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WATER AND FOOD SECURITY IN THE NILE RIVER BASIN

PERSPECTIVES OF GOVERNMENTS AND NGOS OF UPSTREAM COUNTRIES

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49 Water and Food Security in the Nile River Basin: Perspectives of Governments and NGOs of Upstream Countries

Patricia Kamari-Mbote and Kithure Kindiki

49.1 Introduction

Water is an important resource for sustaining life. The uses of water are manifold, and include domestic uses, industrial uses such as the production of hydroelectricity, irrigation and animal husbandry (Godana 1985: 1). Moving and stagnant water – such as rivers and lakes – serve as reservoirs for waste disposal (Okidi 1996: 1). Water and food security around the world continue to be threatened by population explosion and the rising standards of living, confirming that water is finite and cannot withstand all pressures to its quality, quantity and life-giving purposes. With the increasing demand on water and pressure on national water resources, states are increasingly turning to international watercourses.

This chapter is concerned with the perspectives of governments and NGOs of upstream countries regarding the consumptive utilization of the Nile River resources in the pursuit for water and food security within the basin states (49.2). It reviews the debate on the relationship between water scarcity in the Nile basin and inter-state armed conflict (Starr 1991, Wolf/Yoffe/Giordano 2003; 49.3); and on the status in international law of the bilateral treaties (49.4) on the consumptive uses of the Nile entered between Egypt, Britain and other powers before and during the colonial period (Garretson 1960; Teclaff 1967; Okidi 1982, 1994; Carrol 1999; Okoth Owiro 2004: 50).

The chapter argues that even if water and food security may not necessarily lead to violent inter-state conflict (Wolf 1998), water and food scarcity in the basin has, however, nurtured political tensions among basin states thus retarding the efforts towards sustainable development (49.5). Food security is used here to mean food production and availability at the macro level as well as access and distribution of available food. Since our aim is to look at the situation of upper riparian countries, we do not explore discourses concerning meeting food security needs through dis-

tribution of food produced in one part of the basin to all basin countries (figure 49.1).

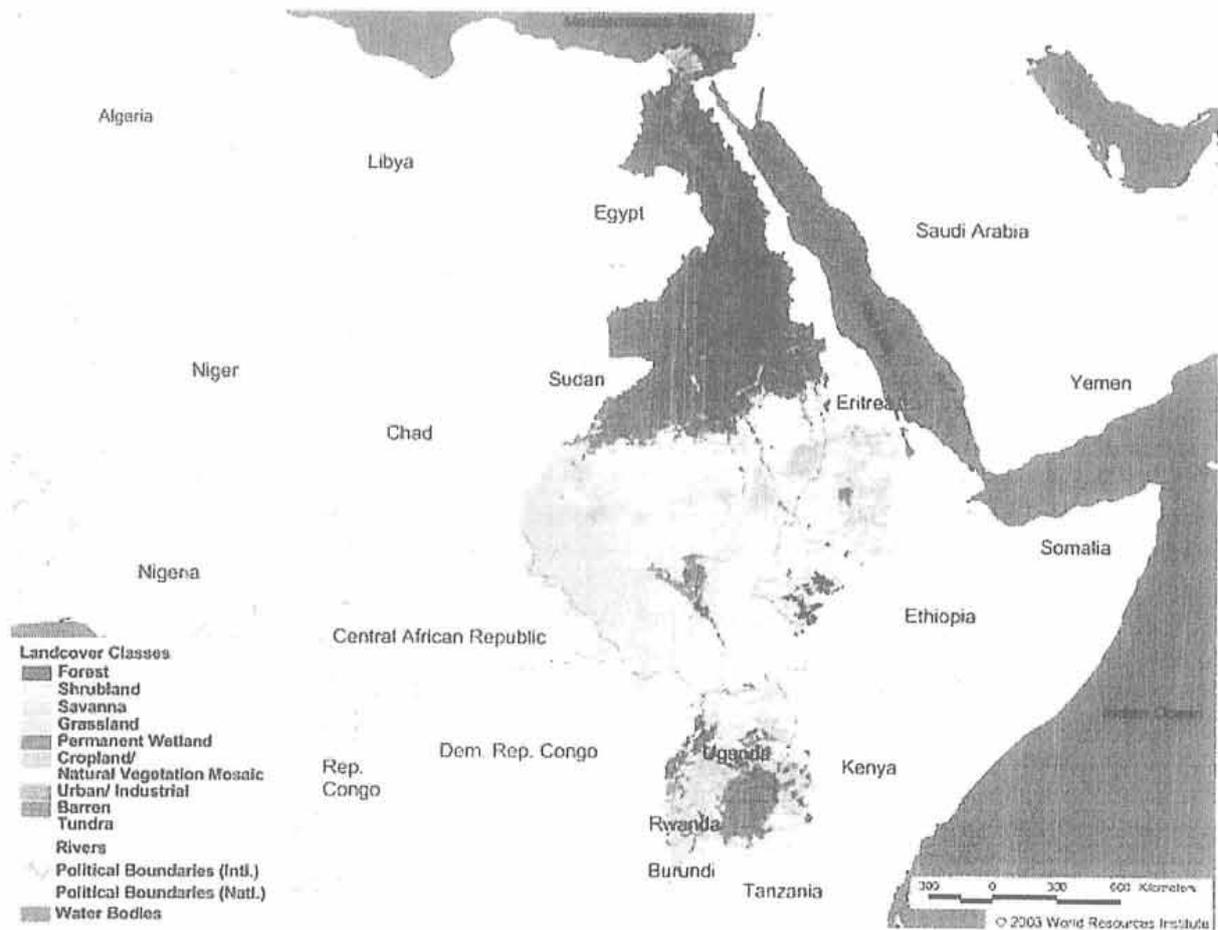
Further, it is contended that the current state of affairs whereby riparian states' interests in the Nile basin are diametrically opposed, coupled with the strong foundation in international law for the claims of upstream states, suggests that the traditional political methods of settling disputes like negotiation or conciliation are unlikely to yield results in the foreseeable future (49.6).

