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WATER LAW NETWORK: BANGLADESH PERSPECTIVE

Abstract

Optimum water resource management constitutes a major building block of Bangladesh's development governance. In order to attain sustainable development, Bangladesh needs to address its water-related problems through viable policy architecture. The purpose of the paper is to probe into the efficacy of the country's existing legal framework in order to address various domestic and trans-boundary water-related issues. In this context, the paper strongly argues to create a mutually gainful "water partnership" through appropriate water management at national, regional and global levels. In order to develop sustainable water partnership, the prevailing institutional framework of the water regimes of Bangladesh and its neighbours needs to be appropriately tailored.

1. Introduction

Water scarcity and hazards are now frequent all over the world. An estimated 300 million people in 26 countries currently suffer from water scarcity. By 2050 approximately two-thirds of the world population in some 66 countries will face from moderate to severe water shortage. More than 1 billion people live without a daily supply of fresh water and more than twice that number has inadequate sanitation. Attributes of the "global water crisis" are already with us, and complex problems are looming ahead. Managing scarce water

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resources for increasing demands in an equitable and sustainable manner has been one of the main challenges of the 21st century. Owing to limitations problems are acute for developing countries. Bangladesh has been a victim of water crisis and its hazards. The country is a land of rivers. It has one of the most complex river systems in the world forming an interlacing grid.¹ The principal rivers of this network are: the Ganges (Padma), the Brahmaputra (Jamuna) and the Meghna. The Padma flows south east of the country after it enters and breaks into hundreds of distributaries of which the largest are the Madhumati and the Arial Khan rivers. There are some 230 rivers in the country. Out of these 54 rivers flowing from India and 3 rivers flowing from Myanmar fall into the territory of Bangladesh and finally meet the Bay of Bengal.²

In March-2000 a record number of member states endorsed the "Hague Declaration on Water Security." It was committed that their governments will take measures to provide water security. Bangladesh has formulated National Water Policy and Integrated Water Management Plan (NWMP). The Bangladesh Water Partnership has developed Bangladesh Water Vision 2025 and its Framework for Action (FFA) under Global Water Partnership. The common objectives of those are to ensure water availability to all, introduce appropriate institutional changes, and develop a legal and regulatory environment and sound environmental management.³

1 M. Habibur Rahman: *Delimitation of Maritime Boundaries (1991)*, Rajshahi, pp. 267-275. For details of data see *Bangladesh Water Vision, 2025*.

2 Frank Debenham & William A Burns (eds.); *Illustrated World Geography (1960)*. Mca. Grow-Hill; New-York, P. 436.

3 The objectives of Water Law Network are to (i) collect, collate and analyze the legal instruments on water resources; (ii) exchange information on the formulation and implementation of water resources law and regulations; (iii) exchange cross fertilization of ideas from a sound legal regime on water resources; (iv) provide facilities for analytical studies on water resources law and (v) form a network of institutions on water law.

Waters available as surface water and ground water are used at all levels in the country. To all intents and purposes, waters are regulated exclusively in the interest of the people and through shared policies with the neighbours too. But the existing laws in the country relating to water serve our interest little even territorially. In addition it can be said that the existing laws cannot be effective extraterritorially.⁴

Under the circumstances, needs arise to implement the existing regulations properly and the provisions effectively and to frame new laws and regulations to meet shortcomings thereof. The purpose of the paper is to make an acquaintance with the theme of the existing water laws and regulations of territorial and extraterritorial concern. Attempts will be made to suggest a legal regime of water to serve interests of the country exclusively and promote global water partnership with special reference to the interests of Bangladesh with its neighbours.

2. Sources of Water

As regards availability of water we are aware of surface water and ground water. The natural surface water resources in Bangladesh are mainly obtainable from the country's dense network of river systems, including the tributaries and distributaries of the three major river systems, the Ganges- Padma, the Brahmaputra-Jamuna and the Meghna.⁵

4 Our National Water Policy, Integrated Water Management Programme, and Bangladesh Water Vision, 2025 are taking innovative steps to meet the challenging demand for water in the 21st century and to make a sustainable water network for the country. However, the existing laws and regulations relating to water, water rights, users responsibilities, water licensing and administrative aspects are not adequately enforced, See *Dr. Mohiuddin Faruque v. Bangladesh*, 49 (1997) Dhaka Law Reports, pp. 1-29.

