Hydropolitics and Geopolitics

Transforming Conflict and Reshaping Cooperation in Africa

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We don't inherit the land from our ancestors. We borrow it from our children"
(Native American saying).

Most people take water for granted. It seldom comes to mind that water has economic value which, in today's circumstances, is overwhelming its social value. It is even less common to think of water as a political issue. Recently, it was announced that Japan tried to buy Lake Ontario water from the US, but Canada objected. Similar protests from riparian states should be expected should Egypt, for example, undertake to build a pipeline to deliver the Nile water to Saudi Arabia which is running toward total depletion in the next 50 years.[1] In this case as in others, hydropolitics (the influence of hydrology on politics) and geopolitics (the influence of geography on politics) go hand in hand.
This is not a discovery of the twenty-first century globalizing world. It has been so in the past. It is needless to cite some of the great river civilizations such as Ancient Egypt on the Nile, Mesopotamia with Tigris and Euphrates, the Senegal, the Niger, the Zambezi river basins etc. Roman aqueducts are still objects of admiration as technological achievements. The rise of nations goes hand in hand with their ability to master water. Conversely, their decline is also accompanied by the loss of their ability to do so.

In a more recent past, the second half of the nineteenth century, a series of massive climatic changes accompanied the shaping of the foundations of the current geography of the world's political economy: the developed "North" and the under-developed "South". Between 1876 and 1879, drought occurred in Java, the Philippines, New Caledonia, Korea, Brazil, northern China, and northern and southern Africa. For example, in 1877-1878, Indian, Brazilian and Moroccan peasants suffered from both the consequences of the economic depression of the 1870s and the famine caused by the droughts of that period. Between 1889 and 1891, drought took place in India, Korea, Brazil, Russia and, more severely, in Ethiopia and Sudan. In those two African countries, probably one third of the population perished. Between 1896 and 1902, a series of years with inadequate monsoon, something similar happened in the tropical zone and the northern part of China.

[1] Maude Barlow, *Blue Gold. The Global Water Crisis and the Commodification of the World's Water Supply,* The International on Globalization, Spring 2001, p. 6

This series of droughts combined accounted for more than 30 million casualties, which historian Mike Davis called a "forgotten holocaust"[2] . Davis' studies show the link among drought, famine and imperial enterprise. With drought come famine, disease and subsequent weakening of traditional solidarities and the breaking down of indigenous political structures in terms of both efficiency and legitimacy. A window of opportunity, which may be called a state of *colonizability*, is created that allows foreign interference. As by coincidence, during the drought of 1877 in southern Africa, Britain put an end to the independence of the Zulu empire. In 1889-1891, during the period of famine in Ethiopia, Italy tried to expand its domination over the Horn of Africa. By the late 1890s Germany, taking advantage of both the floods and drought in the province of Shantung, undertook to extend its influence to northern China. In the same period, the United States took over the Philippines, plagued by drought.

During the Victorian era and the French revolution, class division (and income inequality) within given societies was a universal phenomenon. By the end of the 19th century, what was more noticeable was rather the inequality of wealth among nations. The "Third World" had emerged in the "South" and the rich "North" had firmly established its prominence in world affairs. However, resentments, grievances and revolts began to be directed against external powers throughout Africa, Asia and South America. The extremism of those movements was directly proportional to ecological as well as existential challenges.[3] Because nationalistic movements are rooted in a combination of natural (or god-made) and political (or human-made) phenomena, ideologies of resistance tended to combine religious, social, political and even eschatological overtones.

In Africa, in 1885, the British General Charles Gordon and his troops were slain by followers of Muhammad Ahmad (the Madhi) in Khartoum, a city situated at the junction of two key branches of the Nile; in 1898, a war almost broke out between Britain and France at Fashoda, another outpost on the Nile in southern Sudan; in the meantime, Ethiopia defeated Italy at Adowa in 1896.

In many regards, Africa today seems to be in a situation similar to that of the turn of the 20th century and worse. Economically and militarily, the turn of this century resembles the turn of the last one. The concentration of wealth and military power in a few hands and the "massification" of poverty are creating a situation of a "world social war." A new wave of colonization is taking place, not by powerful states, but by super-powerful corporations, thanks to the weakening of

[2] Mike Davis, April 2003, Le Monde Diplomatique. *Les famines coloniales, genocide oublié*. April, 2003, p. 3.

[3] Mike Davis, ibid.

some states and the virtual or actual collapse of others. In the words of Ignacio Ramonet, a "planetary coup d'Etat" is taking place before our eyes.