As a result, downstream states, notably Egypt, will continue to delay or complicate political dispute settlement mechanisms. The chapter recommends a change in diplomacy by upstream states to one of convincing downstream states to submit the Nile question to some international judicial process. This contribution is premised on the assumption that with the dilemma posed by water and food insecurity in the Nile basin, governments will choose to co-operate in the development of joint water management schemes for the benefit of all, based on the principle of equitable utilization of shared resources, rather than go to war as the finite limits of available water supplies are reached (49.7)

49.2 Reappraising the Hydrology of the Nile: Water and Food Security in the Basin

The Nile River, which is inextricably linked to Lake Victoria, as the only drainage outlet from the Lake is the second longest river in the world. Its length together with its tributaries is 3,030,300 kilometres (Kasimbazi 1998: 18). The entire Nile-Victoria basin is estimated at 2.9 million square kilometres, representing roughly one tenth of the African continent (Okidi 1994: 321). The Nile basin covers ten states, namely: Kenya, Uganda, Tanzania, Rwanda, Burundi, the

Figure 49.1: Landcover Classes in the Nile Basin. **Source:** IUCN: Water Resources E Atlas. Watersheds of the World; at: <http://www.iucn.org/themes/wani/eatlas/html/af15.html>; © World Resources Institute 2003. Permission has been obtained from the copyright holder.



Democratic Republic of Congo (DRC), Ethiopia, Eritrea, Sudan and Egypt (figure 48.1, table 48.1).

The Nile is made up of three main tributaries. These are the White Nile, the Blue Nile and the Atbara. The White Nile rises from its source in the highlands of Rwanda and Burundi and flows into Lake Victoria leaving its Northern shore near the town of Jinja, and heading north towards Lake Albert that receives much water from the Semliki River, which has its source in the DRC and empties first into Lake Edward, where it receives additional water from the tributaries coming from the Rwenzori Mountains in Uganda on its way to Lake Albert. From here, the White Nile flows into Sudan (Kasimbazi 1998).

Lakes Victoria, Edward and Albert are the natural reservoirs (figure 49.2), which collect and store great quantities of water from the high rainfall regions of Eastern Equatorial Africa and maintain a permanent flow down the White Nile with relatively small seasonal fluctuations (Beadle 1974: 124). In Sudan, near Khartoum, the White Nile meets the Blue Nile, which

drains Lake Tsana in the Ethiopian highlands. The two flow together to just north of Khartoum where some 108 kilometres downstream, they are joined by the Atbara, whose source is in Eritrea. The River then flows north through Lake Nasser and the Aswan High Dam before splitting into the Rosetta and Damietta distributaries just before flowing into the Mediterranean Sea (Okidi 1982).