5 L. Dudley Stamp: *A Regional Geography Asia* (1964), Longmans, p. 53.

It should be mentioned that about 90 per cent or more of Bangladesh's annual runoff enters the country from outside its borders. There are numerous perennial and seasonal wastelands like dighis, haors, baors, daha, danga, beels and jheels. Moreover, we get rain water that can meet our needs to a considerable extent. As surface water we get flood water as the cheapest means. We also extract ground water for drinking, domestic purposes, irrigation, industrial use and so on through shallow tube wells, deep tube wells and hand made or artificial wells. Preliminary estimates at the inception phase of the NWMP indicate that cross-border flows into the country amount to around 1019 billion cubic meters (BCM), and an additional amount of 340 BCM is generated from local rainfall, averaging 2300 mm. Of this total quantum of available water (1350 BCM), about 190 BCM of water is lost in the atmosphere through evaporation and its transpiration, while the balance of 1160 BCM is available for use of flows into the Bay of Bengal. Eighty per cent of this huge flow of water is concentrated in the five-month monsoon period of June to October. Moreover, as a coastal state it is possible to extract seawater for Bangladesh. But it is difficult and costly to do it. In fact, there are limitations on the part of the least developed Bangladesh for use of seawater to meet the needs.

As time goes on, sediments are being deposited in the rivers. Consequently, rivers are becoming shallow.⁶ The territory of Bangladesh gets submerged by floods that occur sometimes even unnoticed. There is also to mention that tidal bores of the Bay often seriously affect the coastal zone of the country. The sea level is rising and the low-lying areas are being inundated by surges.⁷ There is no

6 M. Habibur Rahman: "Delimitation of Maritime Boundaries (1991) – A survey of problems in the Bangladesh Case" (1984), *Asian, Survey*; University of California, p. 1315.

7 M. Habibur Rahman: *Delimitation of Maritime Boundaries* (1991), Rajshahi, p. 273.

controlling mechanism to govern these hazards. Although sea waters appear in the land territory but such waters cannot be stored up to be treated as sources of water. In reality, these waters cannot be made useful to meet the needs.

Climate changes throughout the world are not now uncommon. Owing to these, radical changes are taking place in various spheres of Bangladesh. Although known as the monsoon area in the world, at present the country is losing this entity. Rainfall is not up to par as it rained earlier in the country.

Bangladesh often experiences droughts for prolonged periods during pre-monsoon and monsoon due to erratic and delayed rainfall causing serious problems for domestic and municipal water supply, agriculture, fisheries, navigation etc. During the dry season (November to April) the country largely depends on ground water and surface water available in the major rivers. Over the last three decades the dry-season flows of the trans-boundary rivers passing through Bangladesh have been facing gradual reductions from the normal historic flows. It results from barrages, diversion structures etc. on the rivers in their upstream zones. India started large-scale diversion of the dry-season flows of the Ganges by constructing the Farakka Barrage in 1975. Barrages and diversion structures have also been built by India on the Teesta River and about a dozen others.⁸

At present there appears arsenic in ground water in different regions of Bangladesh.⁹ These fatal chemical pollutants have frightened survival of people in the regions. Efforts are being made at various levels by the Government as well as by the NGOs to create public awareness. Under this situation ground water cannot be made

8 B. M. Abbas, AT: *The Ganges Waters Dispute*, (1982) University Press Limited, Dhaka.

9 Dr. Mustafa Abdur Rahim: "Arsenicosis and its remedy", *The Independent*, Dhaka, 15 March 2002, p.10.

useful without being purified. The poor developing countries are in dire need of funds in order to save them from arsenic poisoning.¹⁰

In respect of rivers, Bangladesh is a lower riparian state whereas its neighbour India is in the category of upper riparian state. This gives rise to a fact that waters of the common rivers between Bangladesh and India cannot be a subject of exclusive. But geographically, it may be a privilege for the upper riparian state to apply its authority arbitrarily. But care must be taken not to infringe the natural courses of the rivers. It is also to take into account the utility of river waters in the need of the concerned regions and their people whether of the lower or upper riparian states. In any circumstances, this attempt cannot be effected without the participation of the riparian states.

