

## **Issues on Water Resource Management, Development and Politics: A Case Study of the Ganges and Brahmaputra Basins – its Present Dimensions and Future Scenario**

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The development as well as management of water-resources is now a complex issue and has been exceedingly well conveyed by the scholars, researchers and subject experts which goes to show a remarkable inclination to deal with the issue from diverse and multifaceted angles. This is perhaps so because of its records, as has been suggested, as one of the most valuable items of life as well as its significance as an item of modern urbanisation, change of life style and above all distinct shift of its right from community ownership to state ownership. This situation has again changed the traditional perception about water and when it is treated as an item of human rights it is no less identified with economic goods. But, water as an essential item of our life, has brought many problems involving our society, economy and political life and thus it becomes sometime a resource and another time a source of conflict and commotion.

Keeping in view the whole proposition stated above, as to the significance of water, we may look at the dispute over sharing of water of the Ganges and the subsequent events which dominated the political atmosphere of the subcontinent over a few decades.

To be precise, the main thrust of the present paper would be to review the standing problem of sharing water of the Ganges, the genesis of the Farakka Banrrage and the subsequent politics that dominated and still dictate the Indo-Bangladesh relations. Add to this, there would be an attempt to explore a few relevant points as to the feasibility and viability of the 'Garland Canal', plan of the Previous National Democratic Alliance (NDA) Government, which has been directed to link up the rivers of Eastern and North-Eastern India with the Southern rivers in order to divert surplus water to South India.

The dispute on the sharing of the Ganges water had its origin right from the partition days. Britain left India divided and the division also split the river system of the subcontinent. As a matter of fact, when these two parts of independent states took up various plans of development, it related water resource of the rivers lying within their territories, disputes came up as inevitable circumstances.

It may be noted that the dispute centering the Ganges, Teesta and other eastern rivers has been originated and intensified by some common factors arising out of the geographical situation and historical tradition of India and Bangladesh (previous East Pakistan). It has been aging largely undetermined by the international politics. The partition of India brought to light among other events, communal tension, bloodshed and extreme hatred between the two communities Hindus and Muslims of the subcontinent. Its nature and volume varied time and again, but it failed to lessen the feeling of distrust and animosity of the said two communities. We know, after about 24 years of birth of Pakistan, the eastern part of Pakistan emerged as Bangladesh but the conflict between this new nation and India has remained as ever. The water of the Ganges flowing into Bangladesh through West Bengal constituted one of the vital factors to

create problems between these two neighboring countries over a couple of years.

If we look at the map of the region, it shows that India, Nepal and Bangladesh (previously East Pakistan) are the three main co-riparian on the Ganges. Various irrigation projects as well as developmental schemes were taken up with the help of this water resource within Indian part even before 1947. Bangladesh or East Pakistan as a lower co-riparian, also undertook plans and projects with the help of the natural flow of the Ganges even from the pre-partition days. But the problem came to a front when organised and planned irrigation programmes were taken up by its Government after partition.

It is admitted that the river Ganges is one of the many popular rivers around globe and it has risen at an elevation of about 23,000 feet in Gangotri in the southern slope of the Himalayan range. This is, however, considered as the extreme northern limit of the Ganga basin. Along the boundary, there are three mountain peaks namely Mount Everest, Kanchanjanga and Makalu. From its origin, the Ganges flows in a south-easterly direction and in its further down-stream it takes easterly movement through India and thus touches the border of present Bangladesh. There are other rivers as its tributaries namely Gandak, Kosi and the Gharghara flowing down from Nepal together and contribute about 41% of the annual flow and about 71% of the dry season flow of the main river. The river Bhagirathi-Hooghly on which Kolkata, the port town is situated, takes off from the south bank of the Ganges – a short distance of a point when it enter Bangladesh. It thus forms a boundary of these two countries for a distance of about 80 miles and when it comes to Bangladesh it flows for another 70 miles before joining Brahmaputra–Jamuna at Goalando. Below the point of Farakka, there are another two leading tributaries namely the Mahananda and Atrai both of which cover a considerable areas of India and Bangladesh. The combined course of the Ganges and Brahmaputra-Yamuna takes its name as the padma which flows further down with its name Meghna at Chandpur, Bangladesh. It may be noted that from this point, the combined course (i.e., of the three rivers) continues to a little further and takes its name as Lower Meghna before falling into the Bay of Bengal.

It may be recalled here that, the independence of India introduced a new political geography in South-Asia. We have seen in a divided political geography, India and Bangladesh (previously East Pakistan) emerged as two sovereign authorities of the Ganges. India became the upper riparian country while the other one the lower riparian. Quite near the point of bifurcation of the flow the Ganges falls into the Bhagirathi-Hooghly and the Padma, the boundary point bifurcating the two neighbouring states, goes across the Bengal delta. The Hooghly, as the condition stands, falls within the Indian side. The Kolkata port and the Hooghly's problem in its navigation route, came within the consideration of the Government of India.

In the early 50s, the Central Water and Power Commission located at Poona carried out a model of the Hooghly's problem.<sup>2</sup> In 1952, the Indian Government constituted a committee of experts under the chairmanship of Man Sing to assess the effects of the Damodar Valley Corporation<sup>3</sup> (DVC) and the Ganga barrage scheme on the river Hooghly specially within the port limits. The committee investigated the matter and finally concluded that any reduction in the upper tributaries of the flow of the Bhagirathi would bound to have adverse effect on the Hooghly. In fact, during the said investigation there was an attempt to find out measures of solution to the Hooghly river with reference to the Ganga-barrage scheme.

In 1957, Prof. Dr. Walter Hansen, a well-recongnised hydraulic engineer of west Germany, was entrusted by the Government of India as a consultant to look into the Hooghly's problems.

According to his observation “the best and only technical solution of the problem is the construction of a barrage across the Ganges at Farakka with which the upland discharge into the Bhagirathi-Hooghly can be regulated as planned and with which the long-term deterioration in the Bhagirathi-Hooghly can be stopped and possibly converted into a gradual improvement... The water supply of the city of Calcutta and its industrial areas will be improved by reduction in salinity... The drainage capacity of the Bhagirathi and the upper Hooghly will be improved and flood hazards in the catchment area will be reduced and sanitation and public health will be improved”.<sup>4</sup> This statement in fact served the sole purpose of legitimization of the Farakka barrage by a foreign expert.

To this scheme of India, Pakistan at that time expressed its concern as it was supposed to be a threat to its vast economy dependent on the river Padma. In order to investigate the Hooghly’s problem, the Govt. of Pakistan appointed two American experts namely Prof. T. Ippen and C.W. Wicker to investigate it thoroughly. They observed no evidence of decrease of fresh water flow in the Hooghly at least in the last 15 years. They even recorded views that the salinity condition of the Hooghly increases because of the flood discharge and controlled fresh water floods from the Damodar and Rupnarayan, another two leading rivers of the region. They finally concluded that the diversion of the fresh water into the Hooghly would not contribute in any way to move the standing problem rather likely to aggravate the shoaling problem. In another conclusion, they observed that the expected economic benefits from the barrage was based on some vague ideas in view of the cost of the project.<sup>5</sup>

This statement and conclusion was also voiced by the Indian experts. Amongst other, we may mention here Kapil Bhattacharyya, a reputed hydraulic expert of India who doubted the efficacy of the Barrage to face the challenge of the silt load. He early pointed out that the drainage problems of the two important tributaries, the Rupnarayan and the Damodar, rooted in the plan of the damodar Valley Corporation (DVA). He observed that because of this project the flushing action of the Hooghly became depressed.<sup>6</sup> In fact, the experts had the opinion that the salinity condition of the Hooghly increased due to flood discharge and controlled fresh water flows from the Damodar and Rupnarayan rivers. Their final conclusion was such that the diversion of the fresh water into the Hooghly river would never contribute to the solution of, but was likely to accelerate the shoaling problems. They also calculated and concluded that the economic benefits from the Barrage were not as per expectations in view of the cost of the whole scheme.<sup>7</sup> The experts were also not unanimous in their opinion as to the exact prospect and nature of the maladies which affected the Hooghly river and the manner in which the mode of solutions were sought. Notwithstanding, the Government of India took the scheme of Farakka Barrage and thus it shows that the dispute between India and East Pakistan. (now Bangladesh) over the project had its origin in the unilateral decision taken by her. But it may be noted that this decision to ‘go ahead’ with its programme of the barrage caused misunderstanding and resentment amongst the Governments and people of these two neighboring countries. It has embittered the bilateral relation and has created an unwanted situation affecting the progress and well-being of the regions where many people live below the subsistence level. The era of politics centering the Farakka issue has started, in fact, immediately after the partition and various steps have been taken up to sort it out. But what appeals most is that nothing concrete has been done so far and as a result the problem that arose over the Farakka Barrage issue has been proved to be intractable. The following part of our study is devoted to initiate a short but analytical discussion on it. It is, however, a matter to bear in mind that the era of politics centering the Ganges water began in the

subcontinent immediately after the partition.

For more than fifty years now negotiation and deliberation at various levels have been taken between India and Pakistan or after 1971, Bangladesh over the issue. But surprise to all, till date no permanent solution has yet been found. It is a fact that the communications on this issue were made since 1951, no unanimous decision was there between these two countries till 1960 to discuss the matter in a joint sitting. It is being found that in between 1960-70 there were at least ten meetings at the expert and secretary levels to sort out the problem under consideration.

With the 3<sup>rd</sup> secretary level talks at New Delhi dated July 12-26, 1969, Pakistan began to push for a package deal to grant a fixed amount of water to East Pakistan and also to formulate ways and means for the implementation and implication of the agreement. From this record it shows that Pakistan proposed an agreement on the following conditions which would provide: (a) "guarantee to Pakistan of fixed minimum deliveries of the Ganges water on a monthly basis as an agreed point; (b) (for) construction and maintenance of such works, if any, in India as may be necessary in connection with the construction of the Ganges Barrage in Pakistan; (c) (for) setting up of a Permanent Ganges Commission to implement the agreement and (d) (for) machinery and procedure for settlement of differences and disputes consistent with international usage".<sup>8</sup> India, however, did not welcome these proposals on the plea that as the exchange of documents between India and Pakistan was not complete, there could be no talks to divide on the question of delivery of water into East Pakistan. India's stand for Pakistan's proposal created stalemate in any discussion on the issue but India proceeded further with a hope of solution.<sup>9</sup>

The fifth meeting of Indo-Pakistan talk on Farakka issue was held among the secretaries at New Delhi (July, 16-21, 1970). It was only agreed that the point of delivery of water into east Bengal would be at Farakka itself and that a high level body would be formed of one representative of each country to ensure delivery of water. The amount of water was to be decided later.<sup>10</sup> This was incidentally the last meeting in the Pakistan period and decision could not be taken up due to the internal problem of that country. The Farakka issue was not raised till 1973 and by this time India made considerable progress of the construction of the barrage.

The formation of a Government by the Awami League brought new hope and both the Governments felt for a concrete solution over the dispute. The most important step in this matter was, taken in 1972 when the Prime Ministers of India and Bangladesh agreed to establish a Joint River Commission comprising the experts of both the countries. The main purpose of this body was to "carry out a comprehensive survey of the river systems shared by both the countries in the fields of flood control and implement them".<sup>11</sup> During Mujibar Rahman's visit to Delhi in May 1974, the question of Farakka figured in the bilateral talks and the two Governments agreed that the issue should be resolved in such a way that the interests of both the countries were taken care of.<sup>12</sup> The two sides also expressed their firm support on a mutually beneficial agreement before the Farakka barrage was completed in 1975. But differences soon arose over the question of the augmentation of the fair water flow of the Ganges. Bangladesh proposed augmentation through storage in the Ganges basin, while the Indian proposal included augmentation of water through diversion of water from the Brahmaputra by excavating a 200 mile link canal to the Ganges and the construction of dams in the Brahmaputra basin at Dihang and Subansiri (Assam).<sup>13</sup> But this Indian proposal was not accepted by Dhaka on the ground that the 'diversion of the Brahmaputra water during the lean months would cause adverse effects on its downstreams and the excavation of a line canal (through Bangladesh) would cause problems in Bangladesh'.<sup>14</sup>

Crucial lean months period (mainly March-April of a year) thus blocked any progress towards a positive solution of the problem at stake. But that was not the only reason. It was also argued that since the two countries also had a disagreement over the amount of water to be discharged into Bangladesh, the matter involved with the interest of the country as a whole. During the dry season the average discharge below Farakka was estimated to be only 55,000 cusecs (cubic feet per second). India at this point maintained that it needed only 40,000 cusec of water to flush the Hooghly river, leaving the rest for possible use by Bangladesh. But Bangladesh demanded the entire amount of 55,000 cusecs during the dry season to flush the Padma, which flows out of the Ganges further downstream into Bangladesh.

On April 16, 1975, the ministries in charge of flood and control, Governments of India and Bangladesh met at Dhaka to find out all possible solutions. A stopgap solution was found that saved India from the possible embarrassment of commissioning the dam without an agreement with Bangladesh. This led to a signing of an agreement on April 18, 1975 at Dhaka provided for the running of the Farakka barrage from 11,000 to 16,000 cusecs ensuring the continuance of the remaining flow for Bangladesh. The flows were calculated as under:

**Amount of Water to be shared between India and Bangladesh (in cusecs)**

<b>10 day period</b>	<b>Dependable supplies at Farakka</b>	<b>Amount agreed upon for the Hooghly river</b>	<b>Remaining flow for Bangladesh</b>
21.4 to 31.4 (1975)	55,000	11,000	44,000
1.5 to 10.5 (1975)	56,500	12,000	44,500
11.5 to 20.5 (1975)	59,250	15,000	44,250
21.5 to 31.5 (1975)	65,500	16,000	49,500

**Source:** The Joint Indo-Bangladesh Press Release of 18.4. 1975; White Paper on the Ganges Water Dispute, Govt. of the People's Republic of Bangladesh, P. 165; Basic documents on Farakka conspiracy from 1951-1976, Dhaka, 176, p. 81. and also deadlock of the Ganges, Govt. of People's Republic of Bangladesh, September 1976, p. 2.

It thus shows that the Bangladesh side had enjoyed considerable concessions from India. At this stage Bangladesh had no other alternative but to withdraw its demand for the entire 55,000 cusecs and satisfied with 44,000 cusecs which were to be progressively increased up to 49,500 cusecs. The agreement also hinted at appointment of joint teams of experts from both countries and monitor the effects of the withdrawals at Farakka on Bangladesh. The agreement expired on May 30, 1976, and until this was replaced by another agreement expected to be drawn on September 30, 1977, India unilaterally withdrew 40,000 cusec of water at Farakka. Several times, Bangladesh protested to India as it was to them an illegal action.

A change in the situation of cooperation and collaboration between India and Bangladesh came in on August 15, 1975, when Sk. Mujibar Rahman's Government was overthrown by a military coup. The assassination of Sk. Mujibar strained India's relation with Bangladesh and new phase started in the politics of the sub-continent. Bangladesh continued its endeavour to set India to the conversation table, but these efforts of Bangladesh utterly failed. At this stage Bangladesh found no alternative but to internationalise the Farakka issue.

In May 1976, Bangladesh brought the Farakka problem at the Istanbul Islamic Minister's

Conference, which in its joint communiqué 'expressed deep concern over the problem of equitable distribution of water of the international river Ganges resulting in the aggravation of economic hardship and retardation of the process of national construction in Bangladesh'.<sup>15</sup> Bangladesh again took the matter at the Summit Conference of the Non-Aligned Countries in Colombo in August 1976. But it was of no use. Then the case was raised at the 31<sup>st</sup> session of the UN General Assembly and a month later Bangladesh issued a white paper enumerating the adverse consequences of the Farakka Project of India on Bangladesh economy, navigation ecology, health and so on. In November 1976, the leader of the Bangladesh delegation at the Un communicated the General Committee of the 31<sup>st</sup> session of the UN General Assembly that the 'unilateral withdrawal' of the Ganga water by India had badly affected the welfare of 25 million people of their country and was enough to harden Indo-Bangladesh relation. Incidentally, it was the first time when Bangladesh brought an issue to the UNO against India.<sup>16</sup>

Mrs. Indira Gandhi's defeat in the Indian Parliamentary election of March 1977 led to the formation of a non – Congress Government at New Delhi. Within three weeks of assuming power, the Janata Government under Morarji Desai sent Jagjiban Ram to Dhaka and an 'understanding' was reached between India and Bangladesh. This understanding led to the conclusion of a comprehensive 5-year agreement on Farakka in New Delhi on September 30, 1977. It was however formally signed in Dhaka on November 5, 1977. The agreement provided for withdrawal from April to May 30 at the rate of 20,800 cusecs and 34,700 cusecs (working out at 37.5% and 62.5% respectively) of the minimum flow of 55,000 cusecs at Farakka.<sup>17</sup> Article IX of the agreement empowered the Joint River Commission to investigate and study various schemes of augmentation of the Ganges water during the lean months. The JRC was asked to submit their own proposals and these were exchanged at Dhaka on March 25, 1978.

The two proposals which were accepted formulated both parties earlier stands on the Farakka issue, Bangladesh wanted to augment the dry season flows of the Ganges by conserving its monsoon flows through storage dams in Nepal and India. Such a plan could necessitate Nepalese participation which India ever refused to accept. Instead, India adhered to its original proposal of digging a link canal 'from the Brahmaputra, Assam and touch the same at the upstream of Farakka on the Ganges'.<sup>18</sup> From the Bangladesh side, it was expected to benefit India and Bangladesh immensely. Moreover, it was also directed to give Nepal a water outlet to the outside world. It was held that 'water stored in Nepal during the monsoon season could be released in the Ganges through natural channels. Also if a canal is built along the low-land Terai in Nepal, water could be delivered from the Gandak and Kosi rivers into the Mahananda in India's West Bengal and into the river Karotoya and Atrai in Bangladesh. Not only would then flow of these waters be augmented but a waterway will be created, giving landlocked Nepal an outlet through Bangladesh into the Bay of Bangladesh'.<sup>19</sup> Bangladesh's proposal and demand to include Nepal in the talks was 'grudgingly agreed to' by the Janta Government. But when Indira Gandhi came back to power India summarily rejected Bangladesh's proposal to associate Nepal in any talks in terms of augmenting the flows of the Ganges river. High level talks and deliberations were made during Zia-ur-Rahman's visit to New Delhi in late 1977, 1979 and again in 1980. But all these endeavors failed to change India's decision.

Before the interim agreement of 1977 was to expire on 4 November, 1982, a three day talk was held before the date in Delhi between the Prime Minister of India and the Chief Martial Law Administrator of Bangladesh Mr. H.M. Ershad on 6-8 October 1982 when the latter visited India. At the end of the New Delhi talks a joint communiqué was issued when both sides decided

not to extend the 1977 interim agreement but to initiate fresh attempts towards concluding a permanent settlement, an initiative once again to be completed by the Indo-Bangladesh Joint River Commission within 18 months. In this context, a new and positive step was that the leaders agreed at least in principle to confer the final decision making authority upon the Joint River Commission.<sup>20</sup>

The Indo-Bangladesh Joint Communique of October 1982, provided for varying quantum of discharges at Farakka for each ten day period and it was entirely different from the previous one in which the division was made on a monthly basis. The discharges agreed upon for the first ten days of January were 40,000 cusec for India and 58,500 cusecs for Bangladesh. The quantum would be reduced progressively with the advancement of the dry season until the last 10 days of April when the respective shares for the two countries would be 2000 cusecs and 34,500 cusecs respectively.<sup>21</sup>

During 1983-84, the Joint River Commission met several times to find a permanent solution of the long standing problem but nothing precise and concrete could be achieved. Later on 22.11.1985, Indian Government and that of Bangladesh signed a 'Memorandum of Understanding' on the sharing of the Ganges dry season flow for the next three years (1985-88). It was also agreed that the joint committee of experts would delve into the matter and would draw up suggestions within one year and then the mechanism to be taken up to augment the flow of water during the dry season. In fact, the committee utilized the whole of the year 1986 and in some situation negotiated with Nepal Government but nothing could be done within the specified year in time.<sup>22</sup>

Thus till the year under consideration, no permanent solution was sorted out. In 1987, the routine meeting of the Indo-Bangladesh Joint Commission scheduled to be held in August was cancelled. Upto the month of May 1988 when the Memorandum of Understanding was to expire, the Joint Commission was not revalidated.<sup>23</sup> Under the situation the then Indian Prime Minister Mr. Rajiv Gandhi informed the Rajya Sabha as to taking a tough line to deal with the water dispute question with Bangladesh. But so far as the Ganga-water dispute (i.e., Farakka Barrage Problem) was concerned, no fruitful attempts could be taken up and as a result the Farakka issue remained as elusive as ever.

But the matter did not stop there, initiatives have been taken to find out solution. In this regard, the signing of the Treaty between the two Governments on the sharing of water of Farakka on 12<sup>th</sup> December 1996 ushered a new era of operations in water resource sector.

The signing of the Treaty has generated tremendous goodwill between the two countries at least for a time being. Secretary level contacts and the Minister level contacts through the Joint River Commission (JRC) are also made from time to time between both the Governments.

Since the signing of this Treaty in December 1996, sharing of the lean season (January to May) flow of Ganga Water at Farakka during 1997, 1998, 1999, 2000 and 2001 has been carried out to the satisfaction of Both India and Bangladesh. The same is under progress for the year 2002 also.

A Joint Task Force for Flood Management in the Ichhamati Basin has been set up to formulate an Action Plan for tackling such flood calamities jointly in future and to submit it for consideration for JRC.

This is to be recalled here that the people of Bangladesh are predominantly agrarian

people and naturally they have their deep concern since the 1951 on the issue of India's Farakka plan. This concern became much more predominant after the independence of the country in 1971. It gradually turned into an issue related with the sense of nationalism. This particular factor is corroborated by various other issues which are not relevant here. But it is suffice to say that the Farakka along with others were sufficient to dictate the Indo-Bangladesh relation. Public opinion became very much touchy on this issue and Awami League Government had to face criticism for its alleged lenient policy towards India during its short tenure of office. India on the other hand, being a part of Farakka issue took comparatively a rigid and uncompromising hard line. So what India had tried or achieved at the negotiation table created problems in terms of its implementation. India thus failed to find out any solution either by negotiation or by diplomatic means.

When the prevailing situation of India stands as such she has also taken up another enterprise to find a solution about the water crisis of South India. It is called 'Garland Canal' Programme. According to this scheme within next ten years i.e., 2012, all the major rivers of India will be interlinked through canals and as a national policy of economic development, all parts of India will enjoy the best possible facilities of irrigation. As a background of this plan it has been envisaged that as the rivers of Eastern and North-Eastern India have enough water in the monsoon and cause floods in most of the seasons, the only means to save the situation is to divert the water to the South India which has been suffering from draught and acute crisis of water almost throughout the year. Thus the floods of the eastern and North-Easterns India may be checked and at the same time the surplus water might be utilized for irrigation and other purposes of the southern states. The plan as it stands shows that the water of the Brahmaputra would be brought to the Mahanadi through the Ganges and thereafter it will be linked up with the Cauvery through a long canal. This particular decision has been given shape by the supreme Court of India in the light of the New Water Policy of India announced on 1.4.2002. Thus, it has been resolved that the water resources of India will have to be centralized under a particular authority in order to make it an item of national planning. The Honorable President of India Prof. A.P.J. Abdul Kalama is said to have indicated the matter in his speech of the last Independence Day 2002, and the matter has been referred to the National Water Development Agency (NWDA). In fact, this is the single institution under the Ministry of Water Resources to implement decision of the Government of India under the jurisdiction of the Hon'ble President of India. Incidentally, the former Prime Minister of NDA Govt. A.B. Bajpaie also had taken interest in this matter and he seems to have taken initiatives about it from last October 2002.

According to this plan, there will be change in the geographical map of India when the rivers of India are expected to be linked with some canals named 'Garland canals' and from the Brahmaputra of the North-East to the Cauvery of the South, and this will bring a huge amount of lands under cultivation besides, serving various essential purposes of the people of the region. There is also a plan to generate hydroelectric power to meet the growing need of the people.

The plan as it is being said seems to be no doubt appreciable and so far as the fast growing population, draught and food crisis are concerned, it is a need of the hour. But the feasibility and viability of the scheme is not above question. In fact, it reminds us almost the same proposal of about e decades also when there were two schemes of such nature namely the Garland Canal of Dinshaw J. Dastur and the National Water Grid Plan of Dr. K.L.Rao. The first one project envisaged linking of the Ganga-Brahmaputra by a 4,800 long Himalayan canal and the rivers of Peninsular India by a 10,440 km long central and southern canals. It was expected

to have 100 million acre feet of reserve capacity for flood water influx and to discharge to all the scarcity areas of India.<sup>24</sup>

The Primary objective of the National Water Grid of Dr. K.L. Rao was expected to provide water for the draught-prone areas which were spread all over different parts of the country.<sup>25</sup> Amongst various links<sup>26</sup>, the Brahmaputra-Ganges and the Ganga-Cauvery link were the most important factors of this plan. The first one was to provide a big canal of about 200 miles from Dhubri (Assam) to a point upstream of Farakka to link the Ganges with the Brahmaputra for diverting the flow of the Brahmaputra to the Ganges specially in the dry season.<sup>27</sup> In the Ganga-Cauvery link it was expected to lift 17,000 cumecs (i.e., 60,000 cusecs) of the water from the Ganges by constructing a barrage near Patna. Of the volume pumped 10,000 cusecs would have to be supplied to the draught-affected areas in South Bihar and South Uttar Pradesh. 50,000 cusec would have to be pumped for 150 days or more during the flow period to divert outside the basin to the draught prone areas of Rajasthan, Gujarat, M.P., Maharashtra, A. Pradesh, Karnataka and Tamilnadu.<sup>28</sup>

All these plans were considered to be very much urgent for India for boosting up agricultural productions in view of feeding the rapid growing population and also to avoid the import of food from outside.

All the schemes, plans, etc. appear to be sound and essential for India, but in the context of big plan primarily for irrigational and economic development they have other implications. These schemes were criticized so far as its viability were concerned and this can be ascertained at least by the observations of B.B. Vohra, Secretary of Govt. of India, Dept. of Petroleum (1980) who delivered a lecture on the proposed schemes and while comparing between India and China system, he said, it was better to take care of the other sectors like land management, afforestation, ground water development etc. rather than irrigation. By a severe criticism of the Indian plans of irrigation, he once described the policy makers of irrigation department as the dreamers of Garland Canals, Water Grid and other similar fantasies.<sup>29</sup>

To conclude and to analyse the whole matter in the light of our above discussion, we may look in to the problem in the following way:

It is a fact that in order to solve the long standing problem of water crisis of India, the Government of India has developed a concept of inter linking major rivers of India. In fact in 1990s the Govt. of India appointed a commission to examine the strategy of water resource development side by side also to explore possibility of inter linking of rivers. Its reports are still obscure for unknown reason.

However we have already stated that for the new scheme the Supreme Court has directed the centre to implement the scheme by 2012 and the P.M. has also announced to act according to these directives. A task force has been appointed to this effect and it has been under the headship of Mr. Suresh Prabhu.

The intention of the scheme is a welcome gesture on the part of the Govt. of India in the sense that the Surplus water of our rivers flowing into the sea uselessly be prevented thereby and diverted to the water deficit areas obviously the Southern States of India. The project is thus to promote national integration and is expected to ensure a plan of sharing country's natural wealth. But whether these whole process are simplistic and visionary can be seen as under :

In the words of A. Vaidyanathan, Prof. Emeritus, Madras Institution of Development

Studies, Chennai who has written a thought-provoking article on it under, the title Inter Linking of Rivers in the Hindu, dated March 26 & 27, 2003 the problem stains as 'Whether the linking of rivers will promote integration or generate more disputes and tensions is a moot question'. According to him, 'Several obvious, but prime facie important, question about the concept, and the feasibility, desirability and viability of the proposal need to be clarified before' its implementation can be considered seriously'. He has also rightly doubted about whether there was a thorough investigation and study of the relevant papers relating to this scheme.

If we go by his analysis, he has questioned the necessity of interlinking merely for domestic use, which requires only five percent of the total use of water and can be harnessed through canals, tanks, wells and tub-wells. The requirements are no doubt in largest amount for irrigation and agriculture. He says, more than 85% of water from canals, tanks and tube-wells is used for irrigation. The demand may be increasing as he presumes. The need for irrigation arises in regions and seasons when rainfall is insufficient for the crops and optimum yields. It is in this sense the concept of inter-linking is considered as a way out.

A closer examination of the proposal under consideration leads us to face several questions:

1. As to the surplus water and its transfer to the draught-ridden area or areas of scarcity poses confusion. According to Vaidyanathan the volume of flows during the flood season is misleading as a basis for judging surplus. Nor can the region where floods occur be considered water surplus. Most of them may have floods in the monsoon but have inadequate water for use in the dry season.

2. A more serious inconsistency has been recorded by Vaidyanathan and that can also be considered here. He says that 'Most of the flow in practically all rivers occurs during the south west monsoon. Published data from official sources show that 90 percent of the flow in South Indian rivers occurs between May and November. Data on the Indo-Gangetic and Brahmaputra river basins are classified. Being perennial in proportion of the total flow occurring during these months may be some what smaller but not all that much smaller'. He has also given an example by citing, 'Over 80 percent of the annual flow in the Kosi is between May and November, and almost three fourths between June and October'. Thus he concludes in this point that 'since the surplus occurs in the rainy season and the demand is in the dry season, it is not enough to much carry the water from one point to another'.

3. There is also a problem to find out the route of inter linking of the rivers under consideration. If a sought route is sought then a linkage can be done from the Brahmaputra through a dam at Goalpara (Assam) and touching Rangpur (Bangladesh) it can meet through a long canal of about 300 miles upto Farakka, West Bengal. But it is not possible so far as the nature of Indo Bangladesh relation is concerned. Moreover why a sovereign state would allow digging canals at the cost of their own people. So the alternative lies in the digging the proposed canals within India. It has been stated that the proposed canal will carry the surplus water from the Brahmaputra to Farakka and then to Mahanadi of Orissa before falling into the Cauvery. But in this plan, one is to cross over at least 50 big and small rivers. According to some experts this can be possible by constructing Acquaducs or Box Canals. But this solution also bring as to face the legal question relating to the inter states relationship. Because it certainly involves interest of these states who are being brought into consideration. In fact the plan cannot be materialized without the consent of the concerned states.

So, there are some crucial matters which are to be worked out first and the plan may be

implemented thereafter. Otherwise it would be just a propaganda as to creating more confusion as ever. We have experienced the bitterness centering the Farakka Barrage and the events thereafter. So, the plan of Garland canal must not be directed to inject more divisive spirit in the minds of the people at large.

Thus, the problems of India in respect of its flood, water management and development are not so easy to tackle. It is to be kept in mind whether any scheme would bring a new problem affecting the national interest and the remedies could be fatal than the disease. The problem of Cauvery, Krishna and the acute crisis of water of the Southern states are well-known, but a well calculated scheme should be taken in order to maintain a balance of the whole system suitable for a country like India.

### References:

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2. Ben Crow: The Politics and Technology of Sharing the Ganges, University of Edinburgh, 1980, p. 18.
3. Damodar Valley Corporation is a multi-dimensional project on the river Damodara- a western tributary of the Hooghly. It was established in 1948 and the main barrage ‘Panchet’ was constructed in 1959.
4. For details, Ministry of Irrigation and Power, Preservation of Port of Calcutta, New Delhi, Govt. of India Press, 1961, pp. 10-11. Incidentally, the report of Prof. Hensen was described as the ‘seal of approval’ by Debashis Mukherjee, once the General Manager of the Farakka Barrage.
5. Ipean and Wecker: The Hooghly River Problem 1962, Mimeo submitted to the Govt. of Pakistan, pp. 38 & 40.
6. Mr. Bhattacharyya made his points clear in an article read in the 1965 Annual General Meeting of the Association of the Engineers, Calcutta. He observed that, ‘prior o the DVC dams withholding the Damodar floods the ebb flow used to be swifter and continuous during the monsoon months of June to September and there used to be little flood flow upwards in those months. Thus the bars, especially in the lower reach of the river (Hooghly) were scoured and navigable channels were naturally maintained with occasional help of dreagers of required points. With the DVC dams this natural hydraulic operation has been practically stopped with progressive deterioration of channels..’ For details see Ben Crow, op. cit., pp. 50-51.
7. N. Mikherjee: The Port of Calcutta – A Short History, The Commission for the Port of Calcutta, Calcutta, p. 9.
8. Govt. of Bangladesh, White Paper on the Ganges Water Dispute, September, 1976, p. 13.
9. Govt. of India, The Farakka Barage, January 1977, p. 5.
10. Recommendations of the Fifth Meeting of the Secretaries held in New Delhi, July 16-21,

1970. Details may be seen White Paper on the Ganges Water Disputes, Govt. of Bangladesh, p. 14.
11. Joint Declarations of Prime Ministers of India and Bangladesh on March 19, 1972. Ref. Bangladesh Documents, Vo. 1, No. 2 (Dhaka), Ministry of Foreign Affairs, 1972, p. 6.
  12. Bangladesh Documents, Vol. 12, No. 16, p. 13.
  13. Daud Majlis: Letters from Dacca', published in Far Eastern Economic Review, April 7, 1978, p. 134. India argued that the tail end of the canal towards the Brahmaputra river would meet the river at a place in the Assam State in India just about the Indo-Bangladesh Border. The tail-end of the canal towards the Ganges would meet the river of a place just before the Farakka Barrage. As India hold, the Brahmaputra river has a much larger flow than the Ganges and the lean season of the two rivers do not overlap. The Ganges lean season come much earlier than the Brahmaputra's lean season. The delta areas of Bangladesh along the town reaches of the Brahmaputra get water-logged through the early advent of the monsoon and as such the Brahmaputra lean period does not last for a long time. Brahmaputra water is wasted by flowing down into the sea, because it is of no use to Bangladesh at these time. So to augment the Ganges dry season flow at Farakka to make up the shortage created by the withdrawal of water. The unutilized water falling into the sea can be diverted above the Farakka through the proposed link canal. (For details see – The Hindes saters, India, May 18, 1977, p. 2, column 3).
  14. White Papers on the Ganges Dispute, p. 15. According to Bangladesh, the requirements of the situation do not necessarily warrant the transfer of water from the Brahmaputra to the Ganges. The best means of augmenting the Ganges dry season flow lies within the Ganges system itself. The need of the two countries when much of its flow runs wastefully to the Bay of Bengal. A certain amount of the unutilized monsoon flow of the Ganges can be stored up by constructing storage dams along the upper reaches of the river in India and released during the dry months to enhance its flow at Farakka. The Ganges carries more than 300 million acre feet of water annually. Only nine million acre feet of water is needed for storage dams to meet the shortage at Farakka. There is a potential for storage on the monsoon flow in the Ganges basin (Based on an interview of Mr. B.M. Abbas .t., adviser to the President of Bangladesh on Flood Control, Irrigation and Power with BBC London on 4.3.76, see the Bangladesh observer, 8.3.76, and also the Bangladesh Times, 9 April 1976).
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  19. Daud Majlis: op. cit., p. 134.
  20. Far Eastern Economic Review, 15 October, 1982, pp. 28-29. Also Asia Week, 22 October, 1982, p. 19; The Statesman, New Delhi, 9.10.1978, p. 708.
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25. K.L. Rao: India's Water Wealth, New Delhi, 1979, p. 232.
26. (1) Brahmaputra Ganga Link; (2) Ganga-Cauvery Link; (3) anal from the Narmada to Gujarat and Western Rajasthan; (4) Canal from Chambal to Central Rajasthan; (5) links from rivers of western Ghats towards East. For details K.L.Rao, op. cit., p. 229.
27. K.L. Rao, op. cit., p. 231.
28. Ibid.
29. B.B. Vohra: A Policy for Land and Water (sardar Patel Memorial Lectures, 1980), Govt. of India, Department of Environment), p. 24.