The linkage between water and food security in the Nile basin is obvious, as water scarcity impacts negatively on agriculture and, therefore, on food security. Water scarcity is probably the single biggest threat to food security anywhere in the world. Water and food security in the Nile basin remains fragile. For instance, Egypt continues to strenuously defend its nearly 100 per cent dependence on the Nile waters to secure the livelihood of its ever-increasing population (figure 49.3; see chap. 48 by Adly/Ahmed; table 48.1). The situation in arid Sudan is no better. Ethiopia remains a country of perennial droughts and famine, despite the country contributing a substantial vol-

Figure 49.2: The Upper Nile Basin and Lake Victoria. **Source:** USDA, Production Estimates and Crop Assessment Division Foreign Agricultural Service: at: <http://www.fas.usda.gov/pecad/highlights/2005/09/uzanda_26sep2005_images/nile_basin.htm>. Permission was obtained from the copyright holder.



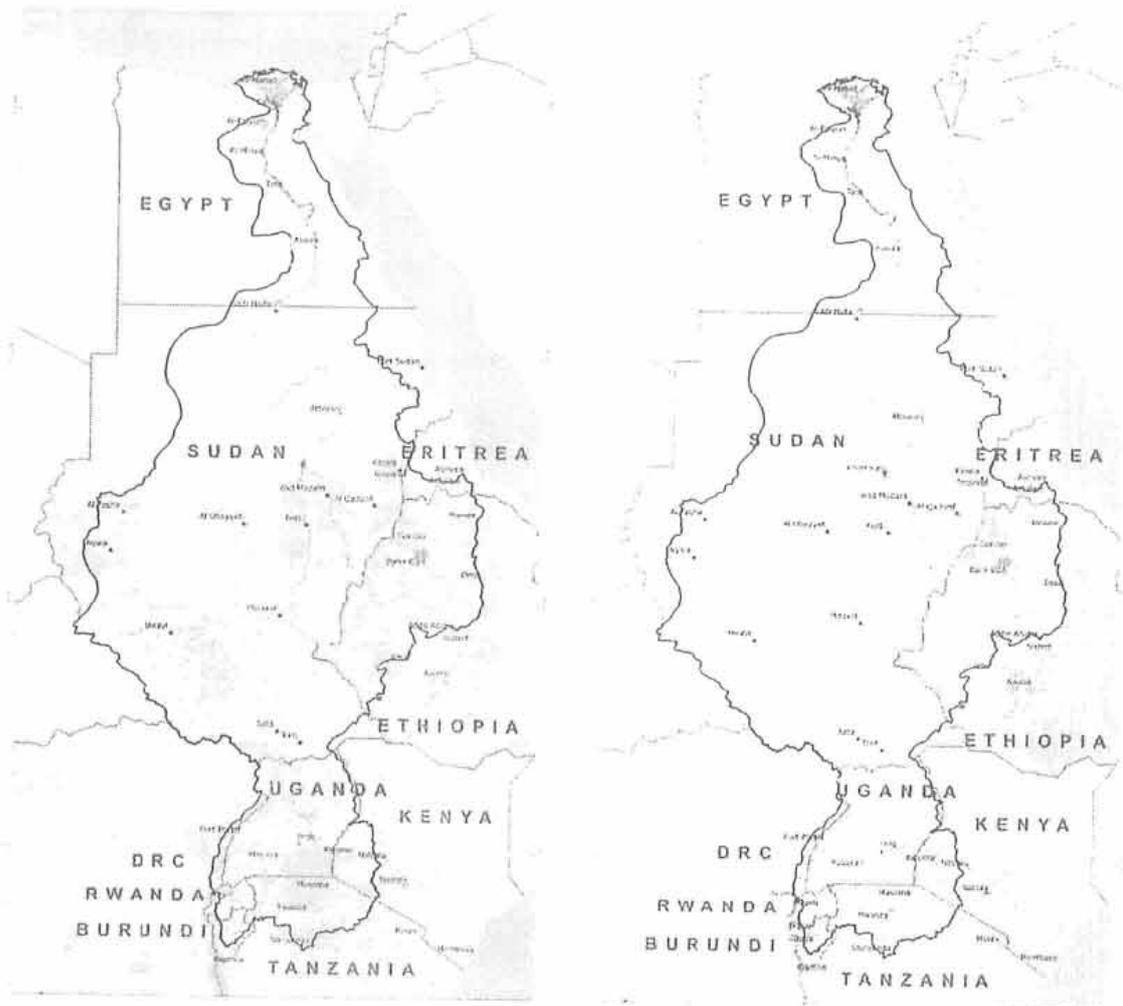
ume. Okidi (1982: 321) has explained the reason for this state of affairs as being the uneven monthly and geographical distribution of the Ethiopian rain.

