Water Security or Security of Water? A Conceptual Analysis

Sangeeta Thapliyal
sangeetathapliyal@gmail.com

Abstract

The present article tries to understand the concept of water security. What is the threshold beyond which water qualifies to be a security issue? Do our security concerns emanate from the conflictual interests emanating from demand and supply, riparian rights of the intra- or inter-state actors or the ownership of the resource? Does the resource study get special attention from the people, national or international actors, when water falls within the security zone? Do efforts to meet the requirements of people and state end up in securitising water as a resource.

Keywords

Water security, security of water, water in South Asia, concept of water security

Water, studied by hydrologists, came out of the domain of natural sciences and became a source of enquiry by the social scientists. The non-renewable resources such as coal, oil and gas were studied within the realm of demand and supply, distribution pattern, availability and so on, whereas the renewable resources such as water, wind, solar were not critical of depletion. The search for new resources of energy brought in attention towards non-renewables.

Also the essentiality of water for life could not be negated. If oil gets depleted some other source of fuel would be looked at but without water life would be depleted. Scholarly attention on this resource needed not just conceptual brain game but sympathetic enquiry towards needs of the people from political, cultural, religious and scientific approach. It is said that more than 70 per cent of the world is covered with sea and ocean water. Of this fresh water accounts only 3 per cent out of which two-thirds is in the form of icecaps and glaciers and 1 per cent is found as ground water. Resultantly less than 1 per cent of fresh water is available in rivers and lakes for human consumption (Ohlsson 1995: 5). Hence, with growing population and its consumption pattern, agriculture and industrialisation, the demand on water increased. Unmet demands led to tensions. One of the means adopted to meet water demand is irrigation. However, shortage of new land, water logging, salinisation, social and environmental costs have proved irrigation less lucrative option. Industrial water, if not treated properly, brings with it harmful chemicals. Many have come up with the idea to meet additional water requirement through icebergs. During the Falklands War and the Gulf War, iceberg was used by the military. Private firms offer similar kind of services on a much larger scale by providing water through iceberg. Sea water is also being used

after desalinating. Presently desalinisation is taking place in nearly 7,500 plants throughout the world. However, with production cost amounting to one-tenth of the total water use, it is used only in water-scarce oil-rich gulf countries. Some of the users include Saudi Arabia and arid regions of Australia and Spain (Ohlsson 1995: 16–17). Seeing the inability of the governments to treat water in the natural hydrological cycle and getting embroiled in engineering processes to meet the demands Malin Falkenmark called it 'water blindness' (Falkenmark 2001).

Water as a resource got attention of the conflict studies as it was shared between people, within a state and between states. The impact of water scarcity, conflict or depletion brought tensions at times leading to conflicts. The security studies in its attempt to broaden its agenda brought in environment, including water, under its domain. The concerns of environmental studies were mainly the conflicts or tensions emerging within or between countries on water scarcity or sharing, depletion of forests, ozone depletion, global warming. Hence, the studies tried to understand it as a conflict management programme. Since water conflict or scarcity or pollution was not the issue concerning the developed world, the academic community looked at it with caution. For them it was a source of socio-political, economic tension of the developing world; hence, the issue remained within the realm of conflict management. The approach on water security was confined to empirical work testing whether or not it led to wars or conflicts. Not much academic thrust has been on defining it conceptually or raising basic questions on water control and sharing.

If security is a study of threats, external or internal, to a state, what is a threshold beyond which water resource enters the security zone? If security elevates an issue to the prime importance of special politics, what is the threshold beyond which water resource enters security arena? Does water or resource study get special attention by the people, national or international actors under the rubric of security? Are the requirements of people and state met efficiently by securitising water? To understand water security it is imperative to understand the concept of security.

What is Security?

The concept of security has been analysed variously by analysts calling it from being ambiguous to all pervasive for a state. Rowland Maddock (1996) called security threat as anything that is perceived threat by a society. The realists in international relations discipline understood security as employment of military means to achieve security from the armed attacks of other states. Walter Lippman gave a definition to the term by referring to it as 'a nation is secure to the extent to which it is not in danger of having to sacrifice core values, if it wishes to avoid war, and is able, if challenged, to maintain them by victory in such a war' (Lippman 1943: 51). Security, according to Arnold Wolfers is a value 'of which a nation can have more or less and which can aspire to have in greater or lesser measure' (Wolfers 1952: 484). Stephen Walt argued that security studies deal with 'the study of the threat, use, and control of military force' (Walt 1991: 227). In an effort to redefine security, Barry Buzan, Ole Weaver and Jaap de Wilde put forward that 'Security is the move that takes politics beyond the established rules of the game and frames the issues either as a special kind of politics or as above politics. Securitization can thus be seen as a more extreme version of politicization' (Buzan et al. 1998: 3).

