2003, p. 902). However, there does not seem to be much coordination among these efforts.

The interference from the civil society side might not always be welcomed by governmental actors who feel disturbed in their routine expert proceedings. However, the interference obviously adds expertise and guarantees scrutiny of developments in the basin by a local, national and even global public and-probably most important-provides for public participation. The importance of public participation cannot be overestimated. Of course, public participation complicates decision-making and implementation even further. However, it also opens up options for the ownership of processes and the improvement of efficiency, thus positively influencing the acceptability of policies. The legitimization of politics is a decisive ingredient of conflict prevention. This is all the more so in a cultural context where traditionally the involvement of

communities is a highly appreciated norm. In Botswana, this custom is referred to as "Kgotla", or "process of consultation, that is an intrinsic part of life for the Botswana people. These cultural norms dictate that decisions are reached through consensus, with a high level of stakeholder consultation. In fact, the central part of any village in Botswana is the 'Kgotla', where the local chief is available at any time for consultation with his community" (Turton and Earle 2002, p. 4).

This "relatively democratic Kgotla system of traditional government" (Swatuk 2003, p. 902) buttresses local community involvement. Government representatives who prefer a top-down approach of decision-making are not very happy with customary ways of that type. However, in order to build trust and understanding they will have to adjust to those customary ways if they are interested in avoiding trouble and preventing conflict. Hence by incorporating customary ways and institutions, water management of this kind can contribute to the strengthening of state structures on the ground, as those structures are no longer perceived by the local population as alien and introduced by strange outside forces, but as adjusting to customary institutions already in place. This enhances the legitimacy of state agencies and makes collaboration between traditional local actors and modern state authorities easier.

It is against this custom-based grassroots involvement and against the engagement of international civil society and the scrutiny of international public opinion that governmental actors would find it difficult to resort to harsh non-cooperative or conflictual behavior, be it in their international relations or be it in dealing with their own local communities on a sub-national level.

Even more clearly than the Kunene River case, the case of the Okavango basin demonstrates that the various levels of hydropolitics-from the local to the global-are closely interwoven, and not only governmental agencies are hydropolitical players, but also international organizations, civil society NGOs, the private sector and local communities. Thus hydropolitics in today's world can no longer be confined to the local or national level. Not only are various stakeholders from within a given international river basin hydropolitical players, but also actors from outside, e.g. international organizations (UN, UNEP, UNDP), donor organizations (e.g. World Bank) and international NGOs (e.g. River Basins Network). The involvement and intervention of these extra-basin actors influences the hydropolitics of a given river basin. Hence local/national water issues often become highly internationalized/globalized. This is what the intervention of extra-basin actors in the Okavango case amply shows.

This situation seems to have an immense effect with regard to leveling the playing field between intra-basin actors: Although Botswana is a downstream riparian-and an especially vulnerable one-it is in a relatively good position thanks to the interest the international community, international civil society and international public opinion take in the fate of the Okavango delta. Swatuk points to the fact that "as a downstream state, Botswana is playing the multilateral card. By doing so it is hoping to eventually tie its upstream neighbours into a regime of sustainable river basin management. Botswana, in playing the 'environmental good guy', is understandably pursuing narrowly defined national interests in the form of Delta health for tourism and economic development" (Swatuk 2003, p. 904).

Similarly, local communities depending on the integrity of the delta ecosystem are empowered. Local communities generally are also rather weak players, but again, the "internationalization" of the Okavango River issue contributes to strengthening them. And the empowerment of relatively weak actors-downstream riparian states, local communities-is obviously conducive to conflict prevention.

Thus, although the dangers for the environment and the people of the Okavango basin are far from being overcome, one can at least be so optimistic as to rule out the likelihood that any future developments will lead to the blunt suppression of the interests of the affected people or a resort to violent conduct of conflict. Swatuk is right when he says that "the Okavango delta example in particular may form the basis for a wider strategy of environmental peacemaking in Southern Africa" (Swatuk 2002b, p. 155). As in the Kunene case, those actors who might have the material power to use violence will feel inclined to abstain from making use of their power, and those actors who might feel desperate enough to resort to violence because they see no other way to articulate their grievances are given the opportunity to voice their concerns in a non-violent way with assistance from (international) civil society.

Water governance—A multi-faceted institutional effort

What can be learned from the Kunene and Okavango cases and from the experiences of local customary water management is that a state-centric, essentially bureaucratic approach to water governance is not sufficient. To design formal institutions for IWRM such as RBOs is important, but it is not enough. The realities on the ground are characterized by the co-existence of (relatively weak) formal state institutions and (relatively strong) informal customary institutions and (international) civil society actors, which all are involved in water management.

The situation is even more complicated as both the state and the customary institutions exert influence on each other and are thus subject to processes of adaptation and re-formation. The relative importance of formal and informal institutions differs with regard to the level or framework in question, with-as a rule of thumb-formal institutions being more important and influential on the larger scale and informal on the smaller scale. The international (basin wide) and national levels are dominated by formal state institutions, whereas informal institutions often prevail on the local and sub-catchment level. However, as one basic idea of IWRM is the integration of the different levels it is not sufficient to focus on the higher levels and the formal institutions. This would lead to sub-optimal results as activities on the lower levels inevitably impact on the higher levels anyhow, and it is neither desirable nor possible to pursue a centralized top-down approach which would simply impose higher level politics on the lower levels. Development policies and conflict resolution policies that focus on the needs and advancement of the ordinary people, who are the water users on the ground, have to take the latter's ways of resource management into account. Their informal institutions matter, too. Hence "local informal institutions should not be thrown away as primitive and obsolete"

(Sokile/van Koppen 2003, p. 7). Maganga is perfectly right: "Neglect of customary laws may cause IWRM implementation to fail" (Maganga 2002, p. 1)

The general guideline for prudent water governance policies should therefore be to deliberately further and improve what is already a given anyhow, namely the multi-faceted institutional mix of formal state-based, informal customary and civil society institutions and actors. This will not result in a single unitary structure, but in a multi-faceted network that in the best case will include most stakeholders with an interest in the management of a shared water resource, from the local to the international transboundary level, also including extra-basin actors such as international organizations, development agencies and international NGOs.

Institutional bricolage

The process by which such a multi-faceted institutional network of water governance evolves can best be comprehended by Cleaver's term of 'institutional bricolage'. Institutional bricolage suggests "how mechanisms for water resource management are borrowed or constructed from existing institutions, styles of thinking and sanctioned social relationships" (Cleaver 2000, p. 380, see also Cleaver 2002, p. 16). Institutional bricolage conceptualizes institutional formation "as a (frequently opaque) socially embedded process rather than a deliberate and transparent managerial activity, institutions are shaped by historic factors, by the power relations which prevail in social life and by world views which incorporate the roles of the human, natural resources and the supernatural" (Cleaver/Franks 2003, p. 3).In the processes "of borrowing and adaptation the

distinction between what is modern and what is traditional becomes blurred, tradition becomes reinvented. Additionally the line between formal organisation and socially and culturally embedded networks through which co-operation is forged become blurred" (Cleaver 2002, p. 24). An institutional bricolage approach is more suitable to the situation on the ground in the regions in question than approaches involving mere institutional design. An institutional bricolage approach does not follow the commonly held western view that where there are no state or modern civil society institutions there are no institutions at all (at least no robust and effective institutions), but makes existing local institutions visible and takes them seriously. Following this path one might approach-step by step-water governance in transboundary river basins that is truly democratic, participatory and people-oriented, on the one hand, and efficient and effective, on the other hand. However, the path is covered with several stumbling blocks.

