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Water Stress as a Threat to Human Security

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ABSTRACT

Security paradigm is constantly changing. World is changing very fast and non-military issues are taking much more importance as compared to military and conventional race. Non-traditional security threats are the challenges for the survival and wellbeing of the individual such as climate change, food and water security, natural disasters, diseases and irregular migration. Water security has taken central position on international forum. Some major international issues such as population growth and pollution are altering the sharing of water reservoirs and political involvement over these resources is becoming a hot issue not only within states but also across the borders. Security is a multidimensional approach and focuses on the welfare and well-being of an individual. An individual's security cannot be assured through military means; it also adds all other factors that are to be fulfilled for the survival of a person. Water is interlinked with environment change. Water as a natural resource may contribute too many security risks and threats that may be cause of intensification of a dispute. If we pay more attention to save water and introduction of new techniques to best utilization of water resources, then it is possible to handle and use water in a better way. Improvement of policy making in water management is also very important factor for human security at international level.

Keywords: *Water stress, Threat, Human Security*

Water: Threat to Human Security

Water is considered one of the hot issues in the modern era of human security. Since last few years, meanings of security have changed. First; its focus was on military threats and conflicts but now it has extended to incorporate a broad scope of dangers to safety measures. However, water is set in more extensive meaning and works as a focal connection over the scope of security, having political, wellbeing, monetary, individual, nutrition, vigor, and ecological basis. (cf. Zeitoun, 2011). It is a diversified topic as well as an essential element for accomplishing the design of security, from the person to the global level. Human security can be guaranteed if individual protections met so as to assure a great degree of wellbeing and prosperity, sufficient and safe food, a safe and secure atmosphere intends to a safe employment and assurance, satisfaction of basic needs and freedoms. It is vital for guaranteeing the protections and surety to safe supply of water at the domestic or national level to the nonviolent distribution and the board of trans-boundary assets as well as political limits. It depends on a person's perception and standard of prosperity; these are intensely attached to the person's requirement and advantages it gives. Security of water can decrease the potential for clashes and pressures, adding to social up gradation, financial and ecological advantages for a bigger scope, just as to the development of states' and widespread commitments.

Idea of security broadened during the Cold War by some scholars, among whom Bary Buzan is prominent scholar who added new ideas and broadened the concept of security. Buzan tried to widen idea to contain apprehensions in the non-military sphere in the book entitled *People, States and Fear* (Buzan 1983, 1991). However, the main concern of argument is the quest of liberty. Buzan enlightens so as to the actions of human security is influenced in five main domains: military, financial, communal, political and environmental. Military security deals with dual-level interaction of the equipped capacity of a state. Security of politics relates to the structural constancy of countries, their governmental structure, and values that maintain their legitimacy. Economic security depends on the direct access to the markets, financial resources and different levels of economic welfare. Collective security involves continuity of different modes of language, customs and traditions, spiritual norms and national identity. Environmental security discusses uplifting of adjacent situations and the global environment as the fundamental supportive networks whereupon all other human endeavors depend. While these five elements are firmly connected to one another, each "characterizes a point of convergence inside the general security program, and a method for requesting needs" (Buzan: 18-19). Right now, efforts are made to expand the extension and space of the idea of security so as to incorporate non-military threats in the lexicon of security.

Water has always been vital for the existence of human being on earth. Ancient cultures like Greeks were used to worship gods and these gods thought to live in water and have command and control over it. Cities were built near water areas for easy access of water. Gathering places were around the wells which is perhaps a new trend of building fountains. Old civilizations such as Greek, Roman and Egypt exploit water resources and used different systems to access water resources.

Indus valley civilization started near the banks of the river Indus. In ancient India, people believed forests as 'Mothers' of rivers and worshiped forests and sources of water belonged to it. In civilization, they built boats and watercrafts. According to Archeologists it was a great contribution and dredged canal is their discovery. Water is very important for socio-economic development, production of food, energy security and survival of human being itself. Water is interlinked with environment and society. Water cannot be separated from cleanliness or personal hygiene. Both are vital for improvement of health, education and production and up gradation of economy for populations.