Similarly in Kenya, another substantial contributor of water through six major rivers flowing into Lake Victoria, two thirds of the entire territory is classified as arid or semi-arid, where water and food remain scarce resources. Kenya has established the Lake Basin Development Authority to develop a master plan for the consumptive uses of its water for agricultural development, to the chagrin of Egypt. Tanzania, a contributor of approximately 25 per cent of the waters flowing into Lake Victoria, is grappling with its water and food scarcity by ambitious irrigation works under the aegis of the Kagera Basin Organization, despite Egyptian opposition to these works.

It is noted that one distracting factor in the quest for a basin-wide consensus on equitable utilization of the Nile waters emphasizes that upstream states contribute only 15 per cent of the water flowing into Egypt. According to Bard (1959), Godana (1985) and Okidi (1994), the average annual flow of the Nile measured at Aswan is 84 billion cubic metres. Of this total about 85 per cent originate from the Ethiopian plateau, whereas only 15 per cent come from sources in East Africa. However, these estimates over-simplify the statistics of the Nile which are complex (Garretson 1967; Godana 1985; Okidi 1994; Okoth Owiro 2004). At least three reasons debunk the claims based on these figures.

First, the flow of the White Nile is relatively regular throughout, while the Blue Nile-Atbara sub-system

Figure 49.3: Population Distribution on the Nile Basin in 2005 and 2030. Source: FAO < <http://www.faoile.org/images/PopulationDistribution29Nov.png>>.



fluctuates seasonally. According to Godana (1985: 81) the Blue Nile swells to an enormous torrential flow and accounts for some 90 per cent of the water passing through Khartoum. But by April the water from both sources dwindles to one-fortieth of the flood discharge, to account for no more than 20 per cent of the water passing through Khartoum. This tallies with statistics by Garretson (1967), who argues that the Blue Nile alone supplies 90 per cent of the water passing through Khartoum during the high season from April to September; but this contribution reduces to 20 per cent during the low season from January - April.

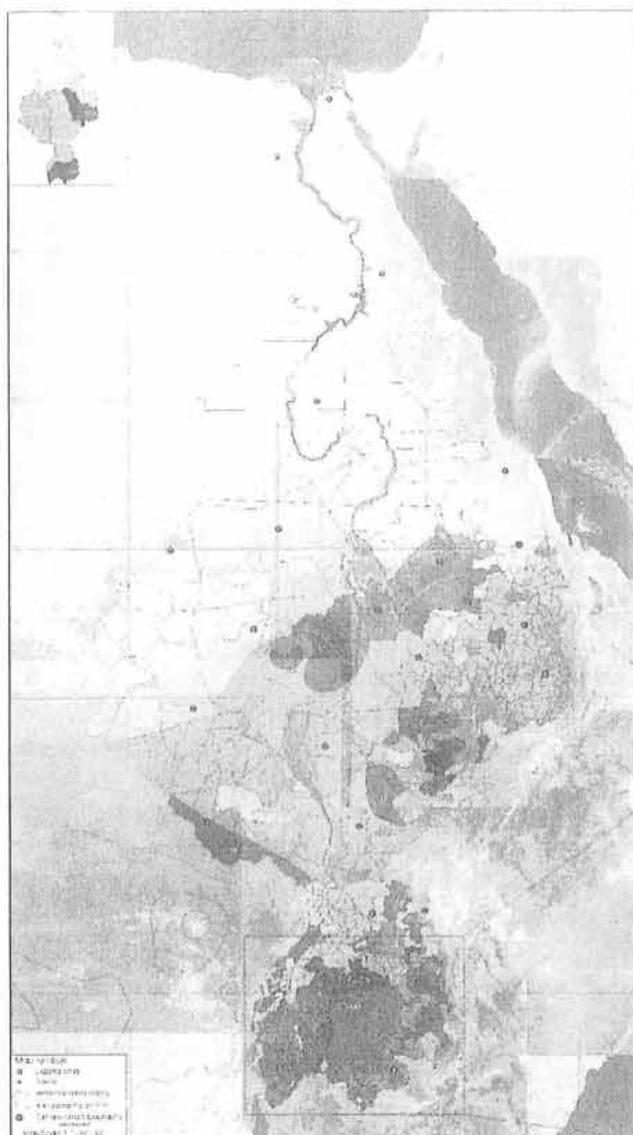
Second, it is incorrect to measure the flow of the Nile from Khartoum. A more realistic estimate of the White Nile's contribution could be obtained by measuring the amount of water leaving the Lake plateau of East Africa because of the estimated 24 billion cubic metres of water from the White Nile, half is lost

through intense evaporation and soakage in the Sod (Godana 1985: 83).

Third, estimating the flow of the Nile on the basis of how much water reaches the Sudan or Egypt appear to assume that the purpose of the Nile is to feed these two countries with water; thus only the water reaching its destination is worth accounting for (Okoth Owiro 2004: 3).