As a point of illustration, describing the terrorism threat in the greater Horn of Africa (Sudan, Eritrea, Ethiopia, Somalia, Djibouti, Uganda, Tanzania, and Kenya), Princeton N. Lyman and J. Stephen Morrison wrote that this area is "home to interlocking conflicts, weak and failing states, pervasive corruption, and extreme poverty. It is chronically susceptible to drought –15 million of Ethiopia 66 million citizens, for example, are at risk of famine. And it is plagued by HIV/AIDS". They mentioned, as one of the consequences, that "After September 11, 2001, the Horn gained attention as a possible haven for al Qaeda operatives driven from Afghanistan during Operation Enduring freedom".[4] The collapse of states in the region is reinforced by external factors. Among other things, as Muna Ndulo pointed out, "more than twenty-five African countries have debt burdens regarded by the World Bank as unsustainable; in 1992 the discounted present value of their debt service was more than 200 percent of their exports. Whatever process was originally at fault for the situation, it is simply unreasonable and unrealistic to demand that the debt be serviced. For countries where the ratio was 1000 percent or more, such as Mozambique, Sudan and Somalia, the situation is almost surreal, as the compounding of interest pushes servicing obligations to stratospheric levels".[5]

Yet, as underlined by the Polaris Institute, "at the same time the World Bank and the IMF have both made water privatization a condition for the renewal of loans with countries of the global south. A random review of IMF loans during 2000 revealed that 12 countries had loan conditions that imposed water privatization or full cost recovery. In general, it is African countries -the smallest, poorest, and most debt ridden countries-that experience those conditions. Tragically, more than five million people die each year in Africa from poor water access. In one case, Tanzania, the government was required by the IMF to assign the assets of Dar es Salaam Water and Sewage Authority to private management companies as a condition for receiving debt relief".[6]

The purpose of this is paper is to contribute to the many endeavors to break the vicious circle of conflict, disease, poverty and the cycle of famine in Africa. It suggests that the continent make the best use of the very weakness of its state structures by re-conceptualizing a development whose sustainability is based on

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[4] Princeton N. Lyman and J. Stephen Morrison, *The Terrorist Threat in Africa,* Foreign Affairs, January/February 2004, p. 77 (emphasis added)

[5] Muna Ndulo, *The Democratization Process and structural adjustment in Africa,* Indiana Journal of Global Legal Studies, Winter 2003, Volume 10, Issue 1, p. 366.

[6] Polaris Institute, *Global Water Grab. How Corporations Are Planning to Take Control of Local water Services,* January 2003, p. 10

an integrated and collective management of river systems. To this end, one needs to rethink and reformulate issues that are creating conflict on the continent and redesign new forms of cooperation. Absent that collective will, the zones of African future conflicts can easily be mapped for one good reason: resource wars have replaced ideological wars. Water is a less "lootable resource" than oil, timber, diamonds, and other strategic minerals. However, water is irreplaceable and cannot be expanded indefinitely. It is more vital for human life than oil and it carries a lot of emotion in times of crisis.

The Geopolitics of Hydropolitics: Global Apartheid

To understand the importance of water issues and the links between water and politics, a brief overview of the world wate**r** situation is in order.

Water covers 70 percent of the earth. Fresh water constitutes only less than 3 percent of the world's total water. Two thirds of that fresh water is locked in glaciers and polar ice caps. Most of the remaining resides in soil and underground aquifers. Thus, approximately, 0.01 of all water is accessible to the human population. Still, at the present time, water exists in abundance. "If the fresh and sea waters were spread evenly, they would cover the globe to a height of 2700 meters. Similarly, the 3 percent of fresh water, which constitutes the bulk of our supply, would still make a layer of 70 meters high if it were spread evenly".[7] According to current estimates, only about half of the total renewable world supply is being used but the available quantity is getting smaller and that which exists is far from equally spread.

Between 1850 and 1990, the world population doubled while water use grew 300 percent. During the past 50 years alone the world population grew by more than 3 billion people: from 2.6 billion in 1950 to over 6 billion in 1999. According to Michael Klare**,** "If this rate of increase persists, we will soon be using 100 percent of the world's available supply" probably by the mid-21rst century.[8] To complicate matters, water is a source of inequality both in terms of distribution and of consumption. With 22 percent of the world's population, China accounts for 7 percent of its renewable fresh water; Canada, with a half percent of the world's population, accounts for 9 percent of the world's renewable fresh water. Just 10 countries hold more than half the fresh water available on the planet[9]. Meanwhile, global population growth is heavily concentrated in those areas of the world -North Africa, the Middle East, and South Asia- where the supply of water

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[7] Tesfaye Tafesse. *The Nile Question: Hydropolitics, Legal Wrangling, Modus Vivendi and Perspectives* (London: LIT Verlag, 2001), p. 1.

