Water Management Conflict and the Challenges of Globalisation notes

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Abstract
This contribution explores the globalisation of water issues. It addresses a number of emergent patterns in this process, i.e. the retreat of the state, the growth of transborder links, the development and expansion of international law, increased private sector involvement in global and national water regulation and management, the spread of global social movements addressing water issues, the increase in the number of global governance agencies involved in this field, and the formulation of globally shared values with regard to water.

Introduction

Water is life. Water is politics. Water is also scarce. Water is also a global issue. Globally, water is abundant, but unevenly distributed in time and space. See Table 1. As a natural resource it shares a number of characteristics with other resources. Yet, not all resources share water's significance as the basis for all forms of life. Water is one of the few renewable resources via the hydrological cycle. The fact that water is mobile gives rise to tensions pertaining to ownership and control. Water can be used in a number of ways such as for agriculture, irrigation, industrial and human consumption (Young et al 1994:1-20).

As globalisation intensifies, the power of national governments to address water issues declines. The Westphalian order of the state is increasingly threatened. Water issues, unlike the Westphalian concept of the state as a fixed territorial space, are not limited to particular social and geo-political boundaries. Furthermore, water issues challenge another Westphalian notion, that of the state's sovereignty. In some cases, states have given up their sovereignty in order to have sustainable water resources. Water issues have since the 1960s become a transnationalised political issue (of who gets what, where, when and how). In this sense, globalisation has reconfigured the state and its power vis-à-vis water (for example) in a number of ways. The state's territory is increasingly becoming part of a borderless world. Water as a transborder issue redefines geography, community and power. Secondly, state sovereignty on water is increasingly eroded. New international rules and authorities govern water issues. Thirdly, state autonomy on water issues is compromised. The state cannot act alone on water issues anymore. It has to consult with a number of various other actors. Fourthly, the question of citizens' allegiance towards the state is challenged. New centres of public authority are created outside the state's jurisdiction. Citizens are more likely to align themselves with a transnational social movement on a particular issue. Lastly, the world is not anarchic, but rather a heterarchy, i.e. a system in which political authority is shared and divided between different layers of governance and in which various actors share in governing (McGrew 2000:127-167)2.

Globalisation is a highly contested concept and definitions of the concept abound. However, a clear and specific definition is needed to develop sustainable explanations, precise evaluations and effective policies. For the purposes of this paper, globalisation is referred to as "processes whereby social relations acquire relatively distanceless and borderless qualities." This process is an ongoing trend

whereby the world becomes a borderless social space. However, this trend does not mean the end of fixed territorial geography. Although elements of globalisation have been witnessed previously in history, it was since the 1960s that globalisation unfolded to an unprecedented extent. It is a process that touched the lives of almost every human being on the globe. Yet, the trend has spread unequally.

This paper examines the globalisation of water issues, which relate to basic human needs and human health, food security, ecosystems, and national security. For the purposes of this paper, water issues are defined as issues relating to water access, quality, quantity, management and control, and to the allocation of water resources. Water issues also include concerns over global and regional food security and sufficiency, as well as the link between water and health.

There are a number of ways in which water issues can be said to have become globalised. There are water issues which are local in their occurrence and scale, but global in their impact. Others are intrinsically transnational and therefore inherently global. There are about 250 international watersheds covering more than 50% of the land surface of the globe and including more than 40% of its population. Some water issues relate to the exploitation of the so-called global commons. As water is intimately connected with all aspects of the natural environment and most human activities, it is a valuable resource which can often be coupled with disparities in power or wealth. Water is the basis for all forms of life. It is also the basis for development in industrialised societies as well as agrarian economies. Water scarcity remains one of the most fundamental development constraints in developing countries.

The globalisation of water issues is manifested in, inter alia, global awareness, the number of multilateral organisations and agreements addressing water issues, the expansion of International Law to deal with water, and the growth in the number of NGOs and social movements involved in global water issues.