The worsening of water and food security in the Nile basin should enhance the need to comprehensively deal with the management of the quality and quantity of its water. The rapid population increase calls for equitable uses of the River to enhance basin-wide as opposed to single riparian food security (table 48.1; figure 49.4). By the year 2000, 280-300 million people lived in the ten basin countries. Of these, about 160 million depend on the Nile River and its tributaries (Kameri-Mbote 2004: 11). Within the next 25 years, the basin population may double to 594 million by 2025 (table 48.1), increasing the water demand

Figure 49.4: Dominant Crops in the Nile Basin Farming System. **Source:** FAONile; at: <<http://www.fao.org/images/dominantcrops.png>>.



for agriculture and industry (table 48.2) with a possible increase in drought and famine (figure 48.3). There may be more erosion, soil degradation, pollution from chemical run-off from industry and agriculture and more water-borne diseases.

49.3 Riparian Interests

The economy of the entire Nile Basin heavily depends on agriculture. The water resources of the Nile are utilized for irrigation, hydroelectric production and fishing. The river is a source of water for domestic use and is also important for biodiversity and climate modulation as well as for tourism (Kasimbazi 1998:

19). To achieve these purposes, dams have been constructed by downstream and upstream states.

Egypt entirely depends on the Nile for its water needs (chap. 48 by Adly/Ahmed). In 1978, Egyptian President Anwar Sadat threatened to go to war were any country to tamper with the river's flow: "We depend upon the Nile 100 per cent in our life, so if any one, at any moment thinks of depriving us of our life, we shall never hesitate to go to war" (Kukk/Deese 1996: 46).

Egypt has never carried out this threat, despite the increasing interest in and in some cases abstraction of the water of the Nile Basin for various irrigation and other development projects. Egypt still holds the view that existing Nile Treaties are binding in perpetuity, and that the treaties grant Egypt natural and historic rights over the Nile (49.4).

Other co-riparians have expressed different views. Ethiopia adheres to the Harmon doctrine (49.4), arguing that it can do whatever it pleases with the waters in its territory despite any ramifications on co-riparian states (Kukk/Deese 1996). This position is similar to that of Tanzania, which does not recognize the Nile Agreements. Although Kenya does support the Egyptian position and opposes the Nile Agreements, its view is somewhat moderate, urging for a more equitable utilization of the water of the Nile and Victoria Basin in accordance with the principles of the United Nations Charter, and the modern principles of international watercourses law (Okoth Owiro 2004: 38-41). The position of Uganda, Burundi and Rwanda is the same, while the DRC has never stated its position (Okoth Owiro 2004: 41).

As a result of the positions taken by downstream states, in opposition to the radical Egyptian view, upstream states have increasingly viewed the Nile as a principal feature of their economies. Tanzania hopes to implement a plan to abstract the waters of Lake Victoria to irrigate the relatively low and dry steppes on central Tanzania. Kenya has begun treating more seriously the waters of Lake Victoria with the establishment of the Lake Basin Development Authority.

49.4 The Legal and Institutional Context

The Nile is an internationally shared river. With Lake Victoria the Nile forms an "international watercourse", defined in the UN Convention on the Non-navigational Uses of International Water (1997) as a

"watercourse, parts of which are situated in different states".

According to Article 38 of the Statute of the International Court of Justice (ICJ) the basic sources of international law are treaties, customary international law and general legal principles, as well as judicial decisions and scholarly writings "as a subsidiary means for the determination of the rules of law" (Brownlie 1990: 10). While the Nile may be governed by the principles of both treaty and customary international fluvial law, the only treaty principles governing its water use are the bilateral treaties between Egypt, Britain and other powers between 1885 and 1959. Under these treaties upstream states committed themselves to Egypt and Britain that they would respect prior rights to and especially claims to natural and historic rights to the Nile waters, which Egypt asserted (Okoth Owiro 2004: 1).

All these treaties, except the 1959 Agreement, were adopted when all co-riparians of the Nile (except Ethiopia) were ruled by foreign colonial powers. After the independence of the states in the basin, the legal issue has remained whether or not the treaty commitments made by the predecessor states binds post-colonial states (O'Connell 1956: 16). As the lack of agreement on this question is responsible for the divergent positions adopted by upstream and downstream states, the legal status of these treaties is briefly discussed, before looking at the current general norms of international law on shared water resources such as the Nile.