[8] Michael Klare. *Resource Wars. The New landscape of Global Conflict.* (New York: A Metropolitan /Owl Book, 2002), p. 144.

[9] David B. Brooks. *Water, Local Level Management*. IDRC, Ottawa, 2002.

is already proving inadequate for many human needs".[10] Within the next 25 years, one third of the world's population will experience severe water scarcity.

Today 250 million people in 26 countries are affected by scarcity of water**.** For these millions who are already experiencing freshwater shortages, scarcity is defined as much by poor quality as by insufficient quantity.[11] Thirteen percent of the 2.4 billion of people lacking access to clean water are in Africa. Moreover, by 2050, seven billion people out of an estimated 9,3 billion living in 60 countries are expected to be affected, to various degrees, by poor water conditions . Right now, more than 1 billion people lack access to safe drinking water and 3 billions (close to half of the current world population) lack access to basic sewage systems with more than 90 percent of all the sewage produced in the developing countries returning to the land and water untreated. Altogether, Africa accounts for 4,7 percent of world's water consumption while North America, by comparison, consumes 19 percent and Europe 9.2 percent, [12] As for individuals' consumption, in North America and Japan, people consume an average of 600 liters of water each day. In Europe each person consumes in average 300 liters per day and, in water-scarce and water-stressed sub-Saharan Africa, between 10 and 20 liters per day. To understand what this means, "according to the World Bank, the minimum amount of water one human needs to remain alive and healthy is 100 to 200 liters per day, or 36 to 72 cubic meters per year."[13]

It is helpful to know that water scarce-countries are defined as those with less than 1,000 cubic meters available per person per year, and water-stressed ones as those with less than 500 cubic meters per person per year.

The discrepancy between the extremes aforementioned constitutes what may be termed a structure of water-based global apartheid. In such a global inequality and the local challenges it engenders, the potential for water-based trans-national conflicts should be taken seriously. The urgency of this situation can be explained by the fact that there are 215 trans-border rivers worldwide. Their basins cover 50 percent of the landmass and 32 percent of borders are made of water. About 40 percent of the world's population is living in river basins shared by many countries. In view of the global climate change and the anticipated alteration of precipitation patterns that will entail, the potential for water-based hardship and water-based conflict is likely to increase in many regions. Perhaps

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[10] Ibid., p. 140.

[11] David B. Brooks. *Water, Local Level Management*. IDRC, Ottawa, 2002.

[12] Sandra Fontaine, *Etat des lieux,* Jeune Afrique/L'Intelligent*,* no. 2202, p. 91

[13] Michael Klare, ibid., p. 142

most prominent are the Middle East around the Tigris and the Euphrates river basins and northeast Africa in the Nile river basin.

Africa in the Global Water Apartheid

In Africa, 60 percent of the continent is covered by trans-boundary river basins. However, about one third of the population (300 million people) lives under a situation of water scarcity. It is projected that by 2025 half of African countries will experience water stress and the sharing of water will play a significant role in inter-state relations amidst a combination of population growth and recurrent drought and famine in some parts of the continent.[14]

Focusing specifically upon the northeastern portion of Africa, projections regarding the rate of population growth are 3.2 percent per year in Ethiopia, 2.6 percent in Uganda, and 2.2 percent in Kenya and Sudan while the world average rate is 0.8 percent. In real numbers, that means: Ethiopia's population will increase from 62 million in 1998 to an estimated 212 million in 2050, an increase of 150 million; that of Uganda from 21 to 66 million, in the same period, and the populations of Kenya and Sudan will each rise from 29 million to 66 million. At this rate, the total population of the Nile basin including Egypt will see an addition of 300 million people between 2000 and 2050[15] while Egypt itself is another striking case.

At the time of independence in 1922, Egypt's population was about 13.5 million; by 1960 it was 30 million and, in 1998, the population had grown to 66 million. The population of Egypt is expected to reach 95 million by 2025. With all of its arable land already under cultivation, the urgency of the need to convert desert into cropland and to ensure a reliable supply of potable water is plainly evident. "The next war in our region will be over the waters of the Nile, not politics," said the then Minister of State of Egypt for Foreign Affairs, Boutros Boutros-Ghali in 1988. His prediction must be regarded with the utmost seriousness. In spite of the limitations of the current models of projection, "even slight decreases in long-term water availability will place severe political strains on the region, as seen during the period 1979 to 1988, when a drought reduced the average runoff in the Nile by 10 percent". [16]

The statistics above, although sobering in and of themselves**,** show little of the complexity of the issue. Water moves through communities and across national boundaries. It is needed for drinking and for sanitation, for agriculture and, via