Emergent Patterns in the Globalisation of Water Issues

Water issues (be it water scarcity, droughts, floods, managing of water resources, the building of dams) are increasingly shaping global social relations. Not only does this occur through large-scale projects such as dams, but also because a significant number of main water resources of states originate outside their borders. In this regard a number of emergent patterns in the globalisation and global governance of international water issues is evident and will be addressed in this paper:

On a global scale we stand on the verge of massive global population growth. Since 1945 the world's population has more than doubled. More people means more water needs. As the development gap between developed and developing countries widen, an increase in the divergence between these economies is evident.
The economic globalisation of water is taking place. The global recognition of water as an economic resource was one of the cornerstones of the Mar del Plata, Dublin and Rio statements (Barlow 1999, Becker et al 2000:55-99). Also, water supply schemes often attract large foreign direct investment by multinational companies to a state. This was the case in, inter alia, the Lesotho Highlands Water Project in Lesotho and the Illisu Dam project in Turkey (Rohr 2001).
The process of the globalisation of water issues is sustained by, and produces, national and regional

interdependencies. During the Cold War era, regionalism was determined by security arrangements. The focus has subsequently shifted to economic arrangements that, inter alia, deal with water issues such as the Southern African Development Community's (SADC's) Water Sector.
An institutionalisation of intergovernmental and transnational networks of international political interaction on water issues is expressed in, inter alia, the establishment of formal organisations such as the United Nations (UN) and transnational social movements.
One of the main consequences of globalisation is its significant impact on the state. This is illustrated in the growth of additional loci of governance besides the state (Scholte 1999:15, Scholte 2000:8-9,41), the growth of new centres of authority on water above, below and alongside the state, and the state's declining ability to provide in all the welfare needs of its citizens.
The emergence of an evolving global polity on water issues is evident. In spite of the fact that no global government exists, a number of global and regional organisations, established to address transborder water issues, constitute an emergent system of global governance, which reflects increased political co-ordination among governments, intergovernmental organisations and transnational social movements. In this process, common goals are worked for, via agreed rules, values and principles. Water is increasingly becoming an issue dealt with in multilateral forums.
The emergence of a global/transnational civil society on water issues is noted. NGOs, advocacy groups, scientists, academics and ordinary citizens' organisations are increasingly playing an influential role in mobilising, organising and exercising influence on a particular water issue. This has been made possible, inter alia, by the spread of global communications systems such as the Internet.

Global Awareness of Water Issues and Scale of the Problem
By the end of the 20th century, water as an international issue has been placed solidly on the global agenda. Since the 1960s, global awareness of the nature and scale of international water issues increased. One of the outcomes of the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro was that the UN General Assembly designated 22 March of each year as the World Day for Water (or World Water Day). Each World Water Day has a particular theme and a particular UN agency as lead agency. In 2001 the theme was Water and Health, and the World Health Organisation (WHO) was the lead agency for the day (World Water Day 2001).

Water issues are not new to international relations. Increased industrialisation and rapid population growth are but two issues that have greatly increased the scale and intensity of water issues. As table 2 indicates, water ignores political boundaries and has multiple and conflicting demands on its consumption. Despite the fact that more than 3600 international treaties have been signed over various aspects of international waters since AD 805, international law pertaining to water is in its infancy and is paradoxical and unenforceable (Wolf & Hamner 2000:123-124).

Table 2: Rivers or lakes with five or more countries forming part of basin (Mather & Chapman 1997:201)

The Role of the United Nations, Global Governance Agencies and Regime Formation

The UN agencies dealing with water are many and varied. There is no single agency dealing with

water. Instead there are a number of agencies each dealing with a particular aspect of water, and some regional UN bodies co-ordinating water concerns in a broader regional context. Box 1 contains some of the UN agencies with water interests.

Environmental organisations played a limited role within the UN before the Stockholm conference. The conservation of natural resources was part of the mandate of the Food and Agricultural Organisation (FAO). UNESCO played an important role in the establishment of the International Union for the Conservation of Nature (IUCN) in 1948. The IUCN has both governmental and non-governmental affiliates. The IUCN was instrumental in the establishment of the WWF. Other significant activities before the Stockholm conference was the International Geophysical Year (1957-1958), the IUCN's First World Conference on National Parks (1962), UNESCO's International Hydrological Decade (1965-1974), the International Hydrological Programme, the Operational Hydrology Programme and UNESCO's Biosphere Conference of Scientific Experts (1968).