New Paradigm of Security

In the 21st century, when security agenda is changing, 'security' has been discussed at different forums. Water has become an emerging challenge and national security threat as well as human security. Water issue forms a critical part and redefined the understanding of security dilemma. On the basis of security, it alerts the policy makers and decision makers. Water as a natural resource is challenged and in current era it is considered as a human security threat. Security of water suggests/ indicates an easy access to safe water, agriculture, industrial and domestic use. Not only energy and food but also water has taken a key position in security agenda and revisits policy on the basis of planning in the long run. Now- a- days, non-traditional security threats are taking more attention in security agenda. Water is considered as an existential threat and creates the public awareness, political attentions, policy and

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planning. However, it is a permanent threat that this issue would become the part of political intentions, direct link with politics could be halted in political context. Another problem of securitizing water contrary issues is that developed countries intervene in the matters of developing states. While one may have concern about securitizing the water issue that has directly linked with human security. Numerous definitions of human security discuss about providing the basic human needs e.g. health, food and energy security which are the different elements to securitize the human beings.

It is said that water could be a serious cause of clashes between the states in next decade/ over the next ten years. Water could be a resource exploiter and danger in shared basins and could be used as a weapon or terrorist act could be occurred and will also become a human security threat in developing states. Geopolitical balance of power could be affected through water supply, control over water reservoirs and upper riparian states could manipulate the interests of lower riparian states through supply of water. Terrorists can target bridges and infrastructure related to water. Water crisis is health issue, environmental, economic, political and industrial issue. Water related issues are the main reason of diseases in backward areas and has become a problem of human security in developing countries. Women and children spend many hours to access drinking water in developing countries. Increasing unrest and battle over water resources in the world is going to be an unresolved issue because it is not reducing the risk and tension with extreme water events.

Causes of Water Scarcity

Water Pollution

Water is the most important component on earth and a vital element for all of the creatures on Earth. Water pollution is the addition of polluted bodies in water that is usually due to human activities. Water reservoirs include lakes, rivers, oceans and groundwater. Water pollution results when contaminants add into natural resources. These contaminants could be toxic chemicals or biological agents which exceed in the groundwater, pollutes the water and pose serious threats to human security. Low water quality becomes the reason of water scarcity. Water pollution has environmental circumstances that make water unhealthy or decrease the availability of water resources. Pollution has become main reason of threat to the reuse or availability of water. Human and animals consume water that is considered safe and called potable also called drinking water. This water usually used in drinking, cooking, washing, cultivation of food and for daily use. Now-a-days bacteria and other polluted elements are affecting quality of our drinking water. When contaminated bodies dissolve in water and become the degradation of water quality. This is not only disastrous for ecosystems but also dangerous for all water consumers.

Over-Population:

It is an undesirable condition where number of people exceeds unwontedly and natural place of inhabitants decreases. Number of factors is included such as increase in births with low mortality rate, less medical facilities, depletion of natural resources and increased migration. Our planet is facing a number of challenges, among them over –population is affecting ecological changes along with environmental degradation, and global warming and pollution is the main

contributors of lower water quality. Over-population will place demands on land, earth and natural resources leading to extensive environmental problem in addition to effecting standards of living and impacting international economies. It also reduces the opportunities available for employment, basic human needs like food, education, sanitation, medical facilities and high life-style. In developing countries, over-population is posing existential and financial threat.

Agriculture:

Water is vital for agriculture and production of food and crops for the existence of human being. Present and future generations depend on food and nutrition in all over the world. Agriculture is also sufferer and the main cause of water shortage and water pollution. Reasonable quality and quantity of water is required for irrigation system and cultivation of crops as well as for livestock and fisheries. On the other hand, agriculture is the main reason of water pollution and the major user of water at the same time. Weak water policies and practices threaten the livelihoods and income generation that is dependent on agriculture. Moreover, variations in climate affect the agriculture by increasing demand of water, restrictive food production and lessening water supply where cultivation of crops have more advantage and needed. Change in climate will be the reason of extreme weathers, changing weather patterns and challenges for agriculture sector.