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[14] Tesfaye Tafesse, op. cit. p. x

[15] Ibid., p.157

[16] Douglas D. Parker and Yacob Tsur, edit. Decentralization and Coordination of Water Resource Management. Kluwer Academic Publishers, Boston, 1997, p. 419-420.

fishing, as a source of protein. It is a vehicle for transportation and communication among populations. It provides a means of generating electricity. It embellishes the environment and offers an outlet for recreation and tourism. It has been the wellspring of religions and of cultures. As it is becoming scarcer, water gains greater economic value. Yet its social meaning and cultural value remain indispensable ingredients of daily life. Materially and symbolically, water has no substitute. It cannot be recreated or expanded through artificial means and it exists in a limited supply.

Africa is particularly vulnerable to geopolitical implications of hydrological variations. Borders are the colonial legacies of Belgium, Britain, France, Germany, Italy, Portugal and Spain. Consequently, every African country has at least one shared river. Few of these rivers are effectively jointly managed. There are at least 34 rivers shared by two countries; 28 (virtually half of the continent's international rivers) shared by three or more countries. Ten of the international river basins (Congo, Limpopo, Niger, Nile, Ogooue, Okavango, Orange, Senegal, Volta and Zambezi) are shared by four or more African countries. The Nile is shared by 10 riparian states: Burundi, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda and the Democratic Republic of the Congo.

Another way to assess the potential for water-based conflict is to take a close look at the number of international rivers within individual countries. Every country has at least one international river; 41 of them have two or more and 15 have five or more. Guinea, in particular, has 14 international rivers; Ivory Coast has 9 and Mozambique also 9. To map potential zones of water-based conflict, one should look at both countries that have a high concentration of international rivers and river basins that are shared by many countries. Altogether, the network of African international rivers ties almost all African nations together.[17] Africa's hydrology alone is a solid basis for African Union. But to accomplish union, countries need a new generation of diplomatic personnel in quantity and quality focusing on issues internal to the continent. It is not easy to negotiate the management of one single international river. It is even more challenging when one has more than one such river to negotiate and manage. In the absence of a new style of cooperation, facilitated or not by external organizations such as the World Bank, dominant regional economies (Egypt, Nigeria and South Africa for example) tend to adopt hegemonic behaviors. Provided that the African economy is largely rural, not only are diplomatic personnel needed but also solid administrative structures are in dire need to ensure a sustainable local economy and prevent intra and extra-communal strife. The problem is not only about water quantity (who gets it?) but also about quality (who gets what?). The interests of downstream communities are not the same as of those living upstream. The management of water, indeed, is an issue of good governance; and of ethics and diplomacy. It is one of the cases in which emotion can quickly overwhelm rational

[17] Claudia Sadoff et al, op. cit., pp.9-10.

behavior and where local crises can quickly spill over whole regions. The best way to deal with such eventuality is to establish a pre-crisis working relationship.

III. Reshaping Cooperation

"Nearly 300 million Africans -a number approximately equal to the population of the United States- live in extreme poverty, surviving on less than one dollar a day. Most lack access to health services and drinking water".[18]

However, as water is increasingly becoming a commodity, its market value is overshadowing its social value. International firms come in to privatize water supply and states, often pushed by the World Bank lending practices, privatize the distribution of their fresh water in order to attract external investment.[19] A particular consequence of this market speculation is investment in structures of non-consumptive use of water: the generation of hydroelectricity.

In this domain, there is more cooperation than conflict in Africa. Regional integration is being accomplished more rapidly through the building of hydro-electrical networks than through the NEPAD-ization of the continent.[20] It is also the path of the least resistance as only 5 percent of African water resources are currently exploited. In the north, Mediterranean countries will complete their hydroelectricity network by 2005. Meanwhile Egypt, Libya, Jordan and Syria are already connected; Western Europe is directly linked to Morocco and indirectly to Algeria and Tunisia. The Southern Africa Power Pool (SAPP) includes South Africa and a dozen other African countries. The *Pool Energetique de l'Afrique Centrale* (PEAC) comprises half dozen countries. In West Africa, there are networks around the Senegal, the Volta, the Mono and the Niger rivers respectively. A continent-wide network of hydroelectricity is being discussed.[21]

However, this undertaking consists of managing only one aspect of the complex issue of water. For communities that have no access to drinking water electricity is an arrogant luxury. A case such this can be made about the dam of Cahora Basa in Mozambique, constructed initially by Portugal to supply electrical power to apartheid-South Africa which provided the financial resources. Meanwhile, peasants in Mozambique lost their habitats, their shrines and their indigenous methods of food production, a typical example of how technological prowess may be good for a few and detrimental for the many.