Box 1: Selected UN agencies with water interests (Young et al 1994:24)
UN Department of International Economic and Social Affairs, UN Development Program (UNDP), UN Environment Programme (UNEP), United Nations University, UN Economic Commission for Africa, UN Economic Commission for Europe, UN Economic Commission for Latin America and the Caribbean, UN Economic and Social Commission for Asia and the Pacific, UN Economic and Social Commission for Western Asia, UN Centre for Human Settlement, Office of the UN Disaster Relief Coordinator, World Food Programme, International Labour Organisation, Food and Agricultural Organisation of the UN, UNESCO, World Health Organisation, World Bank, UNCED.

The 1972 UN Conference on the Human Environment in Stockholm marked a watershed in UN deliberations on the environment and water issues specifically. This conference was also a watershed in terms of the engagement of transnational movements concerned with water issues. A record number of 134 international environmental organisations participated in the proceedings. The Stockholm conference itself and its preparations contributed to increased international awareness. One of the major outcomes of this conference was the establishment of the United Nations Environment Programme (UNEP). Another outcome of this conference was the setting up of Ministries of the Environment in a number of states. Furthermore, the Stockholm conference framed two of the major environmental debates to date, i.e. the relationship between the environment and development, and state resistance to pressures on national sovereignty over natural resources within its borders (Conca 1996:103-119).

Global concern over the global implications of water problems has subsequently been the focus of a number of conferences, conventions and meetings, including the UN Conference on Water Development and Management (Mar del Plata, 1977), the launch of the UN International Drinking Water Supply and Sanitation Decade (1980-1990), the publication of the World Commission on Environment and Development's report, Our Common Future (1987), the Global Consultation on Safe Water and Sanitation for the 1990s (New Delhi, 1990), the UN Conference on Environment and Development (the Earth Summit) (Rio de Janeiro, 1992), the World Conference on Water and Environment: Development Issues for the 21st Century (Dublin, 1992), the Inter-ministerial Conference on Drinking Water Supply and Environmental Sanitation (Noordwijk, 1994), the UN Convention on the Law of the Non-Navigational Uses of International Watercourses (1997) and the International Conference on Sustainable Development of Water Resources (New Delhi, November 2000).

Other notable UN conferences that dealt with water related activities include the Conference for Small Island Developing States (Barbados, 1993), the International Conference on Population and Development (Cairo, 1994), the Fourth Conference on Women (Beijing, 1995), Habitat II Conference (Istanbul, 1996), and the World Food Summit (Rome, 1996).

Further UN involvement was sparked by the finding of the Committee on Natural Resources of the Economic and Social Council that some 80 states, including 40% of the global population, are already experiencing serious water problems. The UN Commission on Sustainable Development at its second session in 1994 noted the rapid deterioration of water quality and quantity in certain states. This Commission requested a Comprehensive Assessment of Freshwater Resources of the World, which was submitted to the Special Session of the General Assembly in 1997. This Assessment was prepared by a number of UN agencies such as UNEP, UNDP, UNESCO, WHO and FAO. The Assessment concluded that in many developed and developing states water use is not sustainable; water use is growing at twice the rate of the global population rate; water shortages are causing health problems limiting economic and agricultural development; and human water demands strain water resources such as rivers, causing severe water pollution and damage to the ecosystem4. In 2000 UNESCO announced the inauguration of a World Water Assessment Programme (WWAP). It was adopted by the UN as a system-wide programme and contributes to global awareness of the role of water within human development (Annan 2001).

There has been an increase in the number of global governance agencies involved in managing and regulating international water issues. International water regimes came into being with the establishment of the Mekong River Commission in 1957. This Commission continued to function despite the Vietnam War. In this regard the United Nations, the Mekong River Commission, the World Commission on Dams (WCD), the World Water Council, the World Bank and others play an important role (World Commission on Dams 2000). The establishment of various international commissions to deal with water issues is one more indication of the globalisation of water issues. OKACOM, for example, is an initiative of the three states (Angola, Botswana and Namibia) in the Okavango River Basin. These states established the Permanent Okavango River Basin Water Commission in 1994 to co-ordinate and collaborate on the sharing of the basin's water resources5.