The discipline got sidetracked and it was strategic studies that got more prominence in the backdrop of Cold War. Security of a state was seen in a Clausewitizian model of relationship between military means and political ends. Consequently, the external threats to a state received scholarly attention and national interests were the driving force. The discipline progressed in arms race, predicting war and revolving around deterrence, arms control and disarmament. But all these did not challenge the concept of security and moved within the concentric circles of state-centric threat, military in substance and external in nature. The discourse on state security achieved through military means within the philosophy of realism remained predominant. The nuclear deterrence was deemed central to securing state security. State was considered by the strategic studies as the ultimate political reality.

The weakness of the strategic discipline was felt when it failed to predict the course and outcome of the Vietnam War or the end of Cold War. It was engrossed in counting nuclear brownies and did not give much needed attention to the internal dynamics affecting states. The regime and its ideology, within the context of Cold War, had become the focus of attention and for whom the state existed were neglected. Even the Third World studies or the regional studies that came up with the weakening of the bipolar world in the 1970s viewed the Third World from the prism of the developed world (Buzan et al. 1998: 3). The people were not only affected by the military or bipolar world but by host of other issues that were internal in nature. The small states had their own security problematique as was defined by size, geography, location and economy. David Vital (1967), Robert Rothstein (1968), V.V. Sveics (1970), Sheila Harden (1985) and others dealt in great detail about the concept of security of the small vulnerable states. Within the framework of realism, the studies placed the threats to small states and their strategies in meeting them.

Richard H. Ullman's essay on 'redefining security' argues for inclusion of non-military issues in the concept of security. He defined security that 'threatens drastically and over a relatively brief period of time to degrade the quality of life for the inhabitants of a state or threatens significantly to narrow the range of policy choices available to the government of a state or to private, non-governmental entities (persons, groups, corporations) within state' (Ullman 1983: 133). A boost to security studies was given by the emergence of Copenhagen school consisting of Barry Buzan, Ole Waever and others who tried to broaden the concept of security from the confines of military threats to political, societal, economic and environmental. Buzan in his book *People, State and Fear* (1983: 19–20) defined political domain as the 'organisational stability of states, systems of government and the ideologies that give them legitimacy'. Economic security was 'access to the resources, finance and markets necessary to sustain acceptable conditions for evolution, of traditional patterns of language, culture and religious and national identity and custom'. Societal security was defined as 'the sustainability, within acceptable conditions for evolution, of traditional patterns of language, culture and religious and national identity and custom'. Environmental security was 'maintenance of the local and the planetary biosphere as the essential support system on which all other human enterprises depend'. Others joining in the endeavour to broaden the security studies were Giacomo Luciani (1989) and Patrick M. Morgan (1990–91), defining the economic security, Neville Brown (1989) and Norman Myers (1989), arguing for environmental security and Ann J. Tickner (1992) and Jean B. Elshtain (1997), calling for feminist perspective of the security agenda.

The traditionalists criticised the widening of security agenda, that it lacked intellectual coherence and had probability of elevating security as the given goal towards which all the relations should move. Patrick Morgan argued that with such widening the concept of security could lose focus. He said:

On security I remain a traditionalist. Security has long been about the survival and physical safety of the actors and their people; by extension it concerns the deliberate use of force by states for various purposes. Broadening security studies to cover other 'harms'—economic, environmental and so forth—is unfortunate for it lumps together deliberate, organised physical harm (or threats thereof) with other threats and pains. (Morgan 2000: 40–41)

Daniel Deudney (1990: 461) apprehended that the security concept would lose its meaning if all other forces and actors threatening life and well-being of people were included as threats.

The widening of approaches added more agendas for security but within the same conceptual understanding. It accepted the state as the guarantor, provider and primary referent of security. The state had to deal with the sub-state, state and international security problems as it had the primary responsibility to look at the welfare and well-being of its people, and the international politics recognised state as the primary actor for negotiations on behalf of its people (Smith 2000: 83).

In response to the criticism on widening of the security agenda Buzan, Ole and Wilde in their work on 'Security: A New Framework for Analysis' said that 'threat and vulnerabilities can arise in many different areas but to count security issues they have to meet strictly defined criteria that distinguish them from the normal run of the merely political. They have to be staged as existential threats to a referent object by securitizing actor who thereby generates endorsement of emergency measures beyond rules that would otherwise bind.' Hence, existential threat per se was not enough. When it had acceptance of the people, did it reach the security stage? (Buzan et al.: 5, 25). The existential threats had to be accompanied by call for emergency responses. Hence, such threats need not be confined to military threats but could emanate from societal, economic, environmental sectors. An issue qualified for securitisation when it became an existential threat to the state and people and also had acceptance of not only the policy makers but the wider audience. Ramesh Thakur and Edward Newman (2004: 3) justify those issues and situations as security when they reach a crisis point beyond which the survival chances of the citizens obliterate affecting the stability and integrity of the society. However, testing such broadened agenda for security in the context of the Third World, Mohammad Ayoob (1995) argues that economic deprivation or environmental degradation qualify for security status when they are able to produce political outcomes threatening the survival or effectiveness of the states and regimes.