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[18] US Catholic Bishops, *A Call to Solidarity with Africa,* July 2002, p. 13.

[19] Polaris Institute, ibid.

[20] NEPAD is New Economic Partnership for Africa's Development

[21] Eau et electricité: l'Afrique en quète de solutions*, Jeune Afrique/L'Intelligent,* pp. 87-101.

In face of competing uses of water, water management should be conceived as an integrated system to make the many possible uses optimal, i.e., complimentary rather than contradictory. Describing the experience of South Africa, Ian R. Calder wrote: "Even more dramatic are reports of a stream in Mpumalanga which, before the clearing of a 500 metre strip of riparian *Eucalyptus grandis,* disappeared within 50 metres of entering the stand. About three weeks after clearing the eucalypts the stream was visible for 200 metres in the stand, and after one month it was running through the stand. It was postulated that it had taken about a month for the stream and rainfall to recharge the water table, restoring a perennial stream from a dry streambed. The hydrological dangers of invading trees are not just local in their impact. It has been calculated that unless curtailed, invaders will eventually reduce the water supply to Cape Town by 30 percent. It has also been shown that the cost of water from the best dam option is several times more expensive than the cost of water yielded through clearing invading aliens".[22] If Cape Town were situated in a neighboring country, then diplomatic negotiations and international cooperation would be in order.

There is one telling instance. It is not excessive to say that, were significant dams built upstream in a neighboring country, in the best of cooperative endeavors, the 2000-2001 floods in Mozambique would have been less severe. In view of the examples just mentioned, water should be managed in an *integrated manner*. And rivers should also be dealt with on the basis of *basin systems*. Every stakeholder from the lowest to the highest levels (communities, states, regions, public and private sectors) should take part in the administration of what is the best example of public good. This can only be a participatory process both in the decision-making and in its implementation. This kind of system management will reconcile not only competing uses of water but also different spaces, as situations are different with every river, with the same river at different locations and different times. It will bring together indigenous knowledge and modern science; reconcile peoples' behaviors by mitigating conflicts that arise from the clash of (social) spaces and (cultural) times as opposed to *perceived* clash of interests. The way a basin-system water can be managed in an integrated manner is to combine (a) what David Rosenbloom called *representative bureaucracy* (a structure of decision-making and implementation that appears rational and legitimate to people because it is a collective product)[23] and (b) the *communitization*[24] of water as a public good (understood in this writing as a cooperation of all local stakeholders).

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[22] Ian R. Calder, *The Blue Revolution. Land Use and Integrated Water Resources Management* (London: Earthscan Publications Ltd, 1999), p.149

[23] David Rosenbloom, *Representative Bureaucracy*

[24] *The Water Man,* The Economist, July 19, 2003, 14.

The current chaotic situation calls for an urgency to devise different ways to mange African water resources so as to mitigate potential conflict and enhance regional cooperation. The case of the Nile valley demonstrates both conflict situation and the necessity of cooperation for a basin-system management.

The Nile Basin: A Case for Conflict Transformation

The Nile is the longest river in the world. It traverses 10 states, from equatorial Africa in the south to the Mediterranean Sea in the north of the continent, some 6,800 kilometers over 35 degrees of latitude[25] (4th degree south to 31st degree north). The basin of the great river encompasses 3,350,000 square kilometers, i.e., 10 percent of the continent land mass, inhabited by 40 percent of Africa's population. "If the current rate of the population growth in the Nile basin remains unaltered in the immediate future, which would highly likely be the case, the total population of the basin will climb to 859 million by the year 2025 from its size of only 245 million in 1990", according to one writer.[26] In the present and the future, the Nile riparian states will experience water scarcity. Egypt's Mediterranean neighbors, i.e., Libya, Tunisia, Algeria and Morocco as well as its Middle Eastern neighbors will also experience the same situation.

However, Egypt's situation deserves special attention. First, "with 98 percent of the country being desert, the growing population is concentrated in 2 percent of the land".[27] Second, Egypt is the first economic and military power in the region. As a consequence, Egypt tends to exercise control rather than to seek cooperation in the handling of the Nile River waters. Knowing that "the Arab-Israeli war of 1967, for example, was largely triggered by fighting over control of the tributaries of the Jordan river"[28], if the Nile can be compared to Jordan (that separates not only Israel and the Kingdom of Jordan but also the Jewish state and the Arab/Muslim world), then the Nile (joining sub-Sahara and northeast Africa) is the equivalent of the Jordan River for the continent. The history of modern Egypt in relation to its use of the river is one of confrontation, threat and intimidation.