Information and accountability are one. Local communities are rich in knowledge about local circumstances: their customary knowledge is an important asset for efficient and sustainable water management. However, they lack information about conditions in parts of the basin that are far away from their area and information about the basin and its political, economic and environmental context in general. On the one hand, this might lead to a short-sighted approach that takes only the direct interests of the community into account without acknowledging the impact in other parts of the basin. Stakeholders who are involved on lower levels (local, sub-catchment) are in danger of loosing sight of the bigger picture. On the other hand, the exclusion from information makes local communities easy victims of external actors such as state authorities or private business, who have their own vested interests

and claim to be in possession of the 'correct' information, and who make use of their knowledge in order to manipulate local communities. Only if communities have access to comprehensive information that covers the whole basin and if they can blend local indigenous and external 'expert' knowledge can they meaningfully participate in water governance and hold higher level institutions and actors accountable who are always in danger of losing sight of the realities on the local level. The provision of information and the organization of information exchange between local communities across long distances in the basin is of utmost importance. NGOs and independent experts can provide valuable assistance to local communities in this regard. The example of the Okavango case is proof of this. Furthermore, those NGOs can assist in advocacy. They can provide links to the media and forums for information and discussion. "If access can be obtained to media or decision-makers, then advocacy may be able to mobilize allies and reframe issues in ways that favor community concerns" (Bruns 2005, p. 13-8). The Epupa/Himba case is a good example for the effectiveness of such assistance.

Closely related to the issue of information and accountability is the problem of legal knowledge. Given the fact that water management can and will not be governed exclusively by customary law, knowledge of statutory law is a must (and vice versa, of course). Experience shows that in many places in Southern African countries rural people are not aware of water laws and recent reforms in water legislation. This makes them extremely vulnerable. Hence "what may be most relevant for communities is to have knowledgeable local people and outside counsellors who know the existing legal framework, and what bases it may offer for communities for securing water rights" (Bruns 2005, p. 13-8). What is necessary therefore is legal empowerment, "improving the capacity of communities to know and use the law" (Bruns 2005, p. 13-8).

Lack of social ties between distant communities in a given basin is another problem. As we have seen, customary water management and respective conflict resolution depends on the existence of a "we-group" with shared norms and mutual obligations (and hence effective mechanisms of sanctioning non-compliance). This prerequisite is not given with regard to distant communities which only too often belong to different ethnic groups, have different cultural backgrounds and make use of the river water for different purposes (e.g. pastoralists on the one hand, irrigation farmers on the other). Thus problems of scale "lead to problems of inclusion-how to take account of the needs of 'others'" (Cleaver/Franks 2003, p. 18). It is a difficult task to foster linkages and nurture a common understanding of togetherness and mutual dependence among such distant communities. It is difficult to develop an overarching institutional framework within which 'strangers' can come together and (agree to) cooperate. However, this is not impossible as, at the end of the day, all communities depend on a healthy river system. Again, the communication and exchange between those distant communities is important. To forge networks and to establish arenas for information exchange, discussion and agreement is a prerequisite for meaningful participation of stakeholders in water governance. Again, outside facilitators like NGOs can provide useful assistance in this respect.

Problems of participation

All of the stumbling blocks mentioned so far have to do with scale, or to be more precise: the distances within a given (international) river basin. Forging basin-wide networks of governance that meaningfully include water users on the ground is only too often impossible to achieve. What works in the local context-customary mechanisms of water management and respective conflict resolution-cannot simply be transferred to the basin level. Cleaver/Franks observe with regard to the Usangu basin in Tanzania: "…

the physical scale and size of the basin mean that local-level institutions dealing with local issues find it difficult to engage with the issues facing others in the basin who are perhaps 100 km away, and for whom indeed the key issues may be very different" (Cleaver/ Franks 2003, p. 17). This holds even more true for very large basins, e.g. the Zambezi. The difficulties and options of 'upscaling' local governance mechanisms will need further thorough research.

It is obvious that as the scale of basins prevents direct participation of all stakeholders, some kind of representation is inevitable. However, representation can be organized in different ways. The traditional answer to the problem is to delegate representation to the respective state authorities. Diplomats and bureaucrats from the responsible ministries and boards represent the citizens of their state in international negotiations and organizations that deal with the given transboundary basin, the underlying assumption being that they act on behalf of the water users from that part of the basin that falls under the jurisdiction of the state they represent. This is both inevitable and appropriate, but maybe it is not enough. Additional avenues for representation should be opened, given the distance between the politicians and bureaucrats in the ministries and the local communities on the ground and given the plural character of water management (not only formal, but also customary). In other words: Representation can either be confined to the common state-based institutions and procedures (which only too easily leads to manipulation and exclusion of local grassroots stakeholders), or it can be multi-faceted, providing multiple forums which also allow for an optimal representation of relatively weak stakeholders, in particular local communities and the rural poor. Exchange programs, transnational fora and workshops, electronic communication and participation in 'official' delegations are cases in point.

Again, external actors such as NGOs and development agencies could act as facilitators.

But even in the best case, the issue of participation remains a problem. Participation can be token or substantial. Nowadays everybody is paying lip-service to 'participation'; development agencies speak out strongly in favor of participation, and state bureaucracies in developing countries promise to provide for participation of stakeholders. However, only too often in real life participation of stakeholders is perceived as a burden by experts and state authorities, and it is reduced to hollow tokenism. Grassroots people who are obliged to 'participate' in such a meaningless way quickly realize that they are being used and manipulated and abstain from respective endeavors, all the more so as the transaction costs of participation are usually high. "Participation imposes substantial transaction costs, particularly for the poor, and may not be worthwhile for participants, not just due to problems in organizing collective action but also due to the risks of manipulated and meaningless participation, and policies that transfer responsibility without authority" (Bruns 2005, p. 13-3). Participation in a village meeting on the allocation of water resources might be possible for every village member (although it might pose problems for women with small children), participation in more formal institutions such as WUAs poses a problem for many (because of time, distances, alien proceedings,…), and all the more so participation in far-away state bodies and negotiations.

"Many efforts labeled as participation or decentralization fail to convey genuine power (…) A key question is "who decides?" Empowerment is far more meaningful if both sides must agree, or when decisions are delegated, authority transferred, or local institutions enabled to make decisions on their own" (Bruns 2005, p. 13-9). That is what L. Swatuk refers to as the "devolution of power" in contrast to mere "decentralisation of tasks" (Swatuk 2004). Hence the demand to "… devolve (and not just deconcentrate) water management authority to the lowest appropriate level, in particular inclusive local community-based arrangements…" (Plenary Statement 2005, p. 3).

Neither the formal state institutions nor the informal customary institutions per se provide guarantees for all-inclusive participation. "Bureaucratic institutions created through design and socially embedded arrangements formed through bricolage may both reinforce and perpetuate social divisions" (Cleaver 2002, p. 20), and "while bureaucratic arrangements are not necessarily inclusive, fair and emancipatory, socially embedded institutions may reproduce social divisions or gloss over inequality" (Cleaver 2002, p. 28). Participation can only become meaningful and credible on the basis of empowerment. Empowerment of the poor and disadvantaged groups of water users challenges both state and customary institutions.

Conclusions and the way ahead: Focus on transboundary formations

A summarizing assessment of the state of water management and water-related conflicts and their solution in Southern Africa has to be twofold. On the one hand, it has to be an assessment that addresses the realm of formal (international) policy. And on the other hand, it has to address the much less visible realm beyond that policy, a realm largely ignored by policy makers and political scientists alike, but nevertheless of considerable importance for the issues at stake.

Institution building: A Southern African success story

With regard to the first dimension, this paper reaffirms an assessment which today is shared by the mainstream of research, namely: Water wars are improbable in general, and even more so in the Southern African context. "Where local-scale disputes over access to water have occasionally resulted in bloodshed and loss of life, the growing ethos of inter-state cooperation and collaboration supports the assertion that it is highly improbable that Southern African states would ever engage each other in true 'water wars' " (Ashton/Turton 2004, p. 17).