49.4.1 The Legal Status of the Nile Treaties

Is the international legal regime established over the Nile through treaties concluded between Great Britain with other powers still operational or binding on the Nile Basin states? The answer to this question is fundamental to the issue of upstream and downstream riparian rights and obligations over the Nile water. If these treaties are valid and binding, they legitimize the legal order of the colonial period that gave Egypt pre-eminence in the control of the Nile and unimpeded use of the Nile for national development. This would pose a severe constraint on development efforts and opportunities of upper riparian states.

But if the Nile Agreements are not binding, then the control and utilization of its water are regulated by the general norms of international law discussed below (50.4.2). It would imply that the Nile needs a new legal regime in the form of a basin-wide treaty. This

would not only provide room for fresh negotiations amongst all basin states, but could also help develop a utilization regime that is more sustainable and equitable.

49.4.2 General Norms on International Watercourses

There are at least six principles of contemporary international law on the consumptive uses of international watercourses. Each of these, as well as their level of acceptance, is discussed from the perspective of upstream states. It will be seen that the first three principles are outdated while the last three seem fairly anchored in law.

The first one is the doctrine of absolute territorial sovereignty. In its absolute form, this doctrine, posits that states have absolute sovereignty over all water in their territory and may use it as they please including extracting as much of it as possible or altering its quality regardless of the consequences of the use on the supply of water on downstream or contiguous states (Birnie/Boyle 1992: 218).

This doctrine of absolute territorial sovereignty appears founded on the basic international law principle that there is absolute sovereignty for every nation as against all others within its territory (Kasimbazi 1998: 20). It is favoured by upstream states, as it is an extreme theory that completely ignores the rights of downstream states. However, the doctrine has remained unpopular, with the great majority of writers emphatically rejecting the doctrine (Godana 1985: 36). Even the U.S. itself quickly retracted from the full Harmon doctrine in subsequent treaties with Mexico and Canada.

Even if the Harmon doctrine were to be accepted by writers, it fails to appreciate that under international law, states not only have territorial sovereignty but 'territorial duties' as well. One such duty is encapsulated in the customary international law maxim *sic utere tuo ut alienam ad laedas* that creates an obligation for states not to conduct or permit activities within their territory that may be harmful to the territories of other states (Birnie/Boyle: 1992: 89). Reiterating this customary principle, the arbitral tribunal in the well-known *Trial Smelter Arbitration* (1938-1941) that involved transboundary pollution ruled that: No state has a right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or to the properties or persons therein.

The second theory is that of absolute territorial integrity. It espouses an old common law of water rights whereby a lower riparian state has the right to the full and uninterrupted flow of water of natural quality. The upper riparian may not interfere with the natural flow without the consent of downstream states. This principle, which is favoured by downstream states and has been the basis of the 1929 and 1959 Nile treaties, is curiously also based on the 'good neighbourliness' doctrine espoused in the *sic utere tuo* maxim.

A major criticism to the absolute territorial integrity theory is that just as its absolute sovereignty counterpart, it is an extreme doctrine that creates something akin to veto rights in favour of downstream states against upstream states (Biswas 1993: 172). Current law on international watercourses, as espoused in the 1997 UN Convention, reject the radical approach and endorses a legal scheme that balances between rights and duties for both upstream and downstream states. According to Godana (1985: 39), the theory of absolute territorial integrity may also be considered as discarded.

The third principle is that of prior appropriation rights or to use the words used in the Nile Treaties, 'natural and historic rights' to internationally shared rivers. The principle allows any riparian that puts the water of an internationally shared river to use first to establish prior and incontestable rights over the particular use. Although in theory this principle favours neither upstream nor downstream states and therefore appears equitable *prima facie*, it is restrictive and unworkable (Kasimbazi 1998: 21). The theory's weakness is to allow the state that puts the waters of an internationally shared river into use first, enjoys veto rights over others, an undesirable scenario that seems unsupported by the 1997 UN Convention and other sources of international fluvial law.

The fourth is the principle of limited territorial sovereignty and integrity (Kasimbazi 1998: 22). The theory advances qualified sovereign and territorial claims over international watercourses. By it, co-riparian states have reciprocal rights and duties in the use of the waters of a transboundary water river.

Fifth is the principle of equitable utilization, already hallowed in treaty and customary international law. It is the most widely endorsed theory that treats international watercourses as shared resources subject to equitable utilization by all riparian states (Birne/Boyle 1992: 219). The doctrine rests on the foundation of equality of rights and relative sovereignty but should not be confused with equal division.

It calls for accommodation of the interests of all riparian states.