Is it quite remarkable that, in 1979, after signing a peace treaty with Israel, President Anwar Sadat declared: "The only matter that could take Egypt to war is

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[25] Jan Hultin, "The Nile: Source of life, Source of Conflict", in Leif Olhsson, op. cit. p. 31; Tesfaye Tafesse, gives 6,825 km, op. Cit. p. 23 and Michael Klare gave 6,650 km (4,130 miles) of length, op. cit. p. 149.

[26] Tesfaye Tafesse, op. Cit. p. 2

[27] Ohlson Leif, edit. *Hydropolitics. Conflicts over Water as a Development Constraint,* (Dhaka: University Press Ltd, 1995), p. 31

[28] Michael Klare, op. cit. p. 139

water". A little more than a decade later, in 1990, Boutros Boutros-Ghali, then Minister of State for Foreign Affairs, made the same veiled threat: "The national security of Egypt, which is based on the water of the Nile, is in the hand of other African countries". The same year, 1990, the Egyptian government reported that Israeli engineers were working in Ethiopia on a new dam project on Lake Tana, the source of the Blue Nile.[29] Indeed, the strategic trade-off seems to read that Egypt needed peace in Palestine in order to be able to protect its more vital national security interests in Africa. To be true, if the Nile may be a source of war in north Africa, it was certainly an element in the peace dealing with Israel: (a) Anwar Sadat made a promise in December 1979 to transfer by canal to Negev desert about 365 million m3 of the Nile water per year to Israel; (b) a similar project, as far back as 1974, was conceived of by an Israeli water expert, Elish Kally, to satisfy Israel's water needs and, (c) later on, in a December 1993 speech, the governor of north Sinai, General Mounier Shash, suggested plans to extend the El-Salam Canal past El-Arish to Rafah in Gaza Strip, thus escalating rumors about providing Nile water to Israel and Palestine.[30] Should these rumors materialize, tensions are likely to diminish in Palestine and more likely to increase in the Nile valley.

Under President Gamal Abdel Nasser, the best known hydropolitical crisis with geopolitical overtones took place in 1956. Nasser was planning on undertaking the second phase of a major engineering work project on the Nile, i.e., the Aswan High Dam upstream and within the reservoir of the original dam of 1902. In July 1956, the United States refused to fund the project stating that, "…the US Government has concluded it is not feasible in present circumstances to participate in the project. However, it is prepared to consider at an appropriate time and at the request of riparian states what steps might be taken towards a more effective utilization of the water of the Nile for the benefit of the peoples of the region"[31].

However, the Soviet Union decided to fund the dam, the largest in the world, which was started in 1959 and completed in 1970, with 180 watergates and 12 power-generating units supplying 2.1 million kw of electricity.[32] In the meantime, Nasser nationalized the Suez Canal in order to generate funds for his project. As co-owners of the canal, Britain and France sent troops in. The military expedition was condemned by the then two super-powers, the US and the Soviet Union. The troops were withdrawn, but the geopolitical landscape had changed. Egypt

[29] Jan Hultin, The Nile: Source of Life, Source of Conflict, in Leif Ohlsson, op. cit., p. 37

[30] Tesfaye Tafesse, op. Cit. p. 55.

[31] Ibid. pp. 36-37.

[32] Ina R. Calder, op. cit. p. 88-89.

and its Soviet ally continued and expanded their friendship. France, considering Israel as a second front of their conflict with Egypt, established scientific and technological cooperation with Israel until 1967 when France's President, General Charles de Gaulle, condemned Israel for initiating what was later termed as the Six-Day War. The region as well as the Great Horn of Africa became a major battlefield of the Cold War. A distant and indirect consequence of the mid-1950s crisis was the risk of direct of confrontation between the US and the USSR during the Yom Kippur war of 1973 between Israel and Egypt. Whether the French continuing military presence in Djibouti is in any manner one of the consequences of the mid-1950s experience is not clear. However, the strategic location of Djibouti can be used as a launching pad for operations in the region as well as in the Middle East.

The 1956 crisis was only the tip of the underlying iceberg. The Nile, source of life, has also been along-standing source of conflict. After the British protectorate ended in 1922, the Egyptian government was left with one major concern: the Sudan and its use of the Nile. That concern escalated when, in 1954, Sudan presented plans for a dam on the Blue Nile for extension of irrigation in the Gezira and to provide hydroelectricity for Khartoum-Omdurman. Egyptian saw the Roseires dam as interfering with the full use of their projected Aswan dam. Tensions had remained even after Sudan's became independent in 1956. The Roseires dam was finally completed in 1966 with financial help from the World Bank and West Germany. After their respective independence, Tanganyika, Uganda, Rwanda, Burundi and Zaire considered their portion of the river as a matter of national sovereignty. By then the former colonial power, Britain, was in no position to lecture anybody about the best use of the Nile River. Though, a *Report on the Nile Valley Plan* published in Khartoum in 1958 (a culmination of fifty years of studies of the Nile hydrology by British consultants) insisted that the whole of the Nile valley be treated as a hydrological unity.[33] Obviously politics has been more difficult than science. And the fear of Cairo about the Nile water easily translates into national security calculations.