The Retreat of the State and the Growth in Transborder Links on Water

One of the main features of globalisation is the "retreat of the state". In this sense, water issues are increasingly becoming supranational issues. Increased international multilateral (as opposed to national) efforts to address international water issues are evident since the 1970s.

The global increase in transborder links (such as bilateral or multilateral agreements) is one other example of an emergent pattern of the globalisation of water issues. The establishment of a number of international collaborative arrangements on water such as the Global Water Partnership, the Water Supply and Sanitation Collaborative Council and the World Water Council (WWC) reflects another aspect of the increasing globalisation of water issues. One illustration of efforts to establish transborder links to manage water resources is the establishment of the Global Water Partnership (GWP) in Stockholm in August 1996 and the First Water Forum in Marrakech in March 1997. The Marrakech Declaration laid the foundation for the development of a World Water Vision as it was at this meeting

that the WWC was mandated to undertake this task.

The GWP is an international network open to all parties involved in water resources management such as governments of developed and developing countries, UN agencies, multilateral banks, professional associations, research organisations, the private sector and NGOs to formulate, co-ordinate and implement integrated water resource management programmes. The GWP was one of the participants of the Second World Water Forum in The Hague in March 20006.

The World Water Council (WWC), an international water policy think-tank, was established as a non-governmental organisation in 1996. The WWC consists of 200 member institutions representing more than 50 states (or two thirds of the global population), a number of international organisations, governmental agencies, the private sector and NGOs. Responding to an international call, the WWC embarked on the development of the Vision for World Water, Life and the Environment for the 21st Century. A group of world leaders was appointed to guide this process under the name of the World Commission for Water for the Twenty-first Century. The GWP was the WWC's major partner in this process. Workshops and consultations were conducted around the world over a period of 15 months. Mid-term results were released in Stockholm in August 1999. The final report was released in March 2000 at The Hague during the Second World Water Forum (Haldenwang 2000). The World Water Vision is one of the most comprehensive international assessments of water challenges for the 21st century. The document outlines the uses of water in the world today as well as the threats to future water resources, water futures, its vision and how to achieve this vision by including governments, NGOs, local communities, UN agencies and multinational corporations (MNCs) (Cosgrove & Rijsberman 2000).

Increased Private Sector Involvement in Global and National Water Issues, Policy and Regulation.

The idea of a hydrosocial contract was first mentioned at the 9th Stockholm water Symposium. It is an unwritten contract between the public and the government that comes into existence when the individual citizen is no longer capable of mobilising sufficient water for his/her own personal survival. This then acts as a mandate by which government ultimately takes on and executes this responsibility. This hydrosocial contract then acts as the basis for institutional development and determines the equitable distribution of water resources. Two variations of this are the Hobbesian Form of Hydrosocial Contract (a bipolar configuration between the government and water consuming public when water scarcity is encountered in a given social space) and the Lockean Form of Hydrosocial Contract (a triangular configuration between the government, the water consuming public and special interest groups such as NGOs when existing water supply schemes fall short of water demand, so that a condition of water deficit prevails and a new water awareness emerges). At the Second World Water Forum a special session on The Social Charter for Water was held. The World Water Vision, however, refers to the tripartite alliance between government, civil society and the private sector. The establishment of "water user parliaments" in order to include all stakeholders in decision making on water is another element of the World Water Vision (Turton & Meissner 2001:1-24).

A good example of increased private sector involvement (as an indication of the Lockean Hydrosocial Contract) in global and national water issues, is the Netherlands Water Partnership (NWP). It is a body set up by the Dutch public (government departments and agencies) and private (water supply companies, consultancy firms, contractors, the banking sector and manufacturing industry) sector to

act as a national co-ordination and information point in relation to Dutch water activities and interest internationally (The Netherlands Water Partnership 2001).

The Spread of Global Social Movements

The explosion of the activities of global social movements addressing water issues since the establishment of the environmental organisation, the World Wildlife Fund (WWF), in 1961 reflects the broader trend of globalisation allowing individuals spread over social spaces/territories to develop shared agendas at the global level. These movements have greatly benefited from the redefinition of national security to include non-military issues (such as human security issues and water) and a broader decision-making base. The ability of these global movements to harness support on issues across borders gave them a tremendously powerful influence on global issues. Their ability to collect, marshal and disseminate information efficiently in various locations across the globe contributes to their influence in decision making on global matters. These movements exert influence by shaping public attitudes, interests and identities; altering the agenda of local, national and global politics; providing citizens with a channel of access to global and regional decision-making forums; exercising moral and technical authority; and seeking to make governments and MNCs accountable for their decisions and actions (McGrew 2000:127-167).

In recognition of their global influence, some of these movements are formally accredited by a number of international organisations. Through the UN Charter's Article 71, a consultative relationship was established between some of these movements and the UN. Most UN agencies have established mechanisms to accommodate these movements, giving rise to the emergence of a global civil society on water issues (Vincent 1999:121-132).

World Wildlife Fund, Greenpeace International, Earthwatch, Econet, Environmental Defense Fund, Natural Resources Defense Council, Rainforest Action Network, Resources for the Future, Sierra Club, World Conservation Monitoring Centre, World Resources Institute, Worldwatch Institute, International Rivers Network, Friends of the Earth, Earth Patrol, One Earth, PlanetKeepers, International Forum on Globalization, Green Cross International, WaterAid, International Network on Water and Waste Management, International Office for Water are only a small number of international organisations and social movements addressing water issues across the globe.

A number of significant studies and programmes on water issues have also been undertaken by NGOs and the scientific community. Some of these initiatives have been promoted and executed by, inter alia, the International Association of Hydrological Sciences, the Collaborative Council for Water Supply and the International Water Resources Association.

Social movements addressing water issues have established various networks. An example of this is the South Asia Network on Dams, Rivers and People (SANDRP) based in India. It was established in 1998 with a view to interact with the World Commission of Dams (WCD). SANDRP regularly publishes updates on the Internet on water issues such as dams, flooding, rivers, safe drinking water and hydropower in this region (South Asia Network on Dams, Rivers and People (SANDRP) 1999).

The involvement of local and international interest groups in the Lesotho Highlands Water Project

(LHWP) is an example of the global nature and impact of a water issue. In this case, the Lesotho Highlands Church and Solidarity Action Group (HCSAG), Earthlife Africa, the International Rivers Network and the Environmental Defense Fund joined forces against the South African and Lesotho governments, the World Bank and other agencies involved in the LHWP to protest against the building of the Katse and Mohale dams. In the case of the Kunene River, non-state actors became involved in the politics of the proposed Epupa Dam. The most notable international organisations involved in this case were the International Rivers Network, Environmental Defence, the Norwegian Association for International Water and Forest Studies, Survival International from the UK, Earthlife Africa, the Environmental Monitoring Group from South Africa, and the Southern African Rivers Association (SARA) (Meissner 2001, Meissner 2000).

The Streams of Knowledge coalition was launched at the Second World Water Forum in The Hague in March 2000. It is a global coalition for capacity building in the water and sanitation sector7.

Global water issues involve a range of local, national and international processes and actors. Since the 1970s the number of global social movements addressing water issues increased dramatically. Initially, water availability was the main issue. Subsequently, water quality, access, human rights, global warming, sustainable water use, women and water, and the building of dams became more important.

Green Cross International (GCI) was founded by former Soviet leader, Mikhail Gorbachev, to address the environmental legacy of the Cold War. GCI is one international organisation that works to prevent conflicts in water stressed regions. It contributes to conflict prevention and resolution of actual and potential conflicts by convening representatives of all the relevant communities in a particular water-stressed region. GCI is currently involved in the Water Emergency Plan for the Middle East, the Fight Against Desertification in Burkina Faso and Côte d'Ivoire, a drinking water project in Swaziland, mediation between communities effected by large dams in Argentina and Paraguay, the World Water Council, the Global Water Partnership, and the Gender and Water Alliance (Curtin 2001).

GCI is also raising global awareness of water issues by involving other world leaders. In October 2000, for example, Civilization (the magazine of the US Library of Congress) was launched, focusing on water as the globe's most precious resource. Contributors to this edition of Civilization included Mikhail Gorbachev, Kofi Annan (UN secretary general), Madeleine Albright (US secretary of state at the time), Hanan Sher (The Jerusalem Post), Kader Asmal (Chairperson of the World Commission of Dams), Anil Agarwal (New Delhi Centre for Science and Environment), Fidel Ramos (former president of the Philippines), Ismail Serageldin (Chairperson of the World Commission on Water for the 21st Century) and Douglas MacDonald (Massachusetts Water Resources Authority) (Green Cross International 2000).

The International Forum on Globalization (IFG), established in 1994, is an alliance of 60 activists, academics, economists and researchers formed to stimulate new thinking, joint activity and public education in response to economic globalisation. It represents 60 organisations in 25 countries. The IFG's objectives are to expose the effects of globalisation and to reverse the globalisation process by encouraging ideas to ensure long-term ecological stability. Its Committee on the Globalization of Water in June 1999 released a report, Blue Gold: The global water crisis and the commodification of the world's water supply. The report critically addresses such questions as the ownership and privatisation of water as well as the role of multinational corporations as owners of water systems (Barlow 1999).

The International Water Management Institute (IMWI), based in India, is another notable organisation in the globalisation of water issues. It is a scientific organisation focusing on the use of water in agriculture and on the water needs of developing countries. Working in multi-disciplinary teams, IMWI is involved in water research and development projects in India, Pakistan, Sri Lanka, Mexico, the Philippines, Iran and parts of Africa8.

The world's leading development agencies concerned with providing water and sanitation services to the poor established the Water and Sanitation Program (WSP) under the administration of the World Bank. With its head office in Washington, the WSP has regional offices in South Asia, East Asia and the Pacific, Africa and the Andean region, and operates in more than 30 countries assisting local community partners to improve water and sanitation service delivery.

The Development and Expansion of International Law

The development and expansion of international water law is one of the manifestations of the globalisation of water issues. Four main doctrines have been developed, i.e. the doctrine of absolute territorial sovereignty, the doctrine of absolute territorial integrity, the doctrine of limited territorial sovereignty and the so-called Helsinki Rules (the doctrine of community of interest).

The International Law Commission and the International Water Law Project are only two of the number of international organisations involved in addressing legal issues surrounding international water resources.

Global Water Values

One of the notable outcomes of the World Conference on Water and Environment: Development Issues for the 21st Century (Dublin, 1992) was the emergence of a set of principles, The Dublin Water Principles, for water planning and management. These principles are gaining world-wide acceptance and have been, for example, applied in the new water policy in South Africa.

The formulation of globally shared values pertaining to water is another emergent pattern of the globalisation of water issues. An example of this are the values enshrined in the World Water Vision launched at the World Water Forum in March 2000. At the Second World Water Forum in The Hague in March 2000, the notion of a Social Charter for Water was mooted. The Charter was launched at international level with inputs from more than 50 countries. The Charter is indicative of the convergence of global values on water and follows on recent declarations focusing on water such as the Earth Charter (Sweden), the Health Charter (England), the Declaration of Madeira by the Organisation for Economic Co-operation and Development (OECD), the Report on Water Ethics by UNESCO, the Cape Town Declaration, the Delhi Declaration and the World Water Group by the Lisbon Group. The purpose of the Social Charter for Water is to promote a water policy for the 21st century that is designed by policy-makers and their experts, in partnerships with the citizens, to integrate their demands in the projects and to take into account local economic imperatives (Turton & Meissner 2001:18).

The World Water Vision discussed above states a common vision:

Water is life. Every human being, now and in the future, should have access to safe water for drinking, appropriate sanitation, and enough food and energy at reasonable cost. Providing adequate water to meet these basic needs must be done in an equitable manner that works in harmony with nature.

The Dublin Water Principles 9
Principle 1: Fresh water is a finite and vulnerable source, essential to sustain life, development and the environment.

Principle 2: Water development and management should be based on a participatory approach, involving users, planners and policy makers at all levels.

Principle 3: Women play a central part in the provision, management and safeguarding of water.

Principle 4: Water has an economic value in all its uses, and should be recognised as an economic good.

Another indication of the globalisation of water issues is the convergence of the global development and security agendas at the beginning of this millennium. The UNDP's 1994 Human Development Report focused explicitly on human security. It redefined security to also include conditions arising from poverty and inequality. However, despite the positive sides of globalisation, the process is resulting in a highly uneven distribution of gains. The UNDP reported that more than 5 million people die per annum from diarrhoeal diseases caused by water contamination (Thomas 2001:159-175).

Water as a Source of Global Conflict and Co-Operation

The end of the Cold War ushered in a new global era and a shift from military to human security. Threats to security are now defined as military, social, political, economic and environmental. The threat to water security falls into the category of non-military or human security.

Water as a source of conflict is increasingly contested in the literature on the subject. Although some research concludes that there has never been a single war fought over water, it remains a source of potential conflict as in the case of the Middle East for example. Research does indicate the link between access to clean water and political stability.

Each international treaty on water can be regarded as a resolved dispute. Water conflict often occurs after the internationalisation of a previously national waterway such as the Jordan, Indus, Nile and Aral basin. Another contributing factor is the existence of ethnic minorities along major waterways as in the Kurdish regions along the Euphrates or the Punjab between India and Pakistan. The pattern of water-related tensions is often that riparians of an international basin implement water development projects unilaterally within their own territory in an attempt to avoid the politics of the shared water resource. As water demands approach supply, one of the riparians implements a water development project that impacts on at least one of its neighbours. Egypt's plans for a dam high on the Nile, Turkey's Great

Anatolian Project (GAP) project on the Euphrates or Indian diversions of the Ganges to protect the port of Calcutta are examples of these. Any water development project impacting on a neighbouring state in the absence of institutions to resolve tensions can become a hydropolitical conflict. Wolf and Hamner (2000) identify a number of indicators of an impending water conflict:

water quantity
water quality
water management for multiple use such as irrigation and hydropower
political divisions within the basin
geopolitical setting
levels of national development in basin
the hydropolitical issue(s) in a basin
institutional control of water resources
national water ethos.

International co-operation (such as the Mekong River Commission and the SADC Protocol on Shared Water Courses) on water issues seems to be one of the driving forces of the globalisation of water issues.
Water issues are an important aspect in the Middle East peace process10. This conflict, which has been globalised on its own, is another manifestation of the globalisation of water issues. A number of international organisations and social movements are involved in addressing the water issues in this conflict. In September 1999, GCI, the International Arid Lands Consortium, the Peres Center for Peace and the Center for Middle East Peace and Economic Development hosted a workshop in Amman on creating sustainable regional solutions for water in the Jordan valley. The workshop addressed the current and impending water shortage in the region, the role of water in agriculture, desalination, political issues, the creation of a regional institution such as a "Regional Water Resources Commission", financing water initiatives and related environmental concerns. This initiative was followed up by a fact-finding mission under the leadership of Mikhail Gorbachev to Israel, the Palestinian Authority and Jordan in March 2001. This mission was in preparation of the session called Water for Peace in the Middle East at the Second World Water Forum in The Hague (Green Cross International 2001a, Green Cross International 2001b).

The Nile is one example where one single state cannot address all issues relating to it. It is also an example of the water vulnerability of a downstream state such as Egypt. Burundi, the DRC, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda have a part or all of their territories in the Nile Basin. The Nile COM is a Council of Ministers including all the Ministers of Water Affairs of the Nile countries. The Nile flows through some of the most unstable states in Africa since the Cold War. A number of initiatives were launched to establish an international discourse on development in the Nile Basin. The World Conservation Union (IUCN), the WWF, the World Bank, Nile COM, the Canadian International Donor Agency (CIDA), the UNDP, InterAfrica Group, Arab Office for Youth and Environment, International Committee of the Red Cross, Wetlands International, Uganda Wildlife Society, Sudanese Environment Conservation Society etc are involved in this ongoing process (Abrams 2001, Tafesse 2000, Swain 1997).

The Use of Internet and Technology

Since October 1998 Waterweb hosted a series of summits on water. The initial Water Information Summit was the Water on the Web Workshop held in October 1998. Subsequent Water Information Summits (October 1999 and November 2000) addressed the use of information and internet technology with regard to water-related information on the Web. The Fourth Water Information Summit will take place in Panama in October 2001 and will focus on internet-based mechanisms and partnerships to build virtual capacity for sustainable water resources managemen11.