Equitable utilization as a principle of international law has found support from case law, state practice, treaties and other codifications. In the *River Order Case* the Permanent International Court of Justice (PCIJ), which is the progenitor of the ICJ invoked the exigencies of justice and considerations of utility, favouring "a community of interest" in the utilization of an internationally shared river by all riparians based on equality of rights on the whole of the navigable part of the River Order. Although this case involved navigation, the same principle is applicable to the consumptive, non-navigational uses of international watercourses.

While the precise meaning of the term 'equitable utilization' is the subject of future judicial or arbitral interpretation, guidance may be sought from the Helsinki Rules as well as the codification of the International Law Commission (ILC) in its report to the UN General Assembly I 1994 during the drafting of the 1997 UN Convention. According to the Helsinki Rules, 'equitable utilization' is to be determined in all the relevant factors, which include geography, climate, hydrology, prior utilization of the waters, economic and social needs of each state, the availability of other resources, avoidance of waste in the utilization of the water, and the practicability of compensation to one or more riparian states as a means of adjusting conflicts among the needs and uses of each riparian state.

Sixthly and finally is the principle of common basin-wide management of international watercourses. Also well-grounded in international law, this theory presupposes that internationally shared rivers and lakes are most efficiently managed as an integral unit. The theory stems from the consideration that international watercourses do not respect national frontiers across which they flow. Thus, proponents of this doctrine insist on a community approach management that downplays political boundaries and one that regards an international watercourse as a single economic and geographic unit.

Treaties in which the common management doctrine has been incorporated include the *Agreement on the Action Plan for the Environmentally Sound Management of the Common Zambezi River System* (1988: 28 ILM 1109), the *Treaty on River Plate and its Maritime Limits* (1973: 13 ILM 242), and the *Treaty for Amazonian Cooperation* (1978: UNTS). Other international codifications that endorse the common management theory include the 1972 *Stockholm Dec-*

laration on the Human Environment (article 2(5)(a), and the 1977 UN Mar del Plata Water Action Plan. The principle forms article 24(1) of the 1997 UN Convention providing that:

Watercourse states shall ... enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism.

It is worth emphasizing that the rather omnibus common management doctrine generates an array of other more specific principles. These include the general duty for each state to cooperate with co-riparians, and the procedural requirements of prior notification of intended projects involving the water resources of an international watercourse, as well as the duty to consult other riparians and negotiate with them where objections to the intended utilization arises.

49.4.3 The Institutional Set-up for Cooperation on the Nile

Although this chapter is not concerned with appraising the existing cooperative framework regarding the Nile Basin, a brief mentioning of two initiatives is appropriate: the *Nile Basin Initiative* (NBI) and the *Nile Basin Discourse* (NBD). The NBI, involving all basin countries except Ethiopia, has the ambitious goal of establishing regional cooperation and mutually beneficial relationship between the basin states. The initiative, therefore, is to achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin water resources.

On its part, the NBD was conceived to respond to the challenges of involving civil society within the NBI so as to bring in the voices of stakeholders other than government in the furtherance of the ideals of the NBI. To achieve this purpose, the NBD promotes dialogue and sharing of ideas with the aim of eradicating poverty, promoting sustainable and equitable development and ensuring peace and mutual understanding in the Nile Basin.

49.5 Unlocking the Impasse: New Solution to an Old Problem?

From the foregoing discussion neither the unilateral claims of Egypt on maintaining the *status quo* on the Nile, nor the threat by upstream states like Tanzania, Uganda and Kenya to abstract the waters of the Nile-Victoria system is supportable in law. The question

still remains what needs to be done to move the Nile debate forward.

Although the threat by Egyptian President Anwar Sadat was made nearly three decades ago, Egypt's hard-line stance has not changed much. The potential for conflict over the Nile has long been identified, yet as the clock ticks away no practical solution seems to be forthcoming. Instead, scholars, diplomats, politicians, civil society, the international community and other stakeholders continue to either recommend more cooperative arrangements or simply to downplay the potential conflict over the Nile. For instance, Wolf, Yoffe and Giordano (2003) believe that violent conflicts over the use of scarce water resources are more likely to be found on the sub-national rather than the international level.

Even if the 'water war' hypothesis should be considered as wrong, water and food scarcity in the Nile Basin may be a politically destabilizing factor that may impair not only sustainable development in the basin states, but also intra-African cooperation in other areas such as regional integration for trade. While the ongoing negotiations and cooperative initiatives remain key in addressing the water and food security question in the Nile Basin, an exit route out of the Nile impasse must be found. This chapter recommends two approaches that upstream states need to initiate as a matter of priority either simultaneously or one after the other: the negotiation and adoption of a new treaty binding all riparian states and the reference of the issue of the legality of the Nile treaties to a judicial or arbitral forum.

The first recommendation – negotiating a new treaty – seems to be in agreement with what happens around the world to give effect to the evolving international water law. Basin states are coming together to agree by treaty on how best to achieve equitable utilization of transboundary rivers and lakes, taking into consideration the concept of sustainable development as the bedrock on which international environmental law and policy is based (WCED 1987: 43). Given the history of the Nile where Egypt has remained hostile to any attempts to re-negotiate the treaty arrangements over the Nile water, it is unlikely that a new treaty will be successfully negotiated in good faith in the foreseeable future. That makes the second option – reference of the matter to an international judicial or arbitral tribunal probably the more viable option.

The current state of affairs whereby riparian interests in the Nile Basin are diametrically opposed, coupled with the strong foundation in international law for the claims by upstream states as against those by

Egypt, suggests that the traditional political methods of settling disputes like negotiation or conciliation are unlikely to yield results in the foreseeable future. Downstream states (notably Egypt) will continue to delay or complicate the political dispute settlement mechanisms. It is therefore recommended that upstream states should change their diplomacy, from convincing Egypt to relent on its position, to convincing both Egypt and other basin states to submit the Nile question to an international judicial process.

The ICJ currently enjoys a high degree of acceptability by African states as a forum of settling their disputes. The historical suspicions relating to the attitude of the Court toward the developing countries appear to be addressed over the years. The Court has been able to resolve some of the most protracted territorial and frontier as well as maritime delimitation disputes involving African disputes, recent examples being the *Land and Maritime Boundary Between Nigeria and Cameroon* relating to the question of sovereignty over the Bakassi Peninsula and the dispute between Botswana and Namibia over the Kasikili/Sedudu Island in River Cunene, and the legal status of the island.

The Nile issue could also be referred to an international arbitration tribunal. This may be more likely to achieve since arbitration allows parties some leeway in determining the principles on which the dispute is to be settled. Arbitrations may lead to building the necessary consensus for 'resolving' the dispute by producing a win-win situation, as opposed to judicial tribunals that end up 'settling' a dispute by producing a win-lose outcome.

49.6 The Role of Civil Society

The continuing dialogue on the Nile cannot be fully participatory without civil society involvement. While this has been agreed upon, there have been concerns that a few NGOs currently engaged do not fully represent the diversity of civil society (Kameri-Mbote 2004: 21-22). Given the open nature of the dialogue under the auspices of the existing cooperative arrangements, the challenge of meaningfully putting in place an agenda that is not captured by the interests of powerful groups remains.

Moreover, providing adequate resources for the dialogue continues to be a challenge. The initial phase of funding provided by CIDA and the NBD is currently struggling to survive. It is unlikely that governments will provide resources for the dialogue of civil society given the suspicion with which they have

viewed civil society engagement and the broader resource constraints facing most governments. Non-involvement of civil society actors threatens the sustainability of the collaborative management initiatives and makes it expensive for state actors to bring in these actors at a latter stage. Without NGO participation, the NBI will never fully realize its goals of a shared vision or regional cooperation. While projects may be initiated and completed, they will fail to fully disentangle the problems surrounding equitable consumptive utilization of the Nile among the basin states while causing political tensions that may weaken the state and frustrate sustainable development in the basin.

49.7 Conclusion

Emile Lodwig, the famous German historian and geographer, made the following remarks on the Nile when he visited Egypt and the Sudan in 1937: "every time I have written the history of man, there hovered before my minds eye the image of a river, but only once have I beheld in a river the image of man and his fate" (Mageed 1994: 156). He made these remarks during a global confrontation, on the eve of the Second World War, which brought the threat of war to the Nile Basin after Italian occupation of Ethiopia. At that time, the whole basin was under the domination and influence of European powers.

Today, the situation is equally uncertain not only in terms of possible future conflicts but also of other complexities of unprecedented dimensions. The population of the countries of the basin is expected to rise from the current 370,000 million (2005) to 890,000 million by the middle of the twenty-first century (table 48.1), while scientific speculations exist that the basin is among the areas most threatened by global warming and sea level rise, where one fifth of Egypt's most populated and productive lands may be subjected to flooding (Mageed 1994: 156).

The ecological integrity of the Nile Basin (and therefore the water and food security in the basin) is hinged on a new framework of co-operation espoused in a new treaty. If this cannot be negotiated in good faith, then the legal option left is to refer the dispute over the Nile on the Nile Agreements to an international judicial and arbitral tribunal. Governments, civil society, the international community and other stakeholders have a joint role to promote such approaches.