A unique aspect of the Southern African situation relates to the way recent political history has shaped the national and regional approaches to water resource management. Apartheid, colonialism and delayed decolonization and the associated violent conflicts have left deep wounds in Southern African societies. Against this historical background of all-encompassing structural and overt violence, political elites and the overwhelming majority of ordinary citizens alike are tired of violent conduct of conflict. This, on the other hand, means that there is a mental openness towards integration and

cooperation that serves as a fertile ground for integrated management of shared transboundary water resources, which under other circumstances might easily lend themselves as subjects of escalating conflict. Furthermore, the role of the regional hegemonic power has to be considered. The RSA as the "benevolent hegemon" is to a large extent determining the course of developments in Southern Africa. The RSA is the most developed and industrialized country of the SADC region, and at the same time it is one of the most water-stressed countries, with water availability being a potential limiting factor to its economic growth, and hence with an extraordinarily high demand for "foreign" water. It is also the most influential single political player in the SADC region. And this player has committed itself to an integrative-cooperative approach in the utilization of its power potential, not least with regard to water resources.

Formal institution building (and hence conflict prevention) has already come a long way in Southern Africa. "High level political commitment, technical expertise, community commitment and stakeholder accountability are the human elements that create an enabling environment for the establishment of river basin institutions, but it is extremely useful when there is an accepted regional framework of treaties, protocols and agreements for cooperation. This framework exists in the SADC and paved the way for the creation of river basin organizations (RBOs)" (Heyns 2004, p. 9).

Scrutiny and involvement of donors, who are in an especially powerful position "because they have knowledge and capital" (Swatuk 2002a, p. 522), international organizations and international civil society as well as

participation of local civil society contribute considerably to co-operative water management and non-violent conduct of conflict.

One must not gloss over the fact that much of the institution building is driven by external actors and agendas. An international community which is increasingly concerned about the potential for conflict over scarce water resources and about the environment substantially influences transboundary IWRM in Africa (Lautze/Giordano/Borghese 2005, p. 26-6). In some cases, one has to assume "that external drivers have played the dominant role in agreement formation" (ibid. 26-9), e.g. the Volta, Nile, Niger. "The interesting issue is the degree to which the formation, content, and realization of transboundary water law in post-colonial Africa is determined by external drivers. Such drivers, it should be noted, are not only external to treaties-they are external to Africa itself. They are in fact generally the product of international-read: developed world-agendas" (ibid., p. 26-10), in particular environmental concerns and conflict prevention. "… it may often be necessary for poorly financed African states to orient their transboundary agreements towards external interests if they are to secure the means for realization" (ibid. 26-10).

Although this leaves open questions with regard to ownership and sustainability, the results so far give good reasons for optimism: The "basins at risk" identified by Aaron Wolf and his colleagues may be critical cases, but they are on the path to resolution rather than to escalation. This is the good news. However: Potential conflicts on the sub-national and local level will need much more attention in the future. To cope with the causes of localized (potentially

violent) conflict needs a different approach. The formal hydropolitical institutions and strategies which have been established in Southern Africa so far will not suffice in this regard.

Problems and shortcomings

At present there is still a "disjuncture between policy and practice" (Swatuk/ Rahm 2004, p. 1357): a considerable gap between declaratory policies, legislation, establishment of new organizations, on the one hand, and the implementation and practices on the ground, on the other. Water resources policy implementation is making little progress. Furthermore, cooperation is very much an inter-governmental undertaking involving various agencies and institutions of the riparian states and often confined to merely technical questions. Swatuk/ Vale summarize respective criticisms as follows: Activities "are elitist, high-political projects that exclude and/or ignore the needs of indigenous people-usually rural, small, subsistence farming communities-and the impacts on the natural environment (...) they are overly technocratic and single-issue oriented; they are dominated by engineers whose main concern is to move water from point A to point B..." (Swatuk/Vale 1999, p. 380). This dominance of a technical and managerial approach tends to conceal the highly political nature of the whole endeavor, which is presented as a neutral and merely technical 'expert' issue. Non-state actors on the local and regional level who are also stakeholders with vested interests in the use of river water are more or less left out of the processes of policy formulation, decision-making and implementation. "One noticeable omission by all the countries was the lack of participation by local level communities at the national and inter-state levels. This needs to be corrected." (Manzungu 2004, p. 18).

Public participation and transparency are lacking and methods of settling disputes are underdeveloped, not at least with regard to intra-national conflicts regarding the use and protection of rivers, as well as the repercussions on local communities of decisions on water use patterns made by state authorities and private corporations without due participation of the people affected. If the latter are excluded, deliberately or not, from policy processes they might easily turn to confrontative strategies to pursue their interests and defend what they perceive as their traditional rights. This might easily lead to intra-national conflicts which can also impact on international relations. Thus domestic hydropolitics has an impact on international hydropolitics. The same holds true the other way round: inter-governmental agreements on transboundary river courses can have impacts on the local level which could lead to intra-national conflicts. All international agreements when implemented domestically benefit some places and people more than others, and their costs are unequally distributed in geographical and social terms.

For example, revenues from large infrastructure water projects often only benefit a small elite, while local communities have to bear the negative social and environmental effects. National or regional water resource management may easily lead to a sense of loss of ownership on the side of the affected local populace. If resources are controlled by international agreements, people on the ground might loose traditionally held avenues to local natural resources. "At local levels within a country, many stakeholders perceive that national and inter-state approaches to the management of a shared water resource result in local stakeholders having to bear the real 'costs' because their access to this resource is now controlled in terms of an inter-state agreement" (Ashton/Turton 2004, p. 15). International cooperation may thus engender conflict within individual states. In order to prevent this from happening it is necessary that "wherever public perceptions persist that national or regional water resource management initiatives (...) lead to the 'loss of ownership' or 'prevention of access' to local natural resources, these perceptions need to be addressed very carefully ..." (ibid., p. 16).

In other words: One has to take into account the problems inherent in the linkages between the different levels of water use, water management and hydropolitics. What is good on the inter-governmental level might be counter-productive on the domestic level-and vice versa. We have the strong impression that these dilemmas have so far not been adequately addressed. The linkages and relationships between co-operation and conflict on the international level, and conflict and co-operation on the sub-national level need to be understood more fully, and concepts need to be developed which provide for the inclusion of all stakeholders at all levels in the processes which constitute the hydropolitics of a transnational river basin. Only a comprehensive analysis that takes into account the multi-layered and multi-actor characteristics of hydropolitics can contribute to co-operative approaches to transboundary water governance. The various levels of hydropolitics-from the local to the global-are closely linked and interwoven, and it is not only governmental agencies that are hydropolitical players, but also international organizations, civil society NGOs, the private sector and local communities. It is a fact of life that extra-basin actors such as national and international development agencies, international NGOs and foreign private businesses are also players in river basin politics. They are interwoven into the fabric of water use and management in the basin; they explicitly or implicitly interact with state authorities and informal institutions and hence contribute to shaping the concrete features of water governance on the ground. The Kunene and Okavango cases have amply demonstrated these linkages

and this interplay. "Nonterritorial communities" (Blatter/Ingram/Levesque 2001, p. 40)-such as epistemic communities or coalitions of NGOs-come together with territorial communities (local communities on the ground in river basins) and form networks that lead to a more direct connection of the local and the global level. The state is no longer the gatekeeper between the domestic and the international realm.

Custom matters

We share the view of Cleaver/Franks "… that simple notions of 'river basin organizations' based on institutional design principles will not be appropriate for the time being and that the future response will be some form of bricolage of existing and evolving institutions linked together in complex and fluid networks" (Cleaver/Franks 2003, p. 19-20).

And this is where the second dimension mentioned above comes to the fore, the dimension that is not explicitly covered by official (international) policy. The fact that modern state structures are not the all encompassing framework for water management in the basins in question has to be acknowledged and taken seriously as a starting point for further deliberations. In other words, the state-centric perspective has to be overcome. Under conditions of relatively weak statehood, informal traditional institutions can serve as functional equivalents that compensate for the non-existence or inefficiency of formal state structures-at least to a certain extent. Only too often formal state institutions and informal non-state institutions co-exist or overlap. This results in hybrid structures of political order. Actors interested in development, good water governance and state-building so far have mostly ignored that hybridity or blamed it as a negative impediment. We propose a different approach: To make the best of the fact of incomplete and weak state structures and the

hybridity of political order. This means to deliberately include those traditional informal customary local institutions and actors that represent 'the other' political order-outside the state structures-into networks of governance.