Absent cooperation agreements, three strategic options remain for Egypt: (1) covert military action so as to tolorate or support instability in neighboring countries, and dircet military interventions using (a) airpower capable of destroying unwanted dams in the basin, or (b) ground forces for military occupation.

Egypt currently enjoys an economy of forces projection by tolerating or supporting internal factions of its rivals for Nile water in a region rich in civil wars and communal strife. Almost all the riparian states are plagued by civil wars, communal strife or flow of refugees. This situation has been a handicap for economic development including plans to use the Nile water. Burundi, Eritrea,

[33] Jan Hultin, op. Cit. p. 33

Ethiopia, Kenya, Rwanda, Sudan, Tanzania (a new political entity combining, in the 1960s, Tanganyika and Zanzibar) with a brief war against the regime of Idi Amin Dada, Uganda and the Democratic Republic of the Congo are all affected to various degrees by this situation of chronic instability. In real politics, it is in the best interest of Egypt that the situation remains chaotic, particularly when, in addition, other riparian states themselves have developed the pernicious habits of supporting their neighbors' insurgent groups. For example, in 1960, Ethiopia allowed Israeli experts to cross Sudan's border and establish links (off and on over a period of three decades) with the guerrillas fighting against Khartoum; Ethiopia itself complained that Sudan and other (unspecified) Arabs countries supported the rebels in Eritrea and the Oromo Liberation Front in southwestern Ethiopia. Currently, it is reported that Uganda has been giving support to the Sudanese Popular Liberation Army (SPLA) of southern Sudan and that Khartoum, in turn, is supporting the Lord's Resistance Army (LRA) in northern Uganda.[34] "Apparently, sensing advantage in this state of affairs, Egypt sought to perpetuate its privileged position on the Nile by aiding antigovernment forces in neighboring countries. This entails support for Somali irredentists in the Ogaden region of Ethiopia, and the rebels of Sudanese Popular Liberation Army (SPLA) in southern Sudan".[35] The civil war in Sudan, with a strong component of identity conflict, is worsened by Khartoum's efforts to retain control over both the White Nile (in the south) and the newly developed oil fields in Sudan central region. This particular strategy is favored by circumstances. "With the Cold war over ... the restraining influence of the superpowers has dissipated, and so local powers like Egypt, Sudan, and Ethiopia have more room in which to pursue what they view as critical national interests –as so tragically illustrated by the disastrous war between Ethiopia and Eritrea in 1998-2000".[36]

So, the other two options at Egypt's disposal are direct military actions. The first is to develop an overpowering air force capable of operating throughout the region. If and when need be, this air power could be used to bomb dams and other facilities likely to affect the availability of the Nile water to the Egyptian population. Egypt made that threat in 1978 when Ethiopia announced plans to use the Nile water for a domestic irrigation scheme. In the current state of balance of forces in the region, such a policy is largely enforceable with the existing Egyptian air power. Egypt possesses hundreds of late-model American and French combat planes. Although this armada is inferior to Israel's, it has no match in riparian countries.

The second option is occupation. That possibility has actually been demonstrated when, in 1994, its forces went into the Halayeb district, a disputed border area on

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[34] Ibid. p. 39

Michael Klare, op. Cit. p. 154.

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[36] Michael Klare, op. Cit.p. 154.

the Red Sea occupied by Sudan. Egypt has 3,855 tanks (including 555 M-1A1 Abrams, America's top-rated tanks), plus thousands of armored personnel carriers.

Ironically, restoring peace within riparian countries may only increase tension in the Nile valley. Peace talks are under way in many places: in Sudan and the Great lakes region; there is a peace agreement between Ethiopia and Eritrea. When peace prevails, then economic development will restart and more water will be needed. Indeed, Ethiopia has announced ambitious plans to divert water from the Blue Nile to new agricultural developments. Uganda is considering new hydroelectric projects. Sudan has expressed intentions to draw more water from the river. Meanwhile, Sudan's President al Bashir has been busy increasing his country's military capabilities with assistance from Iran and pre-Saddam Iraq in addition to weapons systems from China and the former Soviet Union. With recent changes in the configuration of its allies, and defections and divisions within the ranks of opposition groups, the situation may be ripe for conflict resolution in the Sudanese civil war. With the prospect of peace, the Sudanese government will be in the position to proceed with extensive water projects, particularly with a new dam at Dongola, north of Khartoum.[37]

In a continuing atmosphere of threat and in face of Egypt's overwhelming military superiority, a scenario may develop in which various configurations of anti-Egypt coalitions may emerge.