3. Contextual Essence

Ecology as natural resource law is now in full focus of national and global attention. Pollution has come to stay in its diverse stings, and the whole humanity is out on a crusade for environmental balance. (Environmental management is an extensively broad and dynamic field involving a wide range of professions in science and engineering, humanities and social sciences, law and business.) It is hard to predict how it is likely to change in the next few years. But what is clear is that it will become more and more important as the planet's natural resources are stretched further and further by an ever-growing and demanding population. Over and above, it is possible to envisage that environment stands as all-inclusive in scope¹¹. [It is

10 It is not possible for Bangladesh to meet water demands with its limited funds and technology, Bangladesh water hazards cannot be eradicated without it being funded to implement water partnership as per its aims and objectives.

11 M. Habibur Rahman: "The Role of Law and Technology for Maintaining Environment" 47 (1995), *Dhaka Law Reports*, p. 81.

now time to create awareness of environment so that water partnership through its sustainable and equitable management at all level – national, regional and global is ensured.]

3a. General Approach

In Bangladesh pollution problems have been adventitious to the developmental programs and its campaign to eradicate poverty. The efforts to boost progress have simultaneously put dire pressure on natural resources of the country. Irrigation facilities have also adverse effect giving rise to salinity and the result is to cause land pollution. Eradication of poverty warranted our exploitation of natural resources of the country, like land, forests, and water to cope with the escalated need for employment for shelter involving housing schemes, for fuel, fodder and furnitures.¹²

Consumption of timber in diverse sophisticated modes of modernity have resulted into deforestation accelerated by intense biotic pressures owing to increasing population and livestock, in addition to the acute pressure on wood by industries. Deforestation has resulted into uneven availability of water, exhibiting and alternating cycle of flood and droughts; untreated human wastes in towns and cities and domestic discharges have contaminated the quality of surface and ground waters. The overall picture is dismal and horrendous. Needs arise to promote networks of laws and literature to alert people about water partnership. The mode of partnership should be effective to procure interests of the concerned people.¹³

12 Dr. R. G. Chaturvedi, *The Law on Protection of Environment & Prevention of Pollution*, (1996), LBC Ltd. Allahabad, p.v.

13 In Bangladesh there is no law on "water partnership" The Partnership Act, 1932 does not say what is meant by "water partnership".

The specialized agency like WMO is internationally responsible for coordinating world meteorological activities and encouraging an efficient exchange of meteorological information between the countries in the aid of human activities. The help of meteorologists and the hydrologists is needed to control the vast quantities of water flowing from the rivers so that electric energy and water may be provided for irrigation and industry.¹⁴

3b. Water Rechargeability

The alluvial plain of Bangladesh constitutes a huge aquifer with reasonably good transmission and storage properties. Heavy rainfall and annual inundation help the ground water to be substantially recharged. The first assessment of ground water was made in 1984. These estimates suggested that the available recharge of ground water was 21 BCM. More recently the National Minor Irrigation Development Project (NMIDP) developed models to forecast growth in minor irrigation through ground water using in less conservative assumptions for recharge than the MPO.

3c. Water Demand

In Bangladesh six sectors are the major users of water e.g. agriculture (for irrigation), domestic and municipal, fisheries, navigation, industry and environment (including salinity control). The National Water Plan of 1991 projected a water demand for all purposes for the year 2018 at 24,370 million cubic meters during the critical dry month of March, where the possible climate change has not been taken into consideration. The total supply of water from various sources for March 2018 was estimated at 23,490 million cubic meters-producing a short fall of 880 million cubic meters. The projected demand will be higher day by day due to population increase and economic growth.

14 *Everyone's United Nations* (1964), 7th edn, United Nations, New York, p. 534.

3d. Water Quality

Some surface and ground water sources may contain hazardous materials above their concentrations. This might be detrimental for human health if ingested directly. For drinking purposes over 97% using ground water is abstracted by shallow tube-well. In recent times, it has been reported that ground water contains arsenic and its concentration is above the safe limit of 0.05 mg/liter per liter in as many as 59 districts out of 64 districts.¹⁵ In many areas, especially southwest of the country, tube-well water containing iron and other metal ions concentrates at limits higher than the limits set by the Bangladesh Standard for Drinking Water Quality. The major causes of wide spread deterioration of the quality of ground water are natural sometimes influenced by human activities. Moreover, the main reasons for deterioration of the quality of surface water result in various human activities. Indiscriminate defecation in the open, discharge of untreated effluents from industry, misuse of agrochemical, discharge of oily-material from water born vessels and discharge of household and other wastes in streams are the main reasons. Poor water quality is hazardous for every living creature including human being. Aquatic species both flora and fauna are highly susceptible to pollutants in the water.

3e. Present Water Use

The overall aquatic environment of Bangladesh is highly dependent on spatial and temporal availability of water. Primary physical phenomena such as floods, fresh floods, low-flow conditions and tidal bores are all caused either by too little or too much water. All these factors have significantly adverse environmental impact. Smaller channels, wetlands, and ponds get dried up during low-flow

¹⁵ Dr. Mustafa Abdur Rahim: "Arsenicosis and its remedy", *The Independent*, Dhaka, 15 March 2002, p. 10.

conditions resulting in fragmentation of aquatic habitats and loss of bio-diversity. Low-flow also causes an increase in the concentration of pollutants of homestead, industrial and agricultural origin.

Furthermore, there are secondary physical impact on pollution caused by saline intrusion, and erosion. Increased soil and riverbank erosion and subsequent higher sediment load in streams can reduce primary production by obstructing sunshine. Enhanced sediment loads are affecting the Sundarbans.¹⁶ Tidal bores bring saline waters and cause an increase in the salinity of the soil and water systems in the coastal areas. Lack of fresh water flow in winter also increases salinity.

During dry months water concentration is reduced due to evapotranspiration and irrigation by ground water. As a result the small-scale water bodies become smaller. In such conditions, the concentration of various pollutants increases and the water bodies turn into breeding grounds for pathogens. During floods water-borne pathogens spread all around the flooded areas. The ownership of water vests in the state, the individual has only water use rights Bangladesh is facing shortage of well-defined water-use rights. The Agricultural Pesticides Ordinance 1971, was aimed to control import, manufacture, sale etc of pesticides. Bangladesh Environmental Protection Act 1995 asks for environmental release letter before the placement of industry. But it is not working properly.¹⁷

16 E. H. G. Dobby: *Monsoon Asia* (1961), Vol. V, University of London Press, pp. 247-248; L. Dudley Stamp: *A Regional Geography*, Part IV, Asia (1961), Longmans, p. 53.

17 The Agricultural Pesticides Ordinance, 1971 [(S 29A (2)(1) & 2(p) regulates the use of pesticides, The Environment Protection Act, 1995 asks for environmental release letter before the placement of industry. In a gazette notification. Government identified 903 industries as environment pollutants and asked for pollution control by three years, and notified that no industry should be placed without pollution control requirements. No effective steps were taken even after eight years of that notification. Subsequently, a writ petition was filed in the High Court Division of the Supreme Court of Bangladesh in 1994 as to pollution control for environment. See Dr. Mohiuddin Faruque v. Bangladesh, 49(1997), *Dhaka Law Reports*, pp.1-29.

4. Legal Regime

Partnership is meant to be a firm through which the aimed objectives in the interests of the parties are achieved. The notion water partnership is used by concerned states to denote their activities arising from the partnership in connection with the use of water.¹⁸ Global water partnership signifies participation of states in the distribution and utility of waters particularly of trans-boundary concerns. Bangladesh water matters are governed by the laws inherited.¹⁹ Moreover, the country has enacted laws to deal with water matters.²⁰ But those laws cannot meet the present needs.²¹ [The

18 *Everyone's United Nations* (1964), 7th edn. United Nations, New York, p. 8.

19 Bangladesh inherited the following laws which are more or less applicable to water matters. The Canal Act, 1864. The Irrigation Act, 1876. Penal Code, 1876, [Ss. 277,290,426]. The Criminal Procedure Code, 1898 [Ss. 386,387,389]. The Forest Act, 1927. East-Bengal Municipal Act, 1948. The Forest Act, 1950. The Protection And Conservation Of Fish Act, 1950. The Embankment & Drainage Act, 1952. The Town Improvement Act, 1953. The Inland Water Transport Authority Ordinance, 1958. The Ground Water Management Ordinance, 1958. The Private Forests Ordinance, 1959. The Prevention of Interference With Aids To Navigable Water Ways Ordinance, 1962. The Agricultural Pesticides Ordinance, 1971. The Development Authority (Formation) Act, [KDA:RDA:CDA:RAJUK].

20 The Laws passed by Bangladesh on water matters are as follows:

Statute of the Indo-Bangladesh Joint Rivers Commission, 1972. Bangladesh Water and Power Development Boards Order, 1972. Statute of the Indo-Bangladesh Joint Rivers Commission, 1972. The Bangladesh Fisheries Development Corporation Act, 1973. Territorial Waters and Maritime Zones Act, 1974. The Environment Pollution Control Ordinance, 1977. The Bangladesh Irrigation Water Rate Ordinance, 1983. Water Supply and Sewerage Authority (Amendment) Act, 1990. Water Resource Planning Act, 1992. The Environment Protection Act, 1995. Water Supply and Sewerage Authority Act, 1996. The Environment Protection Act, 2000. Bangladesh Water and Power Development Boards Order, 2000. Furthermore, there are several laws on water matter for RAJUK,CDA,RDA and KDA and with the passage of time more and more laws are coming into being.

21 The laws inherited and framed by Bangladesh are exclusively applicable to its people within the territory. Water partnership regards the riparian state cannot be concerned only with its own needs, practically, the concerned riparian states must be related. As such, one's whether inherited or self-framed have limitations to keep pace with scientific and technological developments. The country is required to frame and adapt laws as per needs-territorial, regional and global.

country is now in need of legislating on water partnership.] Water use matters are interdependent. Therefore, water use rights should boost national interests in compliance with global, regional and sector-level uses.

4a. National Perspective

Exponentially growing population and ever increasing demand for irrigated agriculture, urbanization and industrial development are placing more burdens on water. At the same time human intervention in natural flow of river is upsetting the ecological balance. Man made structures created on river courses and uncontrolled water extractions are the two prominent factors.

Over the last three decades, use of ground water in Bangladesh has increased tremendously in the absence of its development. At present ground water accounts for 73 per cent of the country's total consumptive water use. Almost 95 per cent of the drinking water is derived from ground water sources. Mining of ground water has already started in some places. It is said that ground water utilization has almost reached a saturating point in the country. In the southwest region of Bangladesh, the ground water is being increasingly contaminated by salinity. Overexploitation of ground water is lowering the water table down to irrevocable levels. In consequence, ponds, tanks, beels, khals, streams, and other water sources and reservoirs are being dried up and water supply to meet the needs are also being impeded. Recently, the problem of arsenic contamination of ground water to catastrophic proportions has been detected largely in the country. Arsenic hazard has been a threat to public health.

The main source of irrigation water in recent years has been ground water (68.5 per cent) in 1996/97. In effect, it reduces the ground water level in dry season. Boring depths of shallow tube wells (STWs) should not be within 10 to 20 meters, because it is the root

zone of the trees. Too much water extraction from this zone will be an act of indirect deforestation. The National Minor Irrigation Development Project (NMIDP) suggests for setting STWs at progressively greater depths. A significant reduction in the use of ground water for irrigation is possible without adverse impact on productivity of crops by some agronomic measures.

Fast growing urbanization has compounded the problem of water supply, sanitation and drainage. The current status of water supply in urban areas in Bangladesh is much below the norm. Most of the urban areas as well as villages face an additional health risk from high arsenic content in ground water. Rainwater harvesting can meet a portion of the total water supply demand but there is lacking in taking steps for such use of rainwater.

Water supply projects in Bangladesh are largely biased in physical facilities. Little attention is paid to cost recovery despite the operation and maintenance of the existing facilities. The consequences are low levels of maintenance, inefficient consumer services, leakage, wastage and pilferage through illegal connections.

Urban sanitation status is even more critical. Water borne sewerage has been introduced only in parts of Dhaka. Elsewhere there is general use of unsanitary latrines, direct disposal of sewerage in open spaces, and to a limited extent pit latrines and septic tanks. The rural sanitary situation is very unsatisfactory. Limited sewerage systems and waste disposal facilities coupled with rapid urbanization will continue to aggravate the problem of sanitation. But slow flow and salinity have reduced the navigability of many channels. As time passes, classified routes are losing the Least Available Depth (LAD) to promote inland navigation. Periodic dredging is required to retain minimum stream flows and restore the required draught for different categories of vessels. Certainly, designed morphological studies would be helpful to establish a sustainable inland water transport regime.

Our National Water Policy, Integrated Water Management Programme, and Bangladesh Water Vision, 2025 are taking innovative steps to meet the challenging demand for water in the 21st century and to make a sustainable water network for the country. Practically speaking, the existing laws and regulations relating to water, water rights, users responsibilities, water licensing and administrative aspects are not adequately enforced.

The principal legal inadequacy is the lack of a comprehensive legal framework relating to water, water and drainage rights and the facilities for the upholding of those rights. The gaps in laws have to be filled up to make it updated and, at the same time, a pragmatic enforcement mechanism must be evolved. Therefore, it is essential to revise and consolidate the existing laws governing the ownership, appropriation, utilization, exploitation, development, conservation and protection of water resources.

4b. Global Perspective

It is not to contradict navigation as the only one of the uses of rivers of trans-boundary concern. Other long established uses are irrigation, water mills, water supply for domestic and industrial purposes, fishing and timber floating, while in the ongoing hydroelectric exploitation of rivers has become of outstanding importance. At present a considerable volume of treaty- practice by which riparian states have regulated their interests in particular rivers and which is not reconcilable with the view that a riparian state is legally free to do anything that it pleases with the water of an international rivers.²² Post-war treaties and negotiations concerning the Nile, the Jordan, the Indus, the Mekong, the Colorado, the St.

22 A river is purely "national" which lies wholly from its source to its mouth within the territory of one and the same state. But those rivers which have been called "boundary rivers" and not "national" rivers, are not owned by one and the same state but two or more states. An international river is typed as a river the navigation of which has been declared free and open to the vessels of all nations and placed under some form of international guarantee. H. Lauterpacht (ed): *Oppenheim's International Law- A Treatise-II*, 7th edn. (1952), Longmans, p. 772.

Lawrence river as well as other rivers and arbitration between France and Spain concerning the waters of Lake Launox appear to confirm that some broad principles of international river law have come into existence.²³ These broad principles are:

- i. Where a river system drains the territories of two or more states, each state has the right to have that river system considered as a whole and to have its own interests taken into account together with those of other states;
- ii. Each state has in principle an equal right to make the use of the water within its territory, but in exercising this right must respect the corresponding rights of other states;
- iii. Where one state's exercise of rights conflicts with the water interests of another, the principle to be applied is that each is entitled to the equitable apportionment of the benefits of the river system in proportion to their needs and in the light of all the circumstances of the particular river system;
- iv. A state is in principle precluded from making any change in the river system which would cause substantial damage to another state's rights of enjoyment without that other state's consent;
- v. It is relieved from obtaining that consent however, if it offers the other state a proportionate share of the benefits to be derived from the change or other adequate compensation for the damage to the other state's enjoyment of waters;
- vi. A state whose own enjoyment of the water is not substantially damaged by a development in the use of a river beneficial to another state is not entitled to oppose that development.²⁴

23 Sir Humphrey Waldock (ed): J. L. Brierly *The Law of Nations*, 6th ed. (1963) Clarendon Press, Oxford, pp. 231-232.

24 H. Lauterpacht (ed): *Oppenheim's International Law-A Treatise-II*, 7th edn. (1952), p. 772; J.G. Starke: *An Introduction to International Law*, 7th edn. 1972. Butterworths; pp.207-209; Charles G. Fenwick *International Law*, 4th edn. (1975) pp. 461-466. Sir Humphrey Waldock (ed): J.L. Brierly *The Law of Nations*, 6th edn. (1963), pp. 227-232; K.R.R. Sastry: *Studies in International Law* (1953), E.L.II. Calcutta, pp. 156-160; George W. Keeton & George Swarzenburger (eds) : F.J. Berber *Rivers in International Law*, 46 (1959), Stevens & Sons, pp.138-157.

The Ganges, the Brahmapatra, and the Meghna are the principal trans-boundary rivers for Bangladesh and India. The Ganges water issue seems to have been settled through the Ganges-Treaty (1996). Legally the treaty enables to say that Ganges water share is not a matter of a single state's exclusive jurisdiction. Since this treaty, both the countries are under an obligation to comply with the treaty.²⁵ It accelerates objectives of water partnership and, from this point of view, the two countries can be regarded as promoting 'water partnership' in their interests. Virtually, its goal should aim to promote the interests of riparian regions as the heritage of river bounties. The Rio- 1992 principles on water and environment will then be rewarding to the flora and fauna.²⁶

Although internal rivers are in the sway of the riparian states but practically, there is a need for the lower riparian state to come forward to the upper riparian state for sue of waters to meet their needs. The upper riparian state should not be of the view that it is the sole arbiter to use and control waters within its territory. There seems an obligation for the upper riparian state to look rationally at the needs of the lower riparian state. There is nothing to question that from the geographical point of view, the upper riparian state is more or less in a favourable position. But all riparian states should think

25 Bangladesh-India :Treaty on Sharing of the Ganges Waters at Farakka [Done at New Delhi, December 12, 1996, 4 cite as 36 [L. M. 519 (1997).]

26 The extracts of the Rio Declaration on Environment (1992) (Principles 2 & 6) deal with the position of states as regards environment and the needs of the least developed and those environmentally vulnerable.. According to **Principle 2**: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction, and according to **Principle 6** : The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

themselves to have come into existence as a single community of river bounties. Eventually, it is the heritage of the riparian. It enables to come to a point that all riparian states whether upper or lower should assert their claims to use river waters not only for self interests but also must look at others interests rationally and equitably. One's necessity seems to be the greatest to him; it would be rational and equitable if it takes into account others necessity as the greatest equally.

To deal with "water partnership" in respect of the boundary and trans-boundary rivers, needs arise to promote justice by the rule of law, principles of equity and good conscience together with the distributive principles of social justice.²⁷ It then cannot be contradicted that the big and powerful state has an obligation to contribute to the greatest extent. With the achievement of social justice the needs as to water partnership for the states can be met. The objectives of social justice will be attained if it can ensure benefit to all taking into account some liberal treatment to the unprivileged.²⁸ Ultimately, its goal will result from the rules and principles of international law. Emphasis should be given on Art. 33 of UN Charter to settle dispute amicably. Inevitably, it is to mention that inter-state matters are required to be adjudged by the principles of international law, convention, judicial decisions and state practices.²⁹

5. Conclusion

There are a number of enactments, statutes and ordinances etc. that govern surface and ground waters of Bangladesh for use as to

27 Asma Jahangir: "Distributive Justice", *The Independence of Judges and Lawyers* (1989), International Commission of Jurists, Geneva, pp. 65, 70.

28 Justice Ranganath Mishra: "Distributive Justice", *The Independence of Judiciary* (1990), International Commission of Jurists, Geneva, p. 34.

29 Statute of the International Court of Justice, Art 38.

agriculture, domestic use, industrial use, navigation, hydro-power, fisheries and all other matters. Provisions of the machineries are effective within their own territory. Needs arise to provide more provisions to fit the present changing situations caused by climate changes, droughts, environmental hazards, arsenic contamination, rising of sea-level and so forth. Pursuant to these situations, there is a need of scientific data of all concerned so that it can help enrich a data base study about 'water partnership'. This sort of substantial study will promote a stable regime if the riparian states are empirically rooted in joint survey for getting the data. In essence, it will enable to take measures for the long-term viability of "water partnership". Regarding "water partnership" the Ganges Treaty may be considered as one of the bases to promote it regionally. But care must be taken to ensure interests of the states relating to the "water partnership" for Bangladesh and its neighbours. Generally, it is required that "water partnership" be enriched by all riparian States without discrimination as to geographical position, scientific, technological and socio-economic development. But needs must be met for one surrounded by inevitabilities. That is to say, the least developed and most the environmentally the most vulnerable and geographically disadvantaged Bangladesh should be privileged and accommodated through the norms of equality, rationality and equity.³⁰ As to ongoing changes all over the world, it is reiterated that the 21st century will go ahead with the innovation of new doctrines to harmonize the needs for all. In fine, there are urges for "global water partnership" in letter and spirit that "river bounties are the common heritage of the riparian".

30 To be acquainted with the term "geographically disadvantaged state" see United Nations Convention on the Law of the Sea, 1982, Articles 69 & 70.