Obviously such traditional actors and institutions are of importance for water management in Southern Africa. They can be found alongside and intertwined with modern state institutions. Of special significance is the co-existence of modern statutory (water) law and traditional customary law that also regulates access to and distribution of water resources. This co-existence can be a source of conflict as it leads to uncertainties about the 'right' law. However, it can also contribute to conflict prevention and conflict regulation if synergies are deliberately elaborated.

However, as this paper demonstrates, in today's water management "formal institutions tend to overshadow local informal ones, although the latter guide day-to-day interactions on water use", and IWRM "has demonstrated a bias toward the formal state-based institutions for water management" (Sokile/van Koppen 2003, p. 1). Furthermore, "recent statutory water reform in most African countries still ignores community-based water arrangements, exclusively focusing on centralized statutory water permits, water levies, and new basin institutions" (Plenary Statement 2005, p. 2).

This is a crucial shortcoming that hampers optimal water development and management in the interest of the majority of small water users as well as the prevention, management and resolution of water-related conflicts. Ambitious projects for basin master planning and IWRM "may fit poorly with the dynamics of community collective action, and so be prone to being ignored, resisted, and rejected" (Bruns 2005, p. 13-10). "The current water reforms in most Southern African countries focus on the use of statutory legal systems to regulate the

use of water resources. However, these countries have pluralistic legal systems-land and water resources are regulated by different pieces of legislation and institutions, including statutory law, customary laws of different ethnic groups and Islamic law (…). Neglect of customary laws may cause IWRM implementation to fail" (Implications 2004, p. 2).

Hence the most advanced research recommends "that the formal and informal institutions should be amalgamated to bring forth a real Integrated Water Resource Management framework" (Sokile/van Koppen 2003, p. 1). It is posited that "a 'systematic combination' of customary and statutory institutions in the development and management of natural resources may facilitate cross-cultural understanding, thereby improving the socioeconomic development of the country" (Edossa et al. 2005, p. 29-11). And it is regretted that "there are no full-fledged mechanisms as yet to better align the formal and informal" (Sokile/Mwaruvanda/van Koppen 2005, p. 28-11). However, the big question is how this "amalgamation" or "systematic combination" or "alignment" or-as it was called in this paper-"positive accommodation" can actually be brought about, and how local informal customary practices could be upscaled to the transboundary river basin level. Local practices cannot simply be "applied" on the basin level. The process of upscaling will need considerable adjustment and transformation. We have alluded to the concept of 'institutional bricolage', but we cannot present clear and concrete answers to the big question. Further research and further conceptual work is needed, avoiding any romanticism that presents customary community-based approaches to water management as a panacea.

Transboundary Formations

A starting point for such work and research might be the permeability of boundaries in the regions in question. Weak states are characterized by weak border regimes. Again, we propose that this should not be seen primarily as a negative fact, but that one should explore the positive potential of this given fact with regard to water governance.

"… where boundaries exist they are permeable and often fluctuating and (…) overlaid with the multiple social networks through which people access resources and manage their livelihoods" (Cleaver/Franks 2003, p. 10). This holds especially true for river boundaries. Seen as 'natural' borders by the colonial powers, several rivers in Southern Africa still form the boundaries between states. These boundaries cross-cut through pre-colonial and pre-statal traditional social networks that linked people on both side of the river via trade, kinship, culture, marriage, etc. These people all of a sudden found themselves as 'citizens' of different states, divided by a political boundary. Rivers "which used to play the role of life-giving regional arteries, came to be viewed by Europeans as convenient boundaries: hence, families, clans, and ethnic groups straddling the Cunene, Orange, Zambezi, and Limpopo Rivers were separated by the exigencies of Westphalian state building" (Swatuk/ Vale 1999, p. 365-366).

Although colonial and post-colonial state authorities put much effort into stabilizing those borders, people on the ground have demonstrated considerable resilience in upholding cross-boundary ties (and even developing new ones, e.g. smuggling). The Himba along the Kunene River provide a good example. While state authorities are keen to shape a 'national economy' and a 'nation state' in which people look to the capital as the center of the 'nation', and border regions are only too often neglected as 'peripheral', people in the boundary river basins are much more oriented to their immediate region, which also encompasses the parts of the basin on the other side of the river boundary. People on that other side are not so much perceived as citizens of another state, rather they are seen as relatives or partners in trade, smuggling, etc. State authorities are suspicious of transboundary/river linkages, as 'the border' is of high symbolic value for states, and weak states in particular are keen to control their borders tightly, as the capacity to do so is perceived as proof of state authority. Hence the interests of state authorities and local people tend to contradict , and this might lead to conflicts, not least water-related conflicts, if state authorities want to enforce their formal statutory rules of water allocation, etc. On the other hand, positive outcomes can be achieved if state authorities are willing to accept the informal institutions and cross-boundary ties in the river boundary area and to deliberately utilize them for the good of the state and the people alike.

Local governance in such a setting is at the same time transboundary governance, relatively independent of the government structures of the states in question. The question how transfluvial and at the same time transboundary customary institutions of water management and conflict resolution can be combined with structures of state-based international water management needs further attention, the underlying assumption being that transfluvial/transboundary local water governance in the regional context of a border river can contribute to modern transboundary water governance in international river basins. It seems to be prudent to concentrate on such 'cross(river)-border constellations' as several of the problems mentioned in chapter 7 (long distances, lack of social ties, meaningful stakeholder participation, high transaction costs) are easier to tackle in this relatively confined context. In particular, participation of local communities on the international level, something that is so hard to achieve in the broader context of entire transboundary river basins, can be realized in this more confined context of the river border, as any exchange between local communities on different banks of the river is at the same time also 'international'.

Similar to the 'institutional bricolage' approach, the guiding idea is to make use of structures and institutions that are in place anyhow. This is what the concept of 'transboundary formations' is about . The 'state' is only one entity in the context of those transboundary formations. Sub-national communities-which at the same time are also trans-national communities (e.g. the Himba at the Kunene River)-are also elements of those formations as well as extra-basin actors.

Transboundary formations are characterized by institutional diversity and an overlapping and intertwining of local, national state and international realms, the interesting point being "the intersection of these spaces" (Kassimir/Latham 2001, p. 270). Hence what manifests itself in transboundary formations is not 'disorder' as the conventional wisdom of political practitioners and scientists might assume, but a "variety of orders in operation that do not fit our standard models" (ibid., p. 275). The thrust of this paper was to make researchers and practitioners aware of this 'variety of orders' with regard to water management so as to provide them with additional insights for conceptualizing and implementing future good water governance.

Recommendations for extra-basin actors

There are two basic prerequisites which external actors who want to assist in the formation of transboundary good water governance have to take into account. On the one hand, the variety of culturally shaped forms of water use: There is no 'water as such', it is always culturally embedded.

Water is not only a commodity. The "noncommodity meaning of water may depend very much on shared beliefs transported by symbols, religion, and myths" (Blatter/Ingram/Levesque 2001, p. 46-47), and these dimension depend completely on the local cultural-societal context. On the other hand, one has to take into account the networks of power and the structures of decision-making in the places in question: There is no apolitical neutral water governance, it is always subject to political contest.