It was the critical theorists like Sean M. Lynn-Jones (1995), Ken Booth (1991, 2005), Richard Wyn-Jones (1995: 999) and others that questioned the ontology of security concept. It asked questions related to whose security, for whom, by whom? It questioned the state-centric approach to security and considered an individual as the referent of security. Instead of considering security as a negation of threats, it accepted the emancipatory notions as the goal of security policies. The critical studies questioned the security studies conceptually. The state was the provider of security of the people. What people felt and said for their security became important. For instance, water sharing, distribution, allocation, quality was within the realm of the state but it had to be not only people-friendly but also take them along. State could not decide on behalf of the people and was expected to accept a participatory approach. The civil society had a greater role. Booth (2005: 15–16) defined critical security studies as 'an issue-area study, developed within the academic discipline of international politics, concerned with the pursuit of critical knowledge about security in world politics'. In this context security was

[...] conceived comprehensively, embracing theories and practices at multiple levels of society, from the individual to the whole human species. Critical implies a perspective that seeks to stand outside prevailing structures, processes, ideologies, and orthodoxies while recognizing that all conceptualization of security derives from particular/theoretical positions; critical perspectives do not make a claim to objective truth but rather seek to provide deeper understandings of prevailing attitudes and behaviour with a view to developing more promising ideas by which to overcome structural and contingent human wrongs.

Contrary to the state-centric notions of security, the concept of human security makes an individual as a referent of security. The security of the state is not ignored but it is co-equal if not more than the individual's security. The key argument according to Kanti Bajpai is that states' responsibility is to provide security to its citizens; hence, state's security cannot be an end in itself (Bajpai 2002: 4). United Nations University defines the concept as

Human security is concerned with protection of people from critical and life threatening dangers, regardless of whether the threats are rooted in anthropogenic activities or national events, whether they lie within or outside states, and whether they are direct or structured. It is human central in that its principal focus is on people both as individuals and as communal groups. It is security oriented in that the focus is on freedom from fear, danger and threat. (Thakur and Newman 2004: 4)

The concept is also defined by the international organisations. The European Parliamentarians Conference on Building Human Security held in Bonn in 1991 defined it as 'the absence of threat to human life, life styles and culture through the fulfillment of basic needs'. In 1992, the declaration of the United Nations Secretariat recognised economic, social, humanitarian and ecological sources of instability as threats to peace and stability. In 1994, the concept was included in the United Nations Development Programme (UNDP) report as 'Human security is the freedom from worries about daily life. It includes physical safety from disease, hunger and protection of daily life patterns.' Many countries such as Canada, Norway, Finland and Japan have included the human security concept in their national policies. Hence, the individuals' well-being is the referent around which the policies and concerns of security revolve.

Commenting on the development of security studies, David Baldwin stated that

[T]o the extent that the new thinking about security focuses on conceptual issues rather than empirical or normative issues, not much is new.... Most of the 'new ideas' about security can be accommodated by the conceptual framework elucidated by Wolfers in 1952 ... It may well be that the world needs a theoretical breakthrough that provides a better understanding of the post-cold war world, a normative breakthrough that expands the notion of a moral community, an empirical breakthrough that facilitates recognition of increased interdependence, a political breakthrough that strengthens the will to pursue an expanded security agenda. (Baldwin 1997: 23)

The concept of security has been both widened and deepened. The biggest change is that the debates on security do not revolve around the world as it exists but over contestations on the concept of security, what and why constitutes as security, and what are the focal points of disputes between various interest groups.

Water entered the domain of security studies when it reached a threshold that was seen as impacting on the lives of the people, political security of the country or beckoning conflicts between the countries

at the altar of peace and stability, thereby affecting social, economic, political and environmental security of a country. It entered the security discourse with the inclusion of environmental security. Myers (1993) called environmental security as the 'ultimate security' whereas Deudney (1990) called it as a pollution of security proper. The discourse on environmental security along with the economic security helped in widening the security discourse from mere military studies. The environment was studied within the realm of scientific and political agenda. It is the latter that deals with governments' policies and public concerns on environment. The scientific agenda studied by technocrats, research institutions, identifies environmental problems that underpins securitising moves, whereas the political agenda is about state and public awareness on the scientific agenda, acceptance of political responsibility for dealing with environmental issues and managing these issues ranging from international cooperation to institution-alisation such as national and international initiatives, political realities of free-rider dilemmas, enforce-ment and so forth (Buzan et al. 1998: 72).

The environmental security operates at three levels:

> 1) Threats to human civilization from the natural environment that are not caused by human activity...2) Threats from human activity to the natural systems or structures of the planet when the changes made do seem to pose existential threats to civilization... 3) Threats from human activity to the natural systems or structures of the planet when the changes made do not seem to pose existential threats to civilization. (ibid.: 80)

The threat factor is important in determining whether or not it qualifies for security. Environment is studied at various levels: global, regional and local, and at every level it qualifies for threat when it creates existential threat or threat to peace and stability of a state. Accordingly, the actors take upon responsibility to deliver security. At a global arena it is dealt at a systemic level, whereas at the local level it is the responsibility of the state and the people.

However, the concept of environmental security did not challenge the traditional concept of state-centric security but was added on along with other variables of security. State remained the prime provider of security but along with it the non-governmental agencies and epistemic communities, technocrats, scientists, academics and individuals were included to meet the environmental security of the society (Sheehan 2005: 105).

Countering the state-centric concept of security, Jessica Tuchman Mathews (1989: 162) argued that the environmental security affected the regional and global concerns and its management did not fall within the sovereign responsibility of one state. It has broken the sacred boundaries of national sov-ereignty. Marc Levy (1995: 38) proposes that the concept of environmental security should be reserved for only those situations that provide ecological feedback or those affecting human life. Deudney (1990: 368–69) argues against linking environmental degradation and national security as they are fundamen-tally different from threats to military security. Environmental study or environmentalism questions the state-centric militaristic notion of security and to securitise it would be self-defeating.

Locating Water in the Security Discourse

The studies on water security entered the security domain with the inclusion of non-military threats af-fecting human collectivities such as societal, economic, political and environmental concerns. Water was

seen as a resource creating strains when shared between two states or within a state. The focus was on riparian rights and exploring solutions in resolving conflicts such as upstream usage of water could and does create tensions for the downstream country.

Water resource, if handled properly, provides basis for economic growth, improved living standards and socio-political stability. The existing water-related conflicts between and within countries suggest poor management of the resource. Due to increasing requirements of water resource long-term assessment is difficult but demands of it will continue to increase and exert pressure on usable water supplies. Thus, water will continue to be synonymous with problem. Water management is another issue that has become essential to understand water demand and supply. With increasing demand from individual consumption to industrial and agricultural needs, continuous water supply is essential. In the years to come it would be a pressure on the governments to provide more water to meet the burgeoning requirements.

Jan Selby (2003: 21–32) has identified three discourses on water crisis. Ecological discourse takes into consideration population increase—resource constrains equation, that is, constrain of limited water resource due to ever-increasing population. Technical discourse deal with technological, economic and policy management and inefficiency related to water resource. The political discourse analyses water crisis as a result of resource control, inequalities amongst countries on water sharing and distribution, nationalist or international discourse.

Most of the studies on water were empirical using case study approach to prove the potency of water in creating conflict. For example, Selby (2003) and Mostafa Dolatyar and Tim Gray (2000) concentrated on Middle East as a flash point for water conflict. Debates were largely on the threats to states from either crisis of distribution or evolving from trans-boundary rivers or from conflicts leading to military wars. Literature on Israel–Palestine conflict has been viewed by water analysts as a resultant of water conflict. Israel got the control of water resources after occupying West Bank, Gaza Strip and the Golan Heights in 1967 and the Southern Lebanon in 1982. Ralph H. Salmi (1997) brings in co-relations between the political and water crisis and proposes that unless the political conflict is resolved water crisis would continue to exist. Hussein A. Amery (1997) argues that Israel's rationale to occupy the West Bank and Golan Heights was to occupy water resources. Hence, in order to resolve the territorial issue the water issue should also be addressed. Serdar Guner (1997) brings forth Syrian–Turkish relationship by putting forth his argument that riparian rights and water sharing is one of the many factors impacting on the relationship.

Scholars from South Asia mostly viewed water either bilaterally between India and its neighbours or as basin development approach. Mahendra P. Lama (1997) argues that problems related to water resource management arises not only from unequal distribution but also by the politics of the region which is often influenced by nationalistic tendencies. Size of the population, economic development, accessibility of sufficient domestic water and involvement of social organisations often influence the politics on water disputes. B.G. Verghese and Ramaswamy R. Iyer (1994) considered the lack of political will as a hindrance to cooperation on water. The contentious water problem was due to domestic politics of the South Asian countries. Sundeep Waslekar (2005) in his book on *The Final Settlement: Restructuring India-Pakistan Relations* predicted that the next war would be on water. Since water heads of the rivers flowing to Pakistan are in India, the logical interest of Pakistan in claiming territory is to control the river headwaters. Niranjan D. Gulati (1973) discussed in detail the Indus Water Treaty. Dipak Gyawali (2001) highlighted water issues in Nepal and how best to harness it locally and bilaterally with India. Khurshida Begum (1987) and A.T. Abbas (1984) wrote elaborately about impact of Farakka on India–Bangladesh

relations. Ben Crow (1995) and Q.K. Ahmad (2000) wrote about the Ganges and Brahmaputra basin. All these studies have confined to the empirical case study methodology in understanding river water. This is not to undermine the essentiality of the case study approach. It is relevant to highlight specific issues and help in policy formulation. There is, however, a danger of it becoming agenda specific or target driven. Second, while dealing with trans-boundary rivers the case study approach confines itself to either nationalistic or legalistic perspective. Most of the studies on water security in South Asia have taken political discourse. It could be an indicator of the prominence of domestic politics in national or international discourse.

Some studies have tried to bring in linkages between population, development, climate change and increased pressure on states to negotiate on water. Growing population along with the burden of industrialisation and agriculture has brought in more demands of water, thereby pressurising countries to claim more share. Climate change is another factor that can either lead to floods or droughts. In either case it threatens water supplies. For example, Aral Basin shared by five Central Asian countries Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan and parts of Afghanistan and northern Iran. Cotton cultivation that requires intensive water, along with poor water and land management and water pollution from agrochemicals has led to water scarcity and environmental degradation. Inter-state conflict in Central Asia is a possibility due to trans-boundary nature of rivers that encompasses issues of riparian rights, sovereignty and territorial integrity (Elhance 1997).

Deforestation, another man-made situation, is a factor in water security. With clearing of forests land gets denuded and with reduced vegetation there is less land available to absorb or hold water. Hence, along with availability it is essential to know the state's capabilities to access fresh water (Smith and Gross 2000: 1, 5). For example, Cherrapunji in India has largest rainfall but is a dry area and so are the areas in Uttaranchal. Studies also suggest that with increased usage of water, transnational dependencies on shared water resource will increase. In fact, over 240 river basins are shared between two or more states encompassing 50 per cent of the land area and 40 per cent of the world's population (Dolatyar and Gray: 7).

With the increased usage of water, states had the responsibility for water availability, sharing and procuring. Gradually river waters came under the state control and its official discourse. Trans-boundary nature of the resource brought in international players and actors dealing and discussing the resource. Water has already entered the foreign policy domain of countries. In March 1977, United Nations Water Conference was held in Mar del Plata in Argentina with the purpose to 'promote a level of preparedness that would enable the world to avoid a water crisis of global dimensions by the end of the present century'. Since then water is considered as a socio-political issue. The International Conference on Water and Environment in Dublin drafted an action plan for the water sector which was submitted to the UN Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. Chapter 18 of the UNCED's Agenda 21 formulated a comprehensive action plan devoted to water issues with the objective to provide adequate water of good quality for the humankind while preserving the hydrological, biological and chemical function of ecosystem (ibid.: 7). Water security has entered in the govern-ment's policy of India as well. During the Independence Day speech Prime Minister Manmohan Singh listed water as one of the seven pillars for development. He described it as a national resource that was scarce and needed to be distributed equitably. 'We are committed to increasing public investment in irrigation and addressing the specific problems of each river basin, in an environment and people friendly manner', he said.

To meet the challenge of floods and droughts, people have to be involved for water management and conservation (Singh 2004).

Since water sharing came within the domain of external relations, it was state's responsibility to manage, procure or negotiate either bilaterally or through legal institutional mechanisms. Resultantly, rules were laid down to help countries find solutions, such as in 1966 the Helsinki Rules were adopted by the International Law Association. It dealt with apportioning water from international river basins on the basis of geography, hydrology, size of drainage area, climate, past utilisation, economic needs of riparian states, population and availability of alternative sources. Some of the concepts on the basis of which water is distributed are prior appropriation, Harmon Doctrine, riparian rights, mutual development theory, the linkage principle and the Helsinki Rules. All the six doctrines are used singularly or in combination to share inter-basin rivers. Countries use these doctrines that best safeguards their stand and gives maximum share of water (Just and Netanyahu 1991: 7–8).

The external threats emanating from water is mainly due to its possibility to either create conflict between the countries on sharing or within a country. However, this move towards establishing link between water and conflict has led to debate either in support or in negation of the claim. Falkenmark (1986: 109) considers water potent enough to start international disputes. Scarcity of water at home and dependence on upstream country for water can develop conflictual situations. On similar lines, Peter Gleick (1993: 79) considers water to be a subject for 'military action, instruments of war and a salient element of interstate politics'. Ismail Serageldin, former vice-president of the World Bank said in 1995 that 'Many of the Wars this century were about oil, but wars of the next century will be over water' (Oil and Water, National Geographic). Boutros Boutros-Ghali, former UN Secretary General said: 'The next war in the near east will not be about politics, but over water' (ibid.).

Countering arguments on water wars Thomas Homer-Dixon (1999: 138–39) advocates that no war has taken place on water and no future possibility exists. At the most resource scarcity, especially fresh water, can lead to conflict or exacerbate the existing conflict. First, renewable resources cannot be easily harnessed and converted into assets that can enhance state's power. Second, the countries that are dependent on resources are also poor and unable to wage resource war against neighbour in order to seize resources. However, under certain specific circumstances war can erupt over water: when the downstream country, which is also militarily strong, is heavily dependent on water for its survival and the upstream country is restricting the flow. Sharing trans-boundary rivers can be a causal factor in strained relations; however, it is not the factor inducing war. Dolatyar and Gray (2000: 19) observe that water is only a contributory factor in conflict and not causal factor. Even between countries where water is the source of constrain, cooperation to share the resource is more evident than war. Shira B. Yoffe and Aaron T. Wolf (2003) argue that no war has been fought on water and countries have mostly negotiated and entered into water treaties, thus, consolidating the fact that shared interest outweighs conflict. Water scarcity at the most can lead to political instability (Wolf 1998: 5).

With the broadening of security studies, water resource was looked from environmental, economic, social and political concerns. Since it affected the human collectivities, the security studies tried to analyse it from the domain of individual, group and state.

Myers (1993) brought the water discourse within the fold of human security and said,

[...] Security applies most at the level of the individual citizen. It amounts to human well being: not only protection from harm and injury but access to water, food shelter, health, employment, and other basic requisites

that are the due of every person on Earth. It is the collectivity of these citizen needs—overall safety and quality of life—that should figure prominently in the nation's view of security.

Water as a subject for exploration by security analysts is essential not due to conflict-inducement capability but because it affects life in general. However, all issues concerning water do not qualify for security studies domain. The concept of security would be applicable to water when it is perceived by the people as an existential threat, may be in terms of societal, ecological or political concerns. They become essentially subject to security discourse when they affect an individual's or state's security. Contaminated water or scarcity of water affects people but its impact on the policy, law and order or strains on sharing resource affects state. Of these factors, it is the water contamination which causes more death than war casualties.

Paul Smith and Charles H. Gross's study on *Water and Conflict in Asia* (2000: 19–20) suggests that water can pose wide-ranging threats to regional stability, either violent conflict over fresh water or through large-scale migration and food shortages. From this perspective they identify three levels of water security: (*a*) Water as a human security problem: Approximately 25,000 people die everyday due to unclean water. (*b*) Internal security and governance: Water insecurity affects economic development leading to social tensions which in turn can produce violence within society. Poverty, population growth and environmental degradation are related to water security and can along with migration and ethnic conflicts bring the state to the level of failed state. (*c*) International security: A state affected by internal tension will lose ability to deal with other states effectively. This will reduce the efficiency of the state to negotiate or implement agreements and treaties on economic, environmental or water issues. Water scarcity is also related to the issue of governance. Incapability of the state to manage water efficiently is related to the issue of governance. In South Asia the government's tendency to follow populist means by making it accessible to those already privileged by subsidising it makes bad governance (Ahmed et al. 1997: 1).

Research shows that conflict and turmoil related to river water is more often internal than international. The conflict can be results of dams and other major water projects that relocate large numbers of people, such as the Tehri Hydroelectric Project in Uttaranchal inundated 125 villages. Over 18,000 families got affected. They not only lost their homes but also social moorings and a shared cultural heritage. People were not only uprooted but also clinically cut off from their cultural ties. Sunderlal Bahuguna, spear-heading movement against the large dam in seismic zone of Tehri, said, 'the dam is built with our tears' (Tripathi 2005).

Violence between or within countries could be induced by simple scarcity, group identity or insurgencies, according to Homer-Dixon (1999: 137). Simple scarcity conflicts understood in the traditionalist realist terms means resource war where states use aggression to meet their interests. It causes group identity conflict between groups when they perceive each other in terms of 'we–they' syndrome while sharing fixed or reduced resource. Such displacement strains economy and creates social disturbances and political instability. The construction of Sardar Sarovar Project on the Narmada River and the Tehri Hydroelectric Project on the Ganga in India are such examples of displaced population leading to internal group conflicts.

The population displacement can take an international dimension and create problems of refugees crossing international borders. One such incident occurred in 1989 in the Senegal River Valley which demarcates the border between Senegal and the Mauritania. Senegal constructed Manantali Dam on the

Bafing River and the Diama salt-intrusion barrage on the Senegal River. The prospects of development in irrigation, navigation and power for agriculture increased the land value, which led the moors to disallow the black Africans from farming and fishing along the river bank and later disenfranchised them. The discriminating practice in Mauritania had an impact in Senegal where the blacks showed their wrath on the moors leading to mass exodus of population across the country. The population increase and degradation of land resources had led to agricultural shortfalls which encouraged the governments to take developmental schemes which were beneficial to certain areas of both the countries. The imbalanced development led the elite to take control of the resources leading to racially discriminatory measures. The net result was refugees from Mauritania to Senegal (Homer-Dixon 1995: 158).

The migrants also weaken local and national institutions of the host region often decreasing central authority to control newly emerging socio-economic and political conditions which are often conducive for insurgencies or civil strife. In this scenario, it affects land and people and challenges government for not only resolution of tension politically but also socially, economically and ecologically through meeting demand and supply and equitable distribution. The influx of Bangladeshis in India has led to strong socio-economic imbalances in the states of Assam and Tripura. It has altered land distribution, economic relations and balance of power politics between the religious and ethnic groups. However, migrants are generally weak in an adopted society and can cause conflict when they have either achieved socio-economic upward mobility or are supported by the regions' politics.

The violence of the third kind is insurgencies that are a result of relative deprivation or group identity conflict. The environmental induced scarcities affect economic productivity from local to national level. Those affected by these environmental and economic backlashes can generate social tensions by migrating to other cities or countries. It often leads to group identity-induced conflicts, within country or between countries. Water scarcity often causes large-scale migrations from the rural areas to the cities, creating massive waves of displaced and unemployed people. Such occurrences seriously drain the economy, create social disturbances and may lead to political instability.

Migration, however, is a historical phenomenon. People have been moving for better food, livelihood and life from one place to another. However, displacement or migration due to development projects on rivers raises many socio-economic and political questions. It entails the issue of choice. Do these displaced people, affected by dam construction, wanted to move out? Did they approve of such a development on water resource? If not, the state becomes the exploiting agency which in the name of providing development activity to people displaces some from a site. This creates social tension within the state. It becomes a security issue because human security of displaced people is involved, or it can erupt in violent movements against the state. As long as the host country is receptive and the movement does not impact on the economy, ecology and culture of the receiving country, it does not enter a security zone. It does when the groups view each others as enemies.

Water scarcity can be at two levels: absolute scarcity such as in Sahara desert or deficiency of supply which may mean even slight reduction in supply to which people have been getting earlier. There is also a sense of psychological scarcity when people believe a shortage exists and behave accordingly irrespective of the actual realities on scarcity. Climate factors, human activities such as pollution, over-consumption leading to depletion and distribution to many more users can lead to water scarcity (Dolatyar and Gray 2000: 62). However, reduced amount of water per se does not qualify for security.

Wolf (2001) found out that

[W]hile the potential for paralyzing disputes is especially high in trans-national basins, the report of violence is actually greater with in nation's boundaries. Tensions have spilled into violence on occasion, generally among ethnic, religious or tribal groups, water use sectors, or states/provinces. While disputes can and do occur at the sub-national level, human security issue is subtler and more pervasive than violent conflict.

One cannot stop at looking displaced people only in terms of displaced or affected lot. They are also ecologically or economically marginal in a society. Most of the sites selected for water projects such as reservoir or dam is on the outskirts of heavy human habitation and development. Those living there are as such marginal from the mainstream society. Hence, the water projects are also seen as threats to the choices, life and safety of the marginalised groups. Thus, another issue of 'us versus they' that is 'state versus people' comes in. Securitising elevates an issue from ordinary politics to the level of prime national attention. It also makes the issue state centric. There is a need to bring symbiosis between state and people's interests and concerns. Inclusion of water in the security domain is not sufficient. It has to be responsive to people's interests.

Security of Water

Once an issue enters security agenda it becomes an issue of prime importance to the state. We accept that a situation exists that is essentially threatening the state and its people, hence the onus lies on the state to rectify it. Hypothetically speaking, if the situation is due to paucity of water for public consumption leading to conflictual situation, it becomes the state's responsibility to provide it. If there is less resource within the district, town, region or state, it is the state's responsibility to procure it. It may negotiate with other districts, towns, regions within the state or other states for trans-boundary rivers, lakes, aquifers for procurement of water. Similarly, if the situation has come out of the cooperative mould between states on river sharing and has entered the conflict zone, it is the state's responsibility to resolve the conflict before it precipitates into military option. Once the state takes the responsibility over water, it comes out of the domain of community responsibility. This state centricity alienates individual from the resource, in this case water.

Water either from rivers, trans-boundary rivers, glaciers or underground becomes the state property and decision to utilise, distribute it rests with the state. As a result the individual has to comply with not only the state's authority but its methodology to utilise water. State becomes the dominant voice and others either giving alternate views or opposing are regarded to be on the other side of the security zone. This kills the voices and concerns of people on an issue of utmost human importance. Any objection to state's position is considered as non-compliance to the state's authority. For example, the positions drawn are influenced by the politics of the day, be it at bilateral, regional or global. At times the realities on ground differ from the political formulas charted out and this results in defiance or opposition from people against the treaties or trans-boundary agreements. Voices from affected people emerge against the state-centric notion of security.

The agency for development projects on water is also the state and its associated agencies like multi-national corporations and international agencies. Since big investment is required for development projects, finance comes from international funding agencies and multi-national corporations. Big dams for hydropower, water management and irrigation are considered by the state and its corporate sector as

the tool for meeting water requirements. Irrigation is the engineering marvel to meet the requirements of the water deficient region and is the responsibility of the state. As a result, people's participation in the development project becomes marginal. Resultantly, people assert their association with the resource be it on ownership or partnership.

New movements sprang up questioning the state's attempt to development projects which were perceived as protecting small elite class. People rose against big dams. Organisations like International Rivers Network (IRN) have been voicing against large dams and consider them as a threat to the livelihood and cultures of the elite. Large dams are blamed to be ecologically unfriendly that have further increased impoverishment and human rights violations. (International) Considering dams to be representing the elites or dominant classes of the society, IRN identifies indigenous, tribal and peasant communities to be the affected social group. The European Rivers Network (ERN) links groups, organisations and individuals not only from Europe but throughout the world working from environment, culture, education and human rights to dialogue on the protection of rivers. Working against the exploitation, pollution and degradation of rivers the organisation works for the sustainable management of rivers. (European) Rivers Watch Network (RWN) was set up to bring together groups on citizen-participation mode. It supports river and watershed movement. Some of the movements against large dams are in Arun III (Nepal), Narmada Valley Development Project (India), Lesotho Highlands Water Project, Eupupa Dam (Namibia), Chixoy Dam (Gautemala) and Curitiba (Brazil). Hence, similar to environmental or resource concerns that are not only local but global, the movements with alternate voice for development are also local with links that are global.

Alternative voice critiquing the security of water provided by the state is entering the zone of people's participation. Institute for Social and Environmental Transition (I-S-E-T) is solely dedicated to adaptive strategies wherein it questions the conventional approaches to water management that is stationary as it deals with water availability, river flows, sediment loads, infiltration rates and other key hydraulic parameters, whereas adaptive strategies takes into consideration socio-economic change, natural resource variability and human organisational limitations as the starting point.

Another view point countering the state domination as the sole decider of water management is to have a three-legged approach wherein the state along with the corporate sector and the civil society becomes the chief negotiator in the process (Gyawali 2001: 132–33). Basing his premise on cultural theory, Gyawali proposes that government and the scientists associated with them work towards more finesse in generating data for verification and improving adjudicatory techniques. Scientists in the private sector prefer to improve efficiency and sophistication of gadgets catering to profit-making market. The voluntary sector acts as 'social auditors' contesting claims of others. Thus, it is essential for all the three to find a space in the body politics. A recent example of state giving water rights to multi-national corporation without taking the support of the people led the project to collapse. In Plachimada, Kerala, the Hindustan Coca-Cola Beverages Limited had been given rights to withdraw ground water for its bottling plant. The rural panchayat protested against the depletion of ground water, especially when the region had received rains below normal for the third consecutive year. Coca-Cola had been drawing at least 350,000 litres of ground water every day. There were protests questioning commercialistion of water and also contamination. A Supreme Court monitoring committee visited the site in August 2004, and said that water had become contaminated and unfit for drinking (*San Francisco Chronicle* 2005). In April 2003, panchayat withdrew licence of Coca-Cola factory. On 16 December 2003, Kerala High Court supported the panchayat decision following which the company shut down its operations. However on 7 April 2005, another bench of High Court order gave verdict in support of the company (Ninan 2005).

Since then the future of the project is in limbo and protest continues unabated. This incident raises basic questions related to rights over water. Who controls water? Is it the people, the state or the corporate world? Hence, the notion of state control over resources is giving way to participatory approach with community participation at local level.

The idea is not to erode the state's power and position but to strengthen it by providing support to it from all the sectors. Any one sector accounting more say can bring in imbalance. Market is assuming much larger role in water control, distribution such as extraction of ground water through tubewells and borewells, supply by private tankers and bottled water trade. The impact of market forces on public system in providing water to all cannot be ignored. If there is efficient distribution and availability of clean water, the demand for private tankers and bottled water may go down sharply. Lack of financial resources is also pushing governments to invite private sector involvement in dams and reservoir projects (Iyer 2005).

There is a belief that water is a finite source and like any other natural resource it should be subjected to market prices depending on demand and supply. Clay J. Landsay and Terry L. Anderson argue that, 'to bring demand and supply into balance, water markets are needed. Under a market system, prices are not regulated, but are determined by the free exchange of water rights... The rights define the amount of water to which the owner is entitled' (Lindsay and Anderson, The Rising Tide of Water Markets). However, there is also a human face to the issue. Should clean water and air not be the fundamental rights of the people? In Chhattisgarh 20 km stretch of river Shivalik was sold by the Government of India to a private company for water supply. Many argue that even though market is important for financial support in water projects, its overwhelming influence will bring in lopsided development. Commercialisation of water will bring it from social sector to economic. Narasimhan (2005) argues that the Constitution of India should protect the water rights of an individual.

The role of civil society is important to represent the interests of the people. It takes responsibility to protect people's interests and give direction to them. In the globalised world when the states and markets act from local to global level, even the civil society operates locally to globally. However, civil society should be cautious lest it loses its voluntariness and loses the very purpose for which it stood. At times they also begin to represent government, donor or business interests. Those representing peoples' cause and acting as a check on both the state and the market would be able to represent the peoples' interests.

Another approach questions the way by which water is shared between countries. After analysing two indigenous tribes of dryland regions from Berbers of High Atlas Mountains and the Bedouin of the Negev Desert on their methods to negotiate water conflicts, Wolf (2000) concludes that instead of sharing water in 'volume', the 'time factor' should be taken into consideration. It allows for local management of water fluctuations, prioritises different demand sectors, promotes downstream rights and through recognition of a water authority promotes alternative dispute mechanism.

Hence, the traditional notion of state's responsibility to control water is being challenged. Individual as a referent subject of security is not only considered as the affected party but also as a party to decide the future course of water usage. The concept of security has to be both broadened and deepened. It has to expand horizontally and vertically, incorporating different agendas of security and different actors for providing security. Merely securitising water does not meet the requirements of the state and people. There has to be a harmonious working relationship between the two, otherwise it tends to negate the purpose of securitising.

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Sangeeta Thapliyal is Professor of South Asian Studies in the Centre for South, Central, South East Asian and West Pacific Studies, SIS, JNU.