In the final analysis, the clash of interests may, at least partly, stem from the discrepancy among *social temporalities* and their misperception and mismanagement. The conflict situation is not only about space, water and other resources. It is also about *time*. A 1989 statement of Boutros Boutros-Boutros-Ghali seems to suggest that understanding of the core issues: "What is worse is that each Nile country expects different benefits from the control and management of water resources…The other African countries…have not reached the level of agriculture through irrigation that we have, and therefore are not as interested in the problem of water scarcity. It is the classical difference in attitudes found among upstream and downstream countries which are on the same international river".[38] Water basins typically show how conflicts emerge not only within a space but also as a result of discrepancies in social temporalities. If reason, i.e., perception of shared interests prevails over emotion, however cooperation is possible. Indeed, there is also a history of cooperation in the Nile valley.

With the exception Ethiopia and Eritrea in 1998-2000, Nile riparian countries have not openly designated one another as enemies. In addition, there haven

[37] Michael Klare, pp. 154-155
[38] Ibid. p. 38

have been many attempts at cooperation in the Nile valley. As tensions continue, conflict resolution attempts take the form of treaties, basin organizations, commissions and "initiatives".

In 1929, the Nile Valley Agreement between Egypt and Sudan was to regulate planning and use of the water. The Aswan High Dam had implications for Sudan including resettling 50,000 Nubians whose homelands were expected to be flooded. Sudan' own plans upset Egypt and bilateral relations were negatively affected. A 1959 "Agreement for Full Utilization of the Nile Waters" was an attempt to repair that adversarial relationship. A joint committee was established to supervise all working arrangements for future conservation projects in the basin.[39] Two flaws, however, characterized the 1959 agreement. First, it failed to include the other riparian states. Second, it was too rigid: it failed to make room for amendments as climatic conditions, demographic growth and economic situations would necessarily evolve. For example, this agreement provided that, out of an annual flow of 84 billion cubic meters (bcm), Egypt would be allocated 55.5 bcm of the Nile water per annum (about two thirds of the estimated average) and Sudan would be receiving 18.5 bcm per annum . The remaining flow of 10 bcm per annum represented the assumed loss through evaporation and seepage from Lake Nasser.[40]

In 1977, riparian countries of the Kagera (an important tributary of the Nile), i. e., Burundi, Rwanda, Tanzania, and Uganda, created a basin organization. Egypt itself tried to create, unsuccessfully, a basin-wide organization. Egypt's failure can be seen, in part, as one the consequences of the civil wars in Burundi, Ethiopia, Rwanda, Sudan and, particularly, due to political tensions between Sudan and Egypt. Also, the "Nile Basin Initiative" was launched in 1992 by the Council of Ministers of Water Affairs of the Nile Basin States to promote cooperation and development in the valley (COM). A Technical Cooperation Committee for the promotion of the Development and Environmental Protection of the Nile Basin (TECCONILE), comprised of six of the riparian states, the Democratic Republic of the Congo, Egypt, Rwanda, Sudan, Tanzania and Uganda is to assist parties in their development efforts, so as to ensure an integrated approach and in a sustainable manner.[41] A lot of work is still needed to created system-based integrated management of the waters of the Nile.

Conclusion

Water, a powerful necessity, has become an object of intense competition on the global market. This coincides with a period of history when ideological wars of the Cold War era are being replaced by resource wars. As water is becoming

[39] Jan Hultin, op. Cit. pp. 32-33

[40] Michael Klare, op. Cit. p. 153.

[41] Ian R. Calder, op. cit., p. 89 and p. 171

scarcer, the potential for water-based conflicts is increasing, particularly around internationally shared rivers. To resolve such conflicts and reshape cooperation in general, two combined approaches can be adopted: (a) an integrated management of water sources; that will reconcile and optimize the variety of possible uses of water; (b) a basin-system cooperation, that brings together all stakeholders, from the lowest community level to the highest international level, including public and private sectors, bringing together indigenous knowledge and modern science, integrating into one system differences in space and time management.

Africa, because of its many internationally shared rivers and its states endowed with many international rivers, is a perfect candidate for that double approach to water resources management. Water is a clear and immediate basis for an Africa Union. Cooperation in hydroelectricity is moving much faster than the NEPAD-ization of the continent. For such cooperation to take roots and expand states have to revisit their conception of national sovereignty.

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