Climate change:

Climate change also distracts the water cycle and planning of everyday life that is dependent on hydrological settings. Changing climate is an important factor that affects not only drinking water supply, hygiene, food and energy production but also availability of water. Floods and droughts are also the reflection of hot weather patterns. Due to hot weathers, snow is melting on glaciers and changing patterns of rainfall are also the main reason of climate change. Contaminated water and water related diseases are the reason of weak policies and poor water management. Conflicts and clashes are growing over shared water resources. Climate change is considered as added burden on all of the population. Water challenges are increasing with the passage of time. Human activities have affected on climate changes that are damaging water policies and true utilization of this natural element is rare. Good policies and innovative technologies are required for obtaining, cleaning and distribution of water. It requires utilization of water for more cautiously and professionally. Sanitation and access to safe drinking and clean water is basic/fundamental human right. Future of water could be secure if all of individuals, nations, communities and states work together for the sake of proper distribution and utilization of water.

Effects of Water Scarcity

Hunger

Water is crucial element for growing crops and for survival of livestock animals. Global use is estimated that 10% of water is consumed for domestic use while 70% of water is used for irrigation and agriculture purposes. As a result, farming and growing crops use much more amount of water as compared to household uses. On the basis of non-availability of water, animals die and crops affect due to water shortage that always results poverty and hunger as well as thirst in these water stressed areas.

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Health Issues

In many states, water shortage compels people to drink low quality of water that flows from streams, most of these are polluted. As a result people are infected due to water borne diseases that usually kill the people. Water scarcity may also cause of poor sewage system which becomes cause of infectious diseases like Cholera and typhoid that is injurious for people. When water is scarce at public places, restaurants, hospitals and clinics for sanitation then health of the common people compromises and caused into severe diseases.

Poverty

Better living standard and better economic growth depends on good quality of water. All institutions including schools, restaurants, hospitals and working places need water for cleanliness and sanitation to stay safe and healthy for working properly. If we imagine that a working place or high standard school remain without water even for a single day then what will be its situation and it can be an economic loss too. For the attraction of the visitors, hotels and plazas need to be kept clean. For the smooth working and progress of industries, agriculture dealings and viable businesses require a high amount of water. Without financial progress due to water scarcity, poverty level get higher and low living standards of people put them under poverty line/rate.

Ecosystem & Habitat Destruction

Habitat destruction is the procedure of in which natural habitation is incapable to protect its inhabitant species. The organism that earlier occupied the place are moved or die due to ecological changes. Habitat is lost and debased when natural and manmade activities change this place so that less species can survive there, each and every species plays an important role in its habitation. Destruction of habitat is threat to world's plants and animals and it is happening at high level. When there is water shortage seen, then it shows natural habitats bear more as it becomes the reason of desertification, less plants, animals and loss of wildlife. Consequently, these environmental disasters becomes the reason of habitat loss also it turns into food shortage and low living standards. In many areas of the world, fresh water lakes and resources of fresh drinking water are diminishing due to ecological changes. These changes are the main cause of water scarcity.

Disappearance of wetlands

Wetlands are crucial part of our earth. Wetlands are natural filtration systems. Wave actions of shores are protected by wetlands and they also lessen the effect of floods, soak up pollutants and provide better quality of water and work like a sponge. By doing this, wetlands keep water purify and filter it. They provide safe environment for animals and plants. These lands accept water in stormy days and release water when level of water becomes low and when it is needed. Consumption of more water is required in agriculture than any other field. Disappearance of wetlands is due to hot weathers; climate patterns are altering and causing water shortage. Disappearance of wetlands is going to be at alarming rate.