Out of these two basic insights arise additional points: External actors have to be aware of, understand and learn about the pluralistic character of institutions and actors that are involved in water management issues in river basins that are situated in weak states. In other words, they have to acknowledge that local governance matters, and that this local governance does not function along the lines of developed western state environments. They have to learn to see what is not visible at first sight from a western perspective that usually focuses on structures of the state, the formal economy and civil society. Hence it is a prerequisite to "train both scholars and practitioners in studying local community-based water arrangements" (Plenary Statement 2005, p. 3). They have to encourage national policies to "… formally recognize the validity and legitimacy of local community-based water arrangements (…) as equal to, or alongside, statutory rights and foster synergy between the systems" (Plenary Statement 2005, p. 2). Last but not least, extra-basin actors have to take into account that even in their collaboration with official institutions of the state (ministries, departments, bureaucracies, district or local governments, etc.) it is not only the formal dimension that matters, but that there is an undercurrent of the 'informal' present at all times. For the politicians, bureaucrats and experts who are their partners in those

state bodies are not only specialized professionals but also people from a cultural and social background in which custom and informal institutions are still important (even if the ties to customary local life are very loose or custom is rejected in the name of modernity). And they have to learn to engage with informal institutions, traditional authorities and customary ways. That is a very big challenge as "local informal groups are often amorphous, temporary, and difficult to appreciate by outsiders" (Sokile/van Koppen 2003, p. 6).

Although it would be short-sighted and impractical to call for their complete withdrawal, outsiders will have to humbly confine themselves to rather narrow niches of activities in which their contribution can really make a difference. And they will have to commit themselves to long-term engagement. Inclusive participatory water governance cannot be achieved by means of a 'quick fix' approach.

Developing knowledge that is not at hand in the local context (e.g. about statutory water legislation and basin-wide data as well as negotiation practices) and building capacity amongst the most disadvantaged stakeholders (rural poor, local communities, ethnic and other social minorities and marginalized groups, women) is a main task (Cleaver/Franks 2003, p. 19). Knowledge and capacity are the building blocks of empowerment. Empowerment is a must as water management is not a neutral technical exercise, but a highly contentious and politicized issue. It is conducted in the context of an arena of permanent struggle among competing users/interests who have differing power potentials at their disposal. Hence assistance from outside has to "… prioritize and protect water uses that are most beneficial for the livelihoods of the poor against more powerful users, for example by facilitating dialogue according to local community-based arrangements, such as proportional allocation" (Plenary Statement 2005, p. 3). It is essential

that local communities are brought back into "management and decision making as actors" (Mohamed-Katerere/van der Zaag, p. 23).

Such an approach could assist in the development of a new way of thinking about water resources management. Swatuk/van der Zaag point to some decisive elements of this new thinking: "It requires a rearticulation of security-away from state security and military power toward human security and the empowerment of individuals and communities. It requires a relocation of 'water'-from states to ecosystems or communities or river basins; from 'expert' men in urban settings to rural women and traditional knowledge; from the realm of foreign policy toward progressive development discourses; from water as an economic good to water as a common property resource" (Swatuk/van der Zaag, p. 3).

This would not only contribute to good water governance in the interest of development and conflict prevention, but also to the strengthening of democratic participatory state structures. Strengthening such structures again is the best recipe for conflict prevention and peace building-well beyond the realm of water governance.

Abbreviations and Acronyms

AfDB	African Development Bank
AMCOW	African Ministerial Council on Water
AU	African Union
AWIRU	African Water Issues Research Unit
BAR	Basins at Risk
DRFN	Desert Research Foundation of Namibia
ENWC	Eastern National Water Carrier
EUWI	European Community Water Initiative
GCI	Green Cross International
GEF	Global Environment Facility
GTZ	Gesellschaft fuer Technische Zusammenarbeit
HOORC	Harry Oppenheimer Okavango Research Centre
ICJ	International Court of Justice
IMP	Integrated Management Plan
IRN	International Rivers Network
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resources Management
JPTC	Joint Permanent Technical Commission/Committee
JWC	Joint Water Commission
KCS	Kalahari Conservation Society
LBPTC	Limpopo Basin Permanent Technical Committee
LHDA	Lesotho Highlands Development Authority
LHWC	Lesotho Highlands Water Commission
LHWP	Lesotho Highlands Water Project
LIMCOM	Limpopo Watercourse Commission
MAR	Mean Annual Runoff
MCM	Million Cubic Meters
MNE	Multinational Enterprise
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organisation
NNF	Namibia Nature Foundation
NWA	National Water Act
OBSC	Okavango Basin Steering Committee
OECD	Organization for Economic Cooperation and Development
OKACOM	Permanent Okavango River Basin Water Commission
ORASECOM	Orange-Senqu River Commission
PJTC	Permanent Joint Technical Commission
RBO	River Basin Organization

RISDP	Regional Indicative Strategic Development Plan
RSA	Republic of South Africa
RSAP	Regional Strategic Action Plan
SADC	Southern African Development Community
TCTA	Trans-Caledon Tunnel Authority
TDA	Transboundary Diagnostic Assessment
TFDD	Transboundary Freshwater Dispute Data Base
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WD	Water Division
WEERD	Water and Ecosystem Resources in Regional Development
WSCU	Water Sector Co-ordination Unit
WUA	Water User Association
WWDR	World Water Development Report
ZACPLAN	Action Plan for the Environmentally Sound Management of the Common Zambezi River System
ZAMCOM	Zambezi Watercourse Commission
ZRA	Zambezi River Authority

References

AKUF. Arbeitsgemeinschaft Kriegsursachenforschung. 2004. "Wars and Armed Conflicts in 2004 and Ending 1994 to 2004." Background Paper for the BICC *conversion survey 2005*. Hamburg, November.

Ashton, Peter. 2000. "Southern African Water Conflicts: Are they inevitable or preventable?" In: Solomon, Hussein and Anthony Turton (eds.). Water Wars: Enduring Myth or Impending Reality. Africa Dialogue Monograph Series No. 2. Durban: Accord, pp.65–102.

_____. 2002. "Avoiding conflicts over Africa's water resources". Ambio Vol. 31, No 3, pp. 236–242.

_____. 2003. "The search for an equitable basis for water sharing in the Okavango River basin". In: Nakayama, Mikiyasu (ed.). 2003, pp. 164–-188.

Ashton, Peter and Bennie Haasbroek. 2002. "Water demand management and social adaptive capacity: A South African case study." In: Turton, Anthony R. and Roland Henwood (eds.). 2002, pp. 187–204.

Ashton, Peter and Anthony Turton. 2004. "Transboundary Water Resource Management in Southern Africa: Opportunities, Challenges and Lessons Learned." Paper presented at the International Expert Workshop Bonn 1–2 March: "Water, Development and Cooperation: Comparative Perspective: Euphrates-Tigris and Southern Africa" (www.waterworkshop-bonn.de).

Baechler, Guenther et al. 1996. Kriegsursache Umweltzerstoerung. Oekologische Konflikte in der Dritten Welt und Wege ihrer friedlichen Bearbeitung. Chur – Zuerich: Rueegger.

Benda-Beckmann, Franz von. 2002. "Who's afraid of legal pluralism?" In: Journal of Legal Pluralism and Unofficial Law, No. 47, pp. 37–82.

Benda-Beckmann, Franz von, Keebet von Benda-Beckmann and Anne Griffiths (eds.). 2005. Mobile people, mobile law. Expanding Legal Relations in a Contracting World. Aldershot – Burlington, VT: Ashgate.

Bernauer, Thomas. 2000. "Managing International Rivers." In: Young, Oran C. (ed.).Global Governance. Drawing Insights from the Environmental Experience. Cambridge, MA. – London: MIT Press, pp.155–195.

Blatter, Joachim and Helen Ingram (eds.). 2001. Reflections on Water. New Approaches to Transboundary Conflicts and Cooperation. Cambridge, MA: MIT Press.

Blatter, Joachim, Helen Ingram and Suzanne Lorton Levesque. 2001. "Expanding Perspectives on Transboundary Water." In: Blatter, Joachim and Helen Ingram (eds.). 2001, pp.31–53.

Boege, Volker. 2004. Muschelgeld und Blutdiamanten. Traditionale Konfliktbearbeitung in zeitgenössischen Gewaltkonflikten. Hamburg: Deutsches Übersee-Institut.

