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Stolen versus Wasted Waters of Pakistan

Prof. Dr. Umbreen Javaid and Hassan Iqbal

Abstract

Availability of per capita water is decreasing in Pakistan very fast. No serious effort has been done after the commissioning of Mangla and Tarbela dams long ago. The efficacy of these dams is also falling fast due to sedimentation. The construction of Kalabagh dam has been made politically controversial and Sindh, KPK and Baluchistan provinces are not even ready to consider the proposal. Successive Governments are dragging their feet on Diamer Bhasha dam due to its cost, long time required for completion and other logistic challenges. India, as upper riparian, is continuing with its designs to impede water flow towards Pakistan by building hydroelectric projects, and at some places even diverting water against the Indus Water Treaty 1960. Pakistan has already entered water stressed zone and experts are since long warning about this fact. It is said that the scarcity of water could prove to be a bigger threat than even the terrorism which Pakistan faced for almost 20 years. If it is politically Kalabagh dam is not feasible Pakistan should find alternatives, as there is no short cut solution to this problem. It has already been delayed for long and further delay shall cause clausal damages to economy, agriculture, industry, environment, ecology and above all national integration, as shortage of water is turning into inter provincial dispute.

Keywords: Pakistan Water, Indus River, Kalabagh Dam, Diamer Bhasha Dam, IRSA, Stolen Water

Introduction

Ever since Pakistan came into existence, this has been the myth that our waters are being stolen by India, our neighboring country. It is a fact that India gave Pakistan a tough time with reference to flow of water in the rivers, particularly in Bias, Sutlej and Ravi, and later on, in Chenab and Jhelum also. India had a plan to stop waters of all the five rivers and destroy agriculture of Pakistan, even not to allow the drinking water at some point of time. However, with the negotiations and signing of Indus Water Treaty in 1960, Pakistan was able to save at least three rivers, Chenab, Jhelum and Indus. Under the Treaty Pakistan built two reservoirs, Mangla and Tarbela. These reservoirs were in a position to cater for the deficiency of water created by the handing over water rights of three rivers to India. This could be done only by building reservoirs and link canals between the rivers, and an even distribution of water across Pakistan. This system worked very well not only between India and Pakistan through Indus Water Treaty, but also worked very efficiently between the provinces through Water Accord, 1991.

*Authors are Director, Centre for South Asian Studies and Dean Faculty of Social and Behavioral Science, University of the Punjab, Lahore and Commissioner, Punjab Information Commission, Lahore.

It is ironical that after Mangla (1967) and Tarbela (1976) reservoir, no new major water storage facility was built. Mangla reservoir was raised to some extent to store more water to a limited extent, but this could only cater for the reduction of storage due to sedimentation. These reservoirs are losing their capacity due to natural process of silting. Water and Power Development Authority (WAPDA), the apex body responsible for planning, execution and maintaining the reservoirs is of the view that silting process has done colossal loss to the storage efficiency of Tarbela and Mangla dams. Therefore, it has suggested that the storage level for water in Tarbela be kept at 1386 feet as against previous level of 1380 feet. Similarly, level of Mangla may be kept at 10.42 against previous level of 10.62 feet (Yousafzai, September 30, 2017). Indus River System Authority (IRSA) is another body which was formed by the Government of Pakistan and is responsible for monitoring the flow of rivers, total available quantity of water and distribution among the provinces as per share determined through Water Accord of 1991. IRSA has also repeatedly pointed out to the Government, the urgency of building new reservoirs due to the fact that the actual storage capacity of both the major dams is declining fast and water availability is being reduced. Advisory Committee of IRSA has further cautioned that Provinces of Sindh and Punjab are likely to encounter 18 to 25% setback in flow of water to their agriculture fields (Yousafzai, September 30, 2017).

This is not the first time that the Advisory Committee of IRSA has issued warning to the Government to build reservoirs for water on war footings. Such warnings have been issued to successive Governments by political leaders, engineers, WAPDA, academia, civil society and researchers, but somehow despite realization, necessity and availability of resources, reservoirs have not been built. An eminent Pakistani scientist, engineer and scholar, Dr. Shaukat Hussain, who studied and lived abroad, and is now settled in Australia, is of the view that Pakistan successfully built two large reservoirs at that time when there were no financial resources, no technical expertise, organization, machinery and equipment. It is strange when Pakistan has everything, it is not moving at all to build reservoirs essentially required for its survival (Personal communication, Dr Shaukat Hussain, June 2, 2018). The water situation is worsening in Pakistan with every passing day. This scenario has brought the provinces at a crossroad, where they are now actually fighting for water among each other. Provinces are doing it rightly as their demand is rising in the wake of increase of population. However, the available water is far short as compared to the past availability or present requirement. When we see there is scarcity of water at one point of time, so much so that provinces are fighting for a fair share of water, there are, on the other hand, flooding conditions and water is in such an abundance that it plays havoc with human population, settlements, animals and standing crops, causing loss of billions of rupees to the economy every now and then. This imbalance and fluctuation shows that we have not taken this issue seriously and this precious resource of water is being managed without long term planning. The attention, time and financial resources allocated for the proper management of water resources and

development projects are insignificant in overall public sector development plans (PSDP) of the country.

The low priority of water projects can be seen from the budget allocation of Government of Pakistan. In the year 2015-16 the budget for water sector was reduced from 60 billion to 30 billion, but the record shows that even out this hardly 23 billion was actually spent for the projects. During financial year 2016-17, allocation was 31.72 billion and only 24 billion were actually spent (Government of Pakistan, 2018). A comparison on the other side of border shows that Central Government of India keeps water projects on very high priority and during current year approved Rs 850 billion for major irrigation works, multi-purpose projects and four flood management schemes after assessing their techno-economic viability (TNN, June 8, 2018).

Pakistan National Water Policy 2018 has also confirmed that Pakistan has become a water scarce country. It states that:

"With rapidly growing population, Pakistan is heading towards a situation of water shortage and by corollary, a threat of food insecurity. Per capita surface water availability has declined from 5260 cubic meters per year in 1951 to around 1000 cubic meters in 2016. This quantity is likely to further drop to about 860 cubic meters by 2025 making our transition from 'water stressed' to 'water scarce' country" (Government of Pakistan, 2018).

Although the researchers and other stakeholders have been warning time and again of continually depleting water resources, but at Government level it has been admitted for the first time that the country is heading towards scarcity of water. In 2016, Pakistan Council for Research in Water Resources (PCRWR) reported that Pakistan touched the "water stress line" in 1990 and crossed the "water scarcity line" in 2005 (PCRWR, 2016).With this persisting situation, Pakistan is likely to face an acute water shortage or a drought-like situation in the near future. A comparison of availability of water of some countries is given below.

Table 1

Per Capita Water-Availability in Selected Countries (m3)			
Country	**1955**	**1990**	**2025**
China	4,597	2,427	1,818
Mexico	11,396	4,226	2,597
Philippines	13,507	5,173	3,072
Iraq	18,441	6,029	2,356
USA	14,934	9,913	7,695
Pakistan	2,490	1,672	837

Source: Population Action International, 1993

The comparison which was drawn in the year 1993 clearly indicates that Pakistan has entered into the phase of scarcity. This has been further substantiated by Government of Pakistan, Ministry of Water Resources in its National Policy document approved in 2018. According to world ranking by Water Resources Institute, Pakistan ranked as

the 31st most water-stressed country in the world, with 4.31 baseline water stress score, which is very high (Water Resources Institute, December 12, 2013). International Monetary Fund (IMF), on the other hand, has ranked Pakistan the third in the world to be facing an acute shortage of water (Baloch, June 07, 2018). Similar are the conclusions of reports by the PCRWR and the United Nations Development Program (UNDP) (PCRWR, 2016).

"No person in Pakistan, whether from the north with its more than 5,000 glaciers, or from the south with its 'hyper deserts', will be immune to this scarcity," said Neil Buhne, UN humanitarian coordinator for Pakistan (Buhne, November 15, 2017). Water resource experts and researchers predict that Pakistan is on its way to becoming the most water-stressed country in the region by the year 2040. Some analysts say scarcity of water poses a bigger threat to the country than even terrorism faced by Pakistan during last 20 years. Stocktaking of rivers with reference to water availability is as under:

Table 2

Inflows in Western Rivers (in MAF)			
	Kharif	**Rabi**	
Maximum (Year)	154.7 (1959-60)	35.1 (1990-91)	186.8 (1959-60)
Minimum (Year)	71.5 (1999-2000)	15.7 (1971-72)	97.7 (1971-1)
Mean (77 Years)	115.9	22.8	138.7

Source: WAPDA and IRSA Reports

It can be observed from records that River Indus alone provides 65% of total water flows, whereas Jhelum and Chenab Rivers provide 17% and 19% respectively. During the months of June to August, these rivers flow on their peak, due to monsoon season in India, Pakistan and catchment areas of these rivers. There is a wide gap in flows of rivers during Kharif and Rabi crops i.e., 84% and 16% respectively. These erratic patterns of rivers flow suggest storing as much water as possible during high flows or monsoon periods. This is only possible with excellent storage and management of water in the country in a planned, organized and systematic manner (Kahlown, & Majeed, 2003).

Stolen Water of Pakistan

Under the Indus Water Treaty 1960, India is using water of three eastern rivers (Ravi, Bias and Sutlej) exclusively. To that extent, Pakistan never objected and the ground reality is that hardly any water flows in these rivers and even water species in these rivers are extinguishing very fast. These rivers, which were mighty rivers, in the past have become virtually drainage or floodwater channels. Despite these absolute dry conditions when zero discharge is available in these rivers, Indian Punjab's Chief Minister Amarinder Singh recently demanded the Central Government of India to take steps to restrict river water flow into Pakistan (Press Trust of India, May 7, 2018). He

has requested the Central Government to ensure that entire water of these rivers is stored in Indian dams and no water flows downstream towards Pakistan. He has proposed to the Central Government to appoint experts who should find ways and means to stop water flowing to Pakistan, as this is a net loss to Indian Punjab (Samaa, May 8, 2018). As a follow up it has been confirmed by the Central Government of India that it will ensure by building new dams that water received through ice melting, monsoon or other sources will be stored and used in the event of short rainfall or other water emergencies. The Central Government of India is of the view that case of water of three rivers allocated to Pakistan under Indus Water Treaty 1960 is altogether a separate issue, whereas India has exclusive and first right over waters of Ravi, Bias and Sutlej (TNS, March 27, 2018).

These recent developments support the suspicions of Pakistan that, on one hand India wants to withhold every drop of water of three eastern rivers; it also has designs to overstep on the western rivers allocated to Pakistan exclusively through Indus Water Treaty 1960. Pakistan has been continuously objecting to the plans and designs of India of building hydroelectric dams, as such activity on rivers not only impedes the flow of water, it also results into temporary stoppage of water. At various locations, it is apprehended that water is diverted to different projects, violating the Treaty. Pakistan has also approached World Bank, which is the guarantor and arbitrator of Indus Water Treaty, for intervening and asking India to abide by the provisions of the Treaty. However, it is a matter of great concern for Pakistan that India invariably has new designs for interfering with the waters of these rivers, exclusively allocated to Pakistan.

Upcoming Scenario

India is working to build a series of dams on these rivers. Till recent years, there was limited activity regarding building of dams on Himalayan Rivers. However, current research shows that India, Nepal, Bhutan are working very fast on these rivers. India does not only have disputes with Pakistan, but it has many issues with Nepal and Bhutan also on river flows. All these countries in search of cheap sources of power are likely to violate international laws on rivers and related bilateral treaties. Researchers have estimated that around 400 dams are likely to be built on Himalayas Rivers (Scally, August 16, 2013). India has already laid hands on western rivers of Chenab and Jhelum. These two rivers play an important role in providing water to upper Punjab of Pakistan. Stopping, impeding and diverting their water is proving to be a big blow to the agriculture, livestock and industry of Pakistan. India has always contended that it does not violate the Treaty by using the water of these rivers; rather, it only diverts water to generate electricity through temporary reservoirs and after that, water is released to its original course.

As a result of this dam phobia, in the next 200 years, Himalayas will become the most dammed region in the world. "India aims to construct 292 dams, doubling current hydropower capacity and contributing 6% to projected national energy needs. If all

dams are constructed as proposed, in 28 of 32 major river valleys, the Indian Himalayas would have one of the highest average dam densities in the world, with one dam for every 32 kilometers of river channel. Every neighbor of India with undeveloped hydropower sites is building or planning to build multiple dams, totaling at minimum 129 projects (Vidal, August 10, 2013)." John Briscoe, a subcontinental water expert, former World Bank senior water expert and currently a professor at Harvard University, recognized Pakistan's unhappy position in the following words: "This is a very uneven playing field. The regional hegemon is the upper riparian and has all the cards in its hands (Vidal, August 10, 2013)."

Pakistan fully realizes the weak position it has as a lower riparian. Along with its geographical disadvantages, the political situation because of Kashmir, is another handicap for Pakistan. Somehow water issue is directly connected to Kashmir issue. Although there are number of countries in the world with the similar position, where waters originate from one country and flows to other countries but they have successfully resolved through settled international practices, norms, agreements or local arrangements. But India and Pakistan have not been able to completely resolve the issue, mainly because of lack of trust between the two countries. The experts on the subject think that India may not ordinarily violate Indus water Treaty, but it is quite likely that it might create nuisances from time to time, as it has done in the past (Vidal, August 10, 2013).

As discussed, previously it was opined that India will never violate the Indus Water Treaty ordinarily. It is also a fact that despite all odds, three hot conflicts and many standoffs, the Treaty is intact and working. Since 1947 there have been frictions, arguments, difference of opinions, hot talks and negotiations, but the Treaty remains intact and still in force. Although India had time and again threatened to revoke or renegotiate the Treaty, but such gestures remained verbal only. Such opinions do come from Pakistani side also, but not to the level of a threat. However, water dispute between Pakistan and India is considered as one of the major issues pending resolution along with major bilateral issues like Kashmir. The reports show that India is in the process of constructing many dams on Jhelum and Chenab, as these rivers originate from Kashmir. These dams include, Kishenganga, Dal Huste and Sawalkot. Indian side is of the view that Indus Water Treaty allows India to use waters of Jhelum and Chenab rivers for producing hydropower. Pakistani side considers it undue use of water of these rivers by India, as putting water into dams and use causes delays and further manipulation (Vidal, August 10, 2013).

The analyses of this situation reveal that India has not acted upon and worked on the Treaty with clean hands and has taken full advantage of being upper riparian. India has also used water as leverage and quietly annexed it with other major issues pending resolution. India has also used its political position in the international scenario to exploit water situation in her own favor from time to time.

Water Wasted in Pakistan

Since decades, experts, academia, media and civil society are continuously pressing that Pakistan should opt for ways and means for water conservation. Experts are also of the view that wastage of water be stopped as a first step and then go for water conservation, as both are equally important. It is a bitter reality that in Pakistan, we are wasting a significant amount of our precious water at all levels, from individual to households and institutions to governments. A large amount of water is wasted on the farms due to poor and traditional methods of irrigation. Major wastage takes place when on average, water amounting to Rs. 21 billion goes down to sea every year without any purpose. In November 2017, a meeting of Standing Committee of senate was held in Islamabad, where member of IRSA and Pakistan Council of Research in Water Resources (PCRWR) disclosed that Pakistan do not have the system for water conservation and distribution to its provinces (Guramani, November 2, 2017). Pakistan can only store water up to the requirement of 30 days, whereas India has the capacity to store water up to 320 days. Out of 43 lakes in Pakistan, level of 26 lakes has gone down drastically.

It may be noted with concern that lands in Pakistan are going barren as water does not reach the tail ends of canals. There is tremendous amount of seepage in the canals where canals are not properly lined. This seepage not only destroys fertility of the nearby lands through water logging and salinity but also wastes huge amounts of water which can be used for crops in different areas. Cropping pattern in Pakistan is uneven. In most of the areas of Pakistan, farmers are cultivating sugarcane, which takes heavy quantity of water throughout the year. At the end, Government of Pakistan has to give subsidy to sugar mills to sell and export sugar. If we adjust the cropping pattern and opt for crops like cotton, very less amount of water will be required and in the end, such yields can be exported very conveniently as a cash crop. Similarly, we are importing pulses, which can be grown in Pakistan easily due to conducive environment and these require very less amount of water.

These steps constitute formation and implementation of suitable agricultural policies and efficient agriculture management at the farm level. It can be done at the level of provinces, as it is a provincial subject. However, as far as country-wide policy making in agriculture is concerned, which involves water management, and interprovincial movement, import and export of agricultural products, the onus is on Federal Government. Furthermore, ensuring sectoral growth is the responsibility of both the Federal and Provincial Governments. Water is stolen by big landholders having influence in the area, collectively depriving small land owners of their right. Although laws to curb these violations exist, however their enforcement remains a problem. These laws fail to cope with the requirement, thus necessary amendments must be made to protect the rightful interest of everyone.

Way Forward

As discussed in the preceding paras, Pakistan has no option but to build new dams and reservoirs to safeguard its water security. Being an agricultural country, it is essential to realize that water security is important for economic security also. Pakistan's economy is agro-based and water security will ensure progressive agro-based industry. A world overview shows that all countries having rivers and related agro-based economies have built dams to secure water when it is available, and utilize stored water, when water do not flow in the rivers. USA, China, Egypt, Nepal, Bhutan, Bangladesh and almost every country in the world made dams and reservoirs to ensure water security. It is also imperative that Pakistan enhances its water reserve capacity from 30 to 90 days to meet any emergency conditions, which is generally faced from time to time. The experts propose that at least one mega dam should be started instantly, Kalabagh Dam or Diamer-Bhasha Dam. Some of the salient features of both the dams are discussed below.

Kalabagh Dam

Kalabagh dam is proposed to be built on Indus River about 25 kilometers upstream of Jinnah Barrage. This site is about 17 kilometers downstream of Attock, a place where Indus river and Kabul river join. This will be a large dam with as large as 176000 square kilometers and wide spread catchment area. The dam will be 260 feet high with usable storage of 6.1 million acre feet (MAF), whereas total storage capacity will be 7.9 MAF. It will be a multipurpose dam for power generation, irrigation water with flood control capacity. The dam will generate 3600 MW cheap electricity which will bring the cost of electricity substantially down in overall national grid (Dawn, November 29, 2004).

Kalabagh Dam is not supported by the provinces of Sindh, Khyber-Pakhtunkhwa (KPK) and Baluchistan. It has been debated to a large extent at every level and the controversies are increasing as the time passes. Generally the arguments are that it is politically damaging, as it is alleged to create superiority of Punjab province over other provinces. Secondly, it is also contended that there is neither enough water available to store in the dam nor there enough lands to be irrigated from this stored water, if at all it is available. Third, it is argued that it will create water logging and salinity and spoil the fertile lands of KPK and disturb the ecology of the area. Finally, it is feared that the dam will have a very high displacement and resettlement cost and that the country's previous experiences of resettlement of Mangla and Tarbela are not good. Since there is no national consensus on this proposal, it is argued that Pakistan should not build this reservoir (Advocacy & Development Network, 2003).

Those who are in favor are of the view that Kalabagh dam should have been made long ago. Especially in the floods of 2010, the economy could have saved hundreds of lives, thousands of cattle heads, houses and crops worth billions of rupees. It is estimated that overall a loss of 4300 billion rupees could have been saved, had the

dam was in place prior to the disastrous floods of 2010. The then Ministry of water and Power state that the dam has the capacity to absorb average floods at zero loss: "Some floods will be absorbed by the reservoir and average flood control benefits are estimated at Rs 150 billion (The Nation, March 3, 2013)."

Diamer-Bhasha Dam

Diamer-Bhasha dam has been proposed to be built on Indus river, some 320 kilometers upstream Tarbela dam. The dam will be located near Karakoram Highway in the area of Chilas. At places Karakoram Highway will have to be realigned, as some portion will be eroded by the reservoir. It will be a large reservoir with 7.5 MAF capacity and active storage of 6.39 MAF. The dam is proposed to be 272 meter high. It will also have the capacity to generate 4500 MW cheap electricity. Due to its location, upstream of Tarbela it will be able to provide additional storage of water and additional electricity generation capacity to (Abbas & Haq, 2011). It will also add more life of about 50 years to Tarbela by reducing sedimentation process.

A fair comparison of both the dams shows that both dams are large. Kalabagh dam is expