Water Security vs. National Security

Dr Arvind Kumar*

*President of India Water Foundation, New Delhi.

[*Water security has emerged as a significant component of national security globally. While probling linkages betwee water security and national security, this article appraises current national and international scenario in this context*.]

There has been growing public and policy preoccupation in recent years with potential climate impacts on water security in the wake of the worsening risk of global warming. In 1991, then–UN secretary general Boutros Boutros-Ghali pronounced that "the next war will be fought over water, not politics." In 2001, Kofi Annan warned that "fierce competition for fresh water may well become a source of conflict and wars in the future." And present UN secretary general Ban Ki-Moon has argued that the ongoing Darfur crisis grew at least in part from desertification, ecological degradation, and a scarcity of resources, foremost among them water. Apart from this chorus of concern, many policy scholars have asserted that, as population growth and economic development raise pressures on demand and environmental pressures degrade supplies, resource scarcities could precipitate violent international conflicts, with shared rivers an especially dangerous flashpoint.

The mounting trepidation that water and other resource conflicts, exacerbated by global warming, could undermine the international order has now become part of the public policy. The European Union explicitly invokes the danger that climate stresses could menace global security as a basis for European Community climate policies.

While evaluating the risk of prospective water wars against the historical evidence, a group of scholars rummaged through data sets covering 124 countries and 122 of the world's 265 international river basins, and identified 1,831 interstate events between 1946 and 1999 that concerned water. It was observed that cooperation far outweighed confrontation, representing 67 percent of events. Of 507 incidents judged conflictual, 414 amounted to only rhetorical exchanges. In all, they found 37 instances of military or violent confrontation. In no case did disputes over water lead to formal declarations of war. On the contrary, riparians in transboundary basins signed fully 157 international freshwater treaties over the same period.

Undoubtedly, the study by Wolf et al. is widely cited to deflate anxious claims that strains on water supplies will ignite future water wars and to highlight the predominantly collaborative character of interstate hydropolitics, yet, there are several reasons to fear that previous levels of international cooperation will not necessarily continue to prevail.

Broadly speaking, examples of cooperation considerably outnumber cases of conflict, but this accounting may not accurately reflect the dynamic degree of tension over water resources that riparians experience. That no state formally declared war on another over water carries almost no probative value. According to broad estimates, water issues contributed to "only" 37 violent incidents —including 21 examples of "Extensive war acts causing deaths, dislocation, or high strategic cost"—to be less than reassuring. If this

is already so, one may well wonder, what will happen if climate change aggravates existing strains on shared water supplies?

Here, some other expeditions into the hydropolitical archives offer more troubling evidence. While examining every transboundary river in every one of the world's international river basins from 1880 to 2001, Gleditsch et al. determined that, even after accounting for other factors that trigger interstate conflict, countries that share a river face a higher probability of engaging in fatal military disputes. Though not conclusive, their results also suggested that competition stemming from water scarcity may help explain this propensity. Similarly, Hensel and Brochmann in their examination of the management of every shared river in different parts of the globe from 1900 to 2001, have indicated that growing water demands and greater scarcity both make explicit disagreements over rivers more likely and heighten the risk that these claims will become militarized.

There are ample indications to show that global warming is already exerting on the social stresses. During the last three decades, weather-related hydrometeorological disasters of all kinds—floods, droughts, windstorms, hurricanes, etc.—have quadrupled, surging from 428 in 1974–78, to 817 in 1984–88, to 1,707 in 1999–2003.

Broadly speaking, the concept of national security is not construed in just military terms, but it also encompasses energy security and water security. The threats arising from the climate change are, to a large extent, construed in this context. Water security is a key factor for sustainable development and alleviation of poverty.

Ironically, adequate attention is not being focused on ensuring the security of water throughout the globe whereas other issues of lesser importance are being accorded top priority in terms of national and international security. In the post-Cold war period, linkages between oil, war, and U.S. foreign policy are getting intimately intertwined. However, under the changing international security scenario which bears close semblance to national security scene, water is likely to emerge as a potent factor determining whether our future is peaceful or perilous.

Fast depletion of freshwater supplies around the world, inequitable access to water, and corporate control of water, coupled with the factor of impending climate change from fossil fuel emissions, along with other related factors have created a precarious situation across the planet. Undoubtedly, developed economies like United States accord emphasis on diminution in dependence on nonrenewable energy resources but the threats posed by water shortages generally remain out of focus. However, this is not to deny the attention being paid to the emerging threats emanating from water scarcity. In fact, water has become a key strategic security and foreign policy priority for the United States.

The process of privatizing, commodifying, and exporting water has been going on for decades in many developed countries. In Canada, for example, in the late 1990s, Sun Belt Water, Inc., sued the Canadian government under NAFTA because British Columbia banned water exports, preventing a deal that would have sent B.C. water to California.

Some corporations in Canada in the recent past have also tried to ship Canadian water as far as Asia and the Middle East, proposals that fizzled after fierce opposition from the public which soon uncovered the dangers of permanently removing water from local ecosystems and placing it under corporate control.

Presently, a new thinking is taking place in the United States, particularly in the Pentagon, as well as in various U.S. security think tanks, that water supplies, like energy

supplies, must be secured if the United States is to maintain its current economic and military power in the world. And the United States is exerting pressure to access Canadian water, despite Canada's own shortages.

According to a backgrounder prepared by Washington-based think tank, Center for Strategic and International Studies (CSIS): "As ... globalization continues and the balance of power potentially shifts, and risks to global security evolve, it is only prudent for Canadian, Mexican, and U.S. policymakers to contemplate a North American security architecture that could effectively deal with security threats that can be foreseen in 2025." On the agenda for one of two meetings in Calgary were, "water consumption, water transfers, and artificial diversions of bulk water" with the aim of achieving "joint optimum utilization of the available water."

As the focus on water is gaining attention, the linkages between water and security are getting deepened. A 2005 report from CSIS's Global Water Futures project had this to say about water: "Water issues are critical to U.S. national security and integral to upholding American values of humanitarianism and democratic development. Moreover, engagement with international water issues guarantees business opportunity for the U.S. private sector, which is well positioned to contribute to development and reap economic reward."

Evidently, there is a growing lobby in the United States which regards water as not a public good but a private resource that must be secured by whatever means. But there are alternatives. However, the people in North America must learn to live within their means, by conserving water in agriculture and in the home. There is a lot to learn from the New Mexican "Acequia" system that uses an ancient natural ditch irrigation tradition to distribute water in arid lands to the International Rainwater Harvesting Alliance in Geneva that works globally to promote sustainable rainwater harvesting programs.

Conservation strategies would undermine the massive investment now going into corporate technological and infrastructure solutions, such as desalination, wastewater reuse, and water transfer projects. And conservation would be many times cheaper, a boon to the public but not to the corporate interests that are currently driving international water agreements.

At the grassroots, a global water justice movement is demanding a change in international law to settle once and for all the question of who controls water, and whether responses to the water crisis will ensure water for the public or profits for corporations.

Ricardo Petrella has led a movement in Italy to recognize access to water as a basic human right, which has support among politicians at every level. The Coalition in Defense of Public Water in Ecuador is demanding that the government amend the constitution to recognize the right to water. The Coalition Against Water Privatization in South Africa is challenging the practice of water metering before the Johannesburg High Court on the basis that it violates the human rights of Soweto's citizens. Dozens of groups in Mexico have joined COMDA, the Coalition of Mexican Organizations for the Right to Water, a national campaign for a constitutional guarantee of water for the public.

The U.S. and Canada are the only two countries actively blocking international attempts to recognize water as a human right. But movements in both countries are working to change that. A large network of human rights, faith-based, labor, and environmental groups in Canada has formed Canadian Friends of the Right to Water to

get the Canadian government to support a U.N. right-to-water covenant. And a network in the United States led by Food and Water Watch is calling for a national water trust to ensure safekeeping of the nation's water assets and a change of government policy on the right to water.

It is worth mentioning here that a National Workshop on "Science and Technology for Sustainable Water Security" held in the M.S. Swaminathan Research Foundation in October, 2003; in one of its main recommendations suggested that we should have a Sustainable Water Security System, which would pay concurrent attention to the following aspects:

- Augmenting supplies through rainwater harvesting, aquifer enrichment and management, treatment and recycling of all industrial and domestic waste water, sea water farming and where economically, ecologically and politically feasible, inter-basin transfer of water.
- Managing demand in a manner that there is maximum economy and efficiency in the use of every drop of water in every sector of water use.
- Monitoring and improving the quality of water in rivers, lakes, wells and aquifers.
- Harnessing new technologies particularly in the areas of linking energy security with water security, bioremediation, and breeding drought-and salinity tolerant crop varieties based on the integrated application of Mendelian and molecular methods of breeding. Recent research indicates that it is technically and economically feasible to generate large volumes of water of suitable purity through the desalination of seawater, brackish water and water reuse. The sea is an unlimited source of water.
- Revitalization of traditional water harvesting and sharing procedures and improving mini-hydel plants in the Himalayas through integration with new technologies.
- Knowledge Management and dissemination relating to the conservation and sustainable and equitable use of water in the different agro-ecological regions of the country.

It was also felt there that there was a need for what can be called 'Water Literacy'. Over 80% of water goes to agriculture, where the water use efficiency is poor. There is no mandatory requirement for industry to re-use water, after treatment. The Ganga Action Plan, part of the National River Action Plan is finding it difficult to improve water quality and safety, due to extensive non-point pollution. Therefore, it will be prudent to launch a water literacy movement conveying location and time specific information on all aspects of water quality and effective use. It was also felt that all State Governments could emulate the Tamil Nadu example of mandatory rainwater harvesting and watershed and wasteland development. Above all, the highest priority should go to improving water use efficiency and quality.

India has 7000-8000 kilometers long coastline. The majority of the coastal area is water scarce. If average number of persons in a family is taken as 5, the total population in a habitation is one hundred (100) or more. Thus, the required desalination plant (RO or thermal) capacity may range from 5,000 50,000 litres/day (LPD) for a habitation. Stationary and mobile seawater desalination plants (5,000-50,000 LPD capacity) catering

to the requirement of these habitations would provide assured supply of safe drinking water. In places like Lakshadweep (which has several small islands), land area is scarce and ground water resources are very limited due to geo-hydrological constraints. In such islands, an alternate source of fresh water, other than small quantities of ground water and rainwater harvesting, is seawater desalination. Bargemounted desalination plant is the solution, in such cases, since it can move from one place to another.

More than 2,00,000 square kilometer land has inland salinity (brackish water) in states like Rajasthan, Gujarat, Tamil Nadu, Andhra Pradesh etc. Many of these areas have chemical contamination (fluoride, arsenic, iron, nitrate etc.) problem along with brackishness. The deployment of brackish water RO plant (5,000-50,000 LPD capacity) in the habitations affected by excess salinity and chemical contamination problems would provide safe drinking water. The plants need to be flexible enough to accommodate seasonal variation in salinity and other contamination. Sufficient raw water yield and power supply are required to be ensured while fixing the plant capacity. User participation must be ensured for implementing any scheme. Each block should have necessary water testing facility. The desalination plant installed in a particular habitation can be operated and maintained by the Gram Panchayat/ Panisamiti/ Self Help Group/Voluntary Organisation. A viable mechanism should be evolved to sustain the required operational expenditure. The necessary civil works required for the desalination plant including storage tanks for raw water and product water (safe drinking water) may be provided by the local user group. Ultra-Filtration (UF) technology can take care of biological contamination (bacteria), turbidity, color and organics.

The lessons learnt from the Rajiv Gandhi National Drinking Water Mission, which are highlighted in Harcharan Singh Committee Report 1995, should be taken into consideration while implementing the scheme:

- Understanding the technologies, their limitations and implications
- Technology shall not be imposed on the community
- Community's participation in the discussions
- Accountability

Apart from the above, the following suggestions are equally useful:

- Setting up of dual-purpose plants for power and desalinated water production along the coastal areas.
- Retrofitting of desalination units using the waste heat, wherever possible, through incentives/subsidies for the industries.
- Using appropriate technologies to recover water from spent streams and effluents for reuse.
- Large scale membrane production facility (say, 500 square meter/ day) through private/ public sector participation.
- Further improvement in the Thin Film Composite (TFC) membrane to achieve salt rejection efficiency of >99% and perfection of associated membranes relevant to water.

These facts call for sincere and dedicated commitment to implement these suggestions so that security of water can be ensured. The problem of water scarcity is a well-known issue that calls for rational approach to solve it by added emphasis on conservation, judicious use of available water resources, harnessing rainwater, harnessing latest and

sophisticated technology for waste-water treatment and other water-related issues. If the security of water is ensured thereby national security is strengthened automatically.

Recent months have witnessed added emphasis on water diplomacy between India and Pakistan. At one point, Pakistan has even accused India of 'water terrorism' and at the same time Pakistan's Minister of Water Resources stated that water was not stolen by India; rather was wasted within Pakistan itself.

India has water-related problems with Bangladesh, Nepal, China and Pakistan. It is high time for India to develop a water diplomacy strategy. It also seems appropriate occasion to establish a regional water hub to deal with water-related issues between and among the South Asian countries. This will certainly go a long way in ensuring water security which in turn will contribute to national security as well.