Boege, Volker and Lars Wirkus. 2005. Afrikas internationale Flüsse und Seen. Stand und Erfahrungen im grenzüberschreitenden Wassermanagement in Afrika an ausgewählten Beispielen. DIE Discussion Paper 7. Bonn: Deutsches Institut für Entwicklungspolitik.

Bruns, Bryan. 2005. "Community-based principles for negotiating water rights: some conjectures on assumptions and priorities." Paper presented International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

Bruns, Bryan Randolph and Ruth S. Meinzen-Dick (eds.). 2000a. Negotiating water rights. New Dehli: SAGE.

_____. 2000b. "Negotiating water rights: Introduction." In: Bruns, Bryan Randolph and Ruth S.Meinzen-Dick (eds.) 2000a, pp. 23–55.

Bulloch, John and Adel Darwish. 1993. Water Wars: Coming Conflicts in the Middle East. London: Victor Gollancz.

Burchi, Stefano. 2005. "The interface between customary and statutory water rights – a statutory perspective." Paper presented at the International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

Callaghy, Thomas M., Thomas Kassimir and Robert Latham (eds.). 2001. Intervention and Transnationalism in Africa: Global – local Networks of Power. Cambridge: Cambridge University Press.

Carius, Alexander, Geoffrey D Dabelko and Aaron T. Wolf. 2004. Water, Conflict, and Cooperation. Policy Brief: United Nations and Environmental Security, ECSP Report Issue 10. Washington, DC: ECSP.

Chesterman, Simon. 2004. You, the people: The United Nations, Transitional Administration, and State-Building. Oxford: Oxford University Press.

Chiuta, Tabeth Matiza. 2000. "Shared Water Resources and Conflicts. The case of the Zambezi River Basin." In: Tevera, Daniel and Sam Moyo (eds.). Environmental Security in Southern Africa. Harare, pp. 139–155.

Cleaver, Frances. 2000. "Moral Ecological Rationality, Institutions and the Management of Common Property Resources." In: Development and Change, Vol. 31, No. 2, pp. 361–383.

_____. 2002. "Reinventing Institutions: Bricolage and the Social Embeddedness of Natural Resource Management." In: European Journal of Development Research, Vol. 14, No.2, pp. 11–30.

Cleaver, Frances and Tom Franks. 2003. "How institutions elude design: river basin management and sustainable livelihoods." Paper presented at The Alternative Water Forum, Bradford, United Kingdom.

Cooley, John K. 1984. "The War over Water." In: Foreign Policy, No. 54, pp. 3–26.

Cosgrove, William J. (no date), Water Security and Peace: A Synthesis of Studies prepared under the PCCP-Water for Peace Process. PCCP Series No 29. Paris: UNESCO.

Croll, Peter and Wirkus, Lars. 2003. "Wasser im südlichen Afrika – Konflikt- oder Entwicklungspotential?". In: Hauswedell, Corinna et al. (eds.), Friedensgutachten 2003, pp. 180–189.

Debiel, Tobias and Axel Klein (eds.). 2002. Fragile Peace. State Failure, Violence and Development in Crisis Regions. New York: Zed Books.

Derman, Bill and Anne Hellum. 2005. "Negotiating Water Rights in the Context of a New Political and Legal Landscape in Zimbabwe." In: Benda-Beckmann, Franz von, Keebet von Benda-Beckmann and Anne Griffiths (eds.). 2005, pp. 177–198.

Derman, Bill, Anne Hellum and Pinimidzai Sithole. 2005. "Intersections of human rights and customs: a livelihood perspective on water laws." Paper presented

at the International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

Deutsche Gesellschaft für Technische Zusammenarbeit. 2002. Managing Transboundary Waters – New Opportunities for Africa. Eschborn: GTZ.

Duffield, Mark. 2001. Global Governance and the New Wars. The Merging of Development and Security. London – New York: Zed Books.

Edossa, Dealegn Chemeda et al. 2005. "Indigenous systems of conflict resolution in Oromia, Ethiopia." Paper presented at the International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

Froehlich, Christiane. 2005. "Wasser verteilungskonflikte. Deeskalation und Gewaltprävention." In: Ratsch, Ulrich et al. (eds.): Friedensgutachten 2005. Muenster: Lit-Verlag, pp. 237–246.

Fukuyama, Francis. 2004. State-building: governance and world order in the 21st century. Ithaca, NY: Cornell University Press.

Halcro-Johnston, Jim et al. 2004. Regional Strategic Action Plan on Integrated Water Resources Development and Management (RSAP-IWRM). Mid-Term Review. Review Report. Gaborone: SADC.

Henwood, Roland and Nicci Funke. 2002. "Managing water in international river basins in Southern Africa: International relations or foreign policy." In: Turton, Anthony R. and Roland Henwood (eds.). 2002, pp. 177–186.

Heyns, Piet. 2002. "Interbasin transfer of water between SADC countries: A development challenge for the future." In: Turton, Anthony R. and Roland Henwood (eds.).2002, pp. 157–176.

_____. 2003. Water-resources management in Southern Africa, in: Nakayama, Mikiyasu (ed.). International Waters in Southern Africa. Tokyo: United Nations University Press, pp. 5-37.

_____. 2004. "Strategic and Technical Considerations in the Assessment of transboundary Water Management with reference to Southern Africa." Paper presented at the International Expert Workshop Bonn 1–2 March: "Water, Development and Cooperation: Comparative Perspective: Euphrates-Tigris and Southern Africa." (www.waterworkshop-bonn.de)

Hodgson, Stephen. 2004. Land and Water – The Rights Interface . FAO Legal Papers Online No. 36. Rome: FAO.

Holsti, Kalevi J. 1996. The State, War, and the State of War. Cambridge: Cambridge University Press.

Homer-Dixon, Thomas F. 1995. "The Ingenuity Gap: Can Poor Countries Adapt to Resource Scarcity?" In: Population and Development Review, Vol. 21, No. 3, pp. 587–612.

_____. 1999. Environment, Scarcity and Violence. Princeton: Princeton University Press.

_____. 2000. The Ingenuity Gap. London: Jonathan Cape.

Implications. 2004. Implications of Customary Laws for Implementing Integrated Water Resources Management. Inception Report. Johannesburg et al.: IWMI.

Jackson, Robert H. 1990. Quasi-states. Sovereignty, International Relations, and the Third World. Cambridge: Cambridge University Press.

Jaegerskog, Anders. 2003. Why states cooperate over shared water: The water negotiations in the Jordan River Basin. Linkoeping: Department of Water and Environmental Studies Linkoeping University.

Kassimir, Ronald and Robert Latham. 2001: "Toward a new research agenda." In: Callaghy, Thomas M., Thomas Kassimir and Robert Latham (eds.) 2001, pp. 267–278.

Klare, Michael T. 2001. Resource Wars: The New Landscape of Global Conflict. New York: Metropolitan Books.

Latham, Robert, Ronald Kasssimir and Thomas M. Callaghy. 2001. "Introduction: transboundary formations, intervention, order, and authority." In: Callaghy, Thomas M., Thomas Kassimir and Robert Latham (eds.) 2001, pp. 1–22.

Lautze, Jonathan, Mark Giordano and Maelis Borghese. 2005. "Driving forces behind African transboundary water law: internal, external, and implications." Paper presented at the International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

LIMCOM Agreement. 2003. Agreement (…) on the establishment of the Limpopo Watercourse Commission.

Maganga, Faustin P. 2002a. "Incorporating Customary Laws in Implementation of IWRM: Some Insights from Rufiji River Basin, Tanzania." Paper presented at 3rd WaterNet/Warfsa Symposium 'Water Demand Management for Sustainable Development'. Dar es Salaam, 30–31 October.

_____. 2002b. "The Interplay between Formal and Informal Systems of Managing Resource Conflicts: Some Evidence from South-Western Tanzania." In: The European Journal of Development Research, Vol. 14, December 2002, pp. 51–69.

Maganga, Faustin P. et al. 2003. "Implications of customary norms and laws for implementing IWRM: Findings from Pangani and Rufiji basins, Tanzania." Paper presented at 4th WaterNet/Warfsa Symposium, Gaborone, Botswana, 15–17 October.

Malzbender, Daniel, Jacqui Goldin, Anthony Turton and Anton Earle. 2005a. "Traditional Water Governance and South Africa's "National Water Act" – Tension or Cooperation?" Paper presented at the International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

_____. 2005b. Customary Water Management Structures and South Africa's National Water Act – Some Legal Deliberations. CIPS Electronic Briefing Paper No. 12/2005. Pretoria.

Mamdani, Mahmood. 1996. Citizen and Subject. Contemporary Africa and the Legacy of late Colonialism. Princeton: Princeton University Press.

Manzungu, Emmanuel. 2004. Water for All: Improving Water Resource Governance in Southern Africa. Gatekeeper Series No. 113. London: International Institute for Environment and Development.

Mbaiwa, Joseph E. 2004. "Causes and possible solutions to water resource conflicts in the Okavango River Basin: The case of Angola, Namibia and Botswana." In: Physics and Chemistry of the Earth, Vol. 29, pp. 1319–1326.

Mechlem, Kerstin. 2003. Water as a vehicle for inter-state cooperation: A Legal Perspective. FAO Legal Papers Online No 32. Rome: FAO.

Medzini, Arnon and Aaron T. Wolf. 2004. "Towards a Middle East at Peace: Hidden Issues in Arab-Israeli Hydropolitics." In: Water Resources Development, Vol. 20, No. 2, pp. 193–204.

Meissner, Richard. 2000. "Hydropolitical Hotspots in Southern Africa: Will there be a Water War? The case of the Kunene River." In Solomon, Hussein and Turton, Anthony (eds.) Water Wars: Enduring Myth or Impending Reality. Africa Dialogue Monograph Series No. 2. Durban: Accord, pp. 103–131.

_____. 2003. Interaction and existing constraints in international river basins, in: Nakayama, Mikiyasu (ed.). 2003, pp.249–273.

_____. 2004. "Interest Groups as local stakeholders involved in the water politics of a transboundary river: The case of the proposed Epupa dam across the Kunene river." Paper presented at the International Expert Workshop Bonn 1–2 March: "Water, Development and Cooperation: Comparative Perspective: Euphrates-Tigris and Southern Africa." (www.waterworkshop-bonn.de)

Milliken, Jennifer (ed.). 2003. State failure, collapse and reconstruction. Malden, MA. – Oxford: Blackwell.

Mohamed-Katerere, Jennifer, van der Zaag, Pieter. Untying the "Knot of Silence". Making water policy and law responsive to local normative systems. PC-CP Paper, no date.

Mushauri, Joshua. 2004. "Promotion of River Basin Organisations. Project impact review and Organisation Development support to the Limpopo and Orange-Senqu River Basin Commissions." Project Progress Review. Unpublished GTZ paper.

Nakayama, Mikiyasu (ed.). 2003. International Waters in Southern Africa. Tokyo: United Nations University Press.

Ohlsson, Leif. 1999. Environment, Scarcity, and Conflict: A study of Malthusian concerns. PhD Dissertation University of Goeteborg.

ORASECOM Agreement. 2000. Agreement(…) on the Establishment of the Orange-Senqu River Commission.

Pazvakavambwa, Simon C. 2004. "How National Water Development Plans affect regional cooperation (focus on Zimbabwe and Southern Africa)." Paper presented at the International Expert Workshop Bonn 1–2 March: "Water, Development and Cooperation: Comparative Perspective: Euphrates-Tigris and Southern Africa." (www. waterworkshop-bonn.de).

Pereira, Arnaldo Lopez and Alvaro Carmo Vaz. 2000. "The Incomati and Limpopo international river basins: a view from downstream." In: Water Policy, 2, pp. 99–112.

Pinheiro, I, Gabaake Gabaake and Piet Heyns. 2003. "Cooperation in the Okavango River Basin: The OKACOM Perspective." In: Turton, Anthony and Ashton, Peter and Cloete, Eugene (eds.). 2003, pp. 105–118.

Plenary Statement. 2005. "Plenary Statement of Participants at the African Water Laws Workshop." Paper presented at the International Workshop on 'African Water Laws:

Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

Pollard, Sharon. 2002. "Operationalising the New Water Act: contributions from the Save the Sand Project – an integrated catchment management initiative." In: Physics and Chemistry of the Earth, Vol. 27, pp. 941–948.

Ramazzotti, M. 1996. Readings in African Customary Water Law. FAO Legislative Studies No. 58. Rome: FAO.

Ramoeli, Phera. 2002. "The SADC Protocol on Shared Watercourses: Its origins and current status, in: Turton, Anthony and Roland Henwood (eds.). 2002, pp. 105–112.

Ratsch, Ulrich. 2004. "Privatisierung der Wasserversorgung als Konfliktursache." In: Welller, Christoph et al. (eds.): Friedensgutachten 2004. Muenster - Hamburg - London: Lit-Verlag, pp. 234–242.

Renner, Michael. 2002. The Anatomy of Resource Wars. Paper 162. Washington, DC: Worldwatch.

Roitman, Janet. 2001. "New sovereigns? Regulatory authority in the Chad Basin." In: Callaghy, Thomas M., Thomas Kassimir and Robert Latham (eds.) 2001, pp. 240–266.

Rotberg, Robert I. (ed.). 2003: State Failure and State Weakness in a Time of Terror. Washington, DC: Brookings Institution Press.

_____. 2004. When States Fail: Causes and Consequences. Princeton: Princeton University Press.

Sadoff, W et al. 2002. Africa's International Rivers: An Economic Perspective. World Bank: Washington, DC

Saleth, Maria R. and Ariel Dinar. 2004. The Institutional Economics of Water: A Cross-Country Analysis of Institutions and Performance. Cheltenham – Northampton, MA: Edward Elgar.

Salman, Salman M.A.. 2004. "Shared watercourses in the Southern African Development Community: challenges and opportunities." In: Water Policy, 6:, pp. 25–38.

Savenije, Hubert H.G. and Pieter van der Zaag. 2000. "Conceptual Framework for the management of shared river basins; with special reference to the SADC and EU." In: Water Policy, 2, pp. 9–45.

Schlichte, Klaus. 2005. Der Staat in der Weltgesellschaft. Politische Herrschaft in Asien, Afrika und Lateinamerika. Frankfurt – New York: Campus.

_____. (ed.). 2005. The dynamics of states: the formation and crises of state domination. Aldershot – Burlington, VT: Ashgate Publishing Group.

Schlichte, Klaus and Boris Wilke. 2000. "Der Staat und einige seiner Zeitgenossen. Zur Zukunft des Regierens in der 'Dritten Welt'." In: Zeitschrift für internationale Beziehungen, 7: 2, pp. 359–384.

Selby, Jan. 2003. "Oil and Water: The Contrasting Anatomies of Resource Conflicts." Paper prepared for the Conference on 'Resource Politics and Security in a Global Age', 26–28 June, Political Economy Research Centre, University of Sheffield.

Shela, Osborne N. 2000. "Management of shared river basins: the case of the Zambezi River." In: Water Policy, 2, pp. 65–81.

Sokile, Charles S. and Barbara van Koppen. 2003. "Local Water Rights and Local Water User Entities: the Unsung Heroines to Water Resource Management in Tanzania." Paper presented at 4th WaterNet/Warfsa Symposium, Gaborone, Botswana, 15–17 October.

Sokile, Charles S., Willy Mwaruvanda and Barbara van Koppen. 2005: "Integrated Water Resource Management in Tanzania: interface between formal and informal institutions." Paper presented at the International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa', 26–28 January, Johannesburg.

Starr, Joyce R. 1991. "Water Wars." In Foreign Policy, No 82, pp. 17–36.

Starr, Joyce R. and Daniel C. Stoll (eds.). 1988. The Politics of Scarcity. Water in the Middle East.Boulder, CO: Westview Press.

Swatuk, Larry A. 2002a. "The new water architecture in Southern Africa: reflections on current trends in the light of ‚Rio+10‘." In International Affairs 78: 3, pp.507–530.

_____. 2002b. "Environmental Cooperation for regional peace and security in Southern Africa." In Conca, Ken and Dabelko, Geoffrey D. (eds.), Environmental Peacemaking Baltimore – London: Johns Hopkins University Press, pp. 120–160.

_____. 2003. "State interests and multilateral cooperation: thinking strategically about achieving ‚wise use‘ of the Okavango Delta system." In: Physics and Chemistry of the Earth 28, pp. 897–905.

_____. 2004. "Political Challenges to Sustainably Managing intra-basin water resources in Southern Africa: Drawing Lessons from Cases." Paper presented at the International Expert Workshop Bonn 1–2 March: 'Water, Development and Cooperation: Comparative Perspective: Euphrates-Tigris and Southern Africa.' (www.waterworkshop-bonn.de).

Swatuk, Larry A. and Dianne Rahm. 2004. "Integrating policy, disintegrating practice: water resources management in Botswana." In: Physics and Chemistry of the Earth, Vol. 29, pp. 1357–1364.

Swatuk, Larry A. and Vale, Peter. 1999. "Why Democracy is not enough: Southern Africa and Human Security in the twenty-first century." In: Alternatives 24, pp. 361–389.

Swatuk, Larry A. and Pieter van der Zaag. 2003. "River Basin Security: Theory and Practice." Paper delivered at the annual meeting of the International Studies Association. Portland, Oregon, February.

_____. "River Basin Security: Theory and Practice in the Save and Pungwe River Basins of Zimbabwe and Mozambique." Gaborone – Harare (no date).

Tadesse, Medhane. 2002. "Traditional Mechanisms of Conflict Resolution versus State Intervention. The Borana Oromo and Merihan Somalis in Ethiopia." In: Baechler, Guenther et al. (eds.): Transformation of resource conflicts: approach and instruments. Bern: Peter Lang, pp. 185–214.

Trotha, Trutz von. 2000. "Die Zukunft liegt in Afrika. Vom Zerfall des Staates, von der Vorherrschaft der konzentrischen Ordnung und vom Aufstieg der Parastaatlichkeit." In: Leviathan, Vol. 28, pp. 253–279.

Turton, Anthony R. 2004. "The Evolution of Water Management Institutions in Selected Southern African International River Basins." In: Biswas, Asit K., Olcar Uenver and Cecilia Tortajada (eds.). Water as a Focus for Regional Development. Oxford, pp. 256–294.

Turton, Anthony and Leif Ohlsson. 1999. Water scarcity and social adaptive capacity: Towards an understanding of the social dynamics of managing water security in developing countries. MEWREW Occasional Paper No. 17.

_____. 2000. The Turning of a Screw. Social Resource Scarcity as a Bottle-Neck in Adaptation to Water Scarcity. Stockholm: Stockholm International Water Institute.

Turton, Anthony, Peter Ashton and Cloete, Eugene (eds.). 2003. Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin. AWIRU and Green Cross International (GCI): Pretoria.

Turton, Anthony and Anton Earle. 2002. Okavango Pilot Project. Report on Workshop One Maun 9–12 September. Pretoria: AWIRU.

_____. 2004. "Post-Apartheid Institutional Development in South African International River Basins." In Gopalakrishnan et al. (eds.) Water Resources Management – Structure, Evolution and Performance of Water Institutions. Berlin: Springer.

Turton, Anthony, Anton Earle and Karien Wessels. 2002. Okavango Pilot Project. Proceedings of Workshop One Maun 9–12 September. Pretoria: AWIRU.

Turton, Anthony and Roland Henwood (eds.). 2002. Hydropolitics in the developing world: A Southern African perspective, Pretoria: AWIRU.

UN Convention. 1997. Convention on the Law of the Non-Navigational Uses of International Watercourses. New York: United Nations.

UNDP. 2004. United Nations Development Programme. Water Governance for Poverty Reduction. Key Issues and the UNDP Response to Millennium Development Goals. New York.

United Nations Economic Commission for Africa. 2000. Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems, and Achievements. Addis Ababa: United Nations Economic Commission for Africa (ECA/RCID/052/00).

Wirkus, Lars. 2005. "Indigene Regelungen des Wassermanagements." In: Zeitschrift für Entwicklungspolitik, 10/2005, pp. 46–48.

Wirkus, Lars and Volker Böge. 2005. Afrikas internationale Flüsse und Seen. DIE Discussion Paper 7. Bonn.

Wolf, Aaron T. 1998. "Conflict and Cooperation along international waterways." In: Water Policy, Vol. 1, No. 1, pp. 251–265.

_____. 2000. "Indigenous approaches to water conflict negotiations and implications for international waters." In: International Negotiation, Vol.5, No. 2, pp. 357–373.

_____. (ed.). 2002. Conflict Prevention and Resolution in Water Systems, Cheltenham – Northampton, MA: Edwar Elgar Publishing Inc.

Wolf, Aaron T., Shira B. Yoffe and Mark Giordano. 2002. International Waters: Indicators for Identifying Basins at Risk. *Technical Documents in Hydrology*, PC/CP Series, No 20. Paris: UNESCO-IHP.

_____. 2003. "International Waters: Identifying basins at risk." In: Water Policy, Vol. 5, No. 1, pp. 29–60.

Wolf, Aaron et al. (eds.). 2002. Atlas of International Freshwater Agreements. UNDP: Nairobi.

_____. 2005. Water can be a pathway to Peace, not War (= Global Security Brief No. 5). Washington, DC: Worldwatch Institute.

WWDR. 2003. Water for People, Water for Life. The United Nations World Water Development Report, UNESCO – World Water Assessment Programme.

Yoffe, Shira et al. 2004. "Geography of international water conflict and cooperation: Data sets and applications." In: Water Resources Research, Vol. 40, W05S04, pp. 1–12

ZAMCOM. 2004. Agreement on the Establishment of the Zambezi Watercourse Commission.

BICC
at a glance

BICC is an independent, non-profit organization dedicated to promoting peace and development through the efficient and effective transformation of military-related structures, assets, functions and processes. Having expanded its span of activities beyond the classical areas of conversion that focus on the reuse of military resources (such as the reallocation of military expenditures, restructuring of the defense industry, closure of military bases, and demobilization), BICC is now organizing its work around three main topics: *arms, peacebuilding and conflict*. In doing this, BICC recognizes that the narrow concept of national security, embodied above all in the armed forces, has been surpassed by that of global security and, moreover, that global security cannot be achieved withoutseriously reducing poverty, improving health care and extending good governance throughout the world, in short: without human security in the broader sense.

Arms: To this end, BICC is intensifying its previous efforts in the fields of weaponry and disarmament, not only through its very special work on small arms but also by increasing its expertise in further topics of current concern such as the non-proliferation of weapons of mass destruction, arms embargoes and new military technologies.

Peacebuilding: BICC is extending its work in the area of peacebuilding. In addition to examining post-conflict demobilization and reintegration of combatants and weapon-collection programs, the Center aims to contribute, among other things, to the development of concepts of security sector reform with an emphasis on civilmilitary cooperation, increased civilian control of the military, and the analysis of failed states.

Conflict: BICC is broadening its scope in the field of conflict management and conflict prevention, including tensions caused by disputes over marketable resources and transboundary issues such as water.

These three main areas of analysis are complemented by additional crosscutting aspects, for example, gender, pandemics, or environmental protection.

Along with conducting research, running conferences and publishing their findings, BICC's international staff are also involved in consultancy, providing policy recommendations, training, and practical project work. By making information and advice available to governments, NGOs, and other public or private sector organizations, and especially through exhibitions aimed at the general public, they are working towards raising awareness for BICC's key issues.

While disarmament frees up resources that can be employed in the fight against poverty, conversion maximizes outcomes through the careful management of such transformation of resources. It is in this sense that they together contribute to increasing human security.