The number of electronic/internet conferences on water issues is increasing. Some of the notable conferences in this regard are the Fourth Electronic Conference on Streams of knowledge: Knowledge sharing in the water and sanitation sector (March 15 - April 21, 2000) and the Third Electronic Conference on Small towns' water and sanitation (January 31 - March 10, 2000) (Europe's Forum on International Cooperation (Euforic) 2001:1-6).

INTERWATER is an electronic network of institutions in the water and sanitation sector acting as a gateway to other sources of water and sanitation information.

The Internet is also used by various social movements and international organisations to raise global awareness of water issues. Green Cross International's website, for example, lists 13 pages of international organisations and NGOs dealing with water issues12. The Water Page (www. thewaterpage.com) is an example of this.

Water Issues and the Challenges of Globalisation

The provision of quality water remains one of the most important challenges. Global freshwater consumption rose sixfold between 1900 and 1995 twice the rate of population growth. Population growth and development are currently driving a rapid increase in water demand. As the world's food demands rise, so will the demands on water resources. Developing countries are most likely to be hardest hit. As these states industrialise in order to improve growth and development, so will the demands on the water sector increase (World Resources Institute 2001).

The link between water and health was discussed above. A number of states in Southern Africa, for example, have been shown to have the highest HIV/AIDS prevalence rates recorded in the world. The pandemic already has had an enormous impact on the region. Apart from the social and economic effects, HIV/AIDS also poses associated challenges for water resource management in this region. Contradictory forecasts of HIV/AIDS-related mortalities on population growth rates have complicated the planning and implementation of water supply schemes. Furthermore, families who have lost their breadwinners are unable to pay for water service delivery. HIV/AIDS-infected individuals are also more prone to a number of illnesses and water-borne diseases. High HIV/AIDS prevalence rates contribute to decreased productivity and an increase in the demand for training skilled and semi-skilled replacements. The provision of safe water and sanitation services to poor communities in developing countries offers an opportunity to reduce the incidence of water-borne diseases. The speedy implementation of national and regional programmes in Southern Africa, for example, is required if the impact of the pandemic is to be contained (Ashton & Ramassar 2001, Eales et al 2001).

Conclusion

This paper attempted to address the globalisation of water issues as manifested in, inter alia, global awareness through global governance agencies such as the UN, selected multilateral organisations, NGOs and social movements involved in global water issues.

As the development and resource gap between developed and developing countries widen, an increase in the divergence between these economies is evident. The answer does not lie in the increase in the number of bigger water supply schemes, but in sharing water values on a global scale. States are increasingly dependent upon other states and non-state actors to ensure adequate quality and quantities of water. The emergence of an evolving global policy on water issues to address transborder water issues constitutes an emergent system of global governance reflecting increased political co-ordination among governments, intergovernmental organisations and transnational social movements. In this process a common purpose and goals via agreed rules, values and principles as discussed above are worked for.

The emergence of a global/transnational civil society on water issues is increasingly playing an influential role in mobilising, organising and exercising influence on a particular water issue. This has been made possible, inter alia, by the spread of global communications systems such as the Internet.

Notes

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2. See also Cutler 2001.
3. Based on Scholte 1999:15, Scholte 2000:8-9, 41, McGrew 2000:127-167, Mills 1998:5-25, and Garret 2000:941-991.
4. United Nations Commission on Sustainable Development, Comprehensive Assessment of the Freshwater Resources of the World,www.un.org/esa/sustdev/freshwat.htm , pp 1-25.
5. Permanent Okavango River Commission,www.iwwn.com/na/namibianet/okacom/main.htm .
6. Global Water Partnership,www.sida.se/gwp/gwp/backround.htm , 20 April 2000.
7. Streams of Knowledge, www.irc.nl/stream/index.htm, 25 May 2001, p 1.
8.The International Water Management Institute (IMWI), www.imwi.org .
9. United Nations Commission on Sustainable Development, Comprehensive Assessment of the Freshwater Resources of the World, www.un.org/esa/sustdev/freshwat.htm, pp 21-22.

10. See, for example, Soffer 1999.
11. Waterweb, Water Information Summits, www.waterweb.org
12. See, for example, www.gci.ch/GreenCrossPrograms/waterres/links/links.htm

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