Solutions to Water scarcity

Groundwater recharge

A level of groundwater is declining in all over the world due to exceed/ access amount of water withdrawals. One way of controlling this decreasing water amount and maintaining the water levels is by using artificial recharge of groundwater. Artificial recharge is an act to increase the amount of water that joins aquifer through human controlled activities e.g. groundwater could be recharged by redirecting water course through canals, ponds and artificial lakes. If there is seen water scarcity then it is obvious that dependence on ground water will be least or the availability of groundwater will be very short. In this situation, when there is plenty of rainfall there is sufficient rainwater could be used for building projects other than all-purpose. Existing quality of water could be better utilized through recharging ground water and in this way; water situation could be handled properly. Rainfall savage from different sources of an organization may also be efficiently utilized for refreshing under -groundwater. Many ways are adopted for recharging of groundwater and utilizing rainwater. A lot of consciousness is required so that water is not polluted in the course of recharge.

Re-use of water and better Water treatment

Water reuse or recycling of water from various sources then treats and reuse it for different purposes. Reuse of water is the procedure of converting wastewater into utilization of other purposes. Wastewater that can be reused for different purposes e.g. irrigation, toilet flushing, agriculture, environmental restitution and groundwater recharge. This water recycle becomes the reason of saving of finance and resources. Existing water reuse enhances the supply of water and sustainability. Better water treatment can be divided in planned and unplanned water uses. In planned water reuses refer the designed systems having goal oriented of the beneficially reusing of water in various domains. Unplanned water reuse varies from situation to situation. A common example of it that communities use water from rivers or lakes that live near the bank of the river which is already used from the upper riparian. After treatment, water recycle is the option to enhance or increasing water assets so that supply of water could be constituted.

Maintenance of water quality

Water quality is considered to the chemical, biological and physical features of water. It is the measurement of the condition of water which is relevant to the one or more species. It is used by set of rules and regulations that must be achieved through proper treatment of water and can easily be assessed. The most common parameters are used to maintain human standards of drinking water that relate to human health and standards of drinking water. This water quality must be suitable for human consumption and for all domestic uses. Political and scientific institutions make rules and regulations and take decisions that what will be better use of water. Environmental scientists draw their attention to understand how these systems function, which in turn identify that how these contaminants work. Policy makers introduce the laws for the best use and utilization of water. In this way, water quality could be maintained through proper check and balance.

Water storage

Storage of water is the process to storing water in particular area for a specific time. Water storage is a term referring to storage both potable and non-potable water. Water storage could be natural or artificial. In developing and developed countries found in hot climate, there is dire need to store drinking water during dry seasons. Water storage depends on the atmosphere, surface of the earth and ground water. Due to various reasons, artificial water storage is built up for storing water that is called reservoirs. Agriculture is also dependent on water and stored water can be used in times of hot weathers when water is short and can be utilized through storing in artificial ponds, reservoirs and tanks. Water is stored for later use in natural way e.g. groundwater, soil water and wetlands.

Conclusion

New security paradigm has been introduced in 21st century. A political and military issue has transformed with new security agenda. Natural resources safety is assured with water security, peace and stability of a nation. Decisions taken by United Nations in all the sessions are interlinked with human security and water. In past, people prefer to live near water and some of the inhabitants of old civilizations worship water as they think that god or goddess live in water and have control over it. In current era, interdependence of natural resources such as water is a serious human security threat whereas in this changing situation, water is becoming short and crisis of food, energy and water is taking central position in new security paradigm at international level. Variations in environment are also another factor of water scarcity. Water management not only at domestic level but also across the borders is emerging another security threat. In disaster prone areas, unequal distribution of resources is tough task to approach water and awful services of sanitation may widen distrust, ferocity and conflict, thus escalating the hazard to security of water. Unequal distribution of water and water shortage has gain importance on international forum and UN many times declared water as a vital natural resource for the survival of an individual. Climate change impact on water has become the reason of water scarcity in all over the world as well as other factors i.e. water pollution, over-population and agriculture has contributed to the crisis. Developed states want to control and command over water resources and use water as a tool on political and strategic forum. Many scientists predicted that water is becoming as a scarce element and timely decision making and plans for future water management is the need of the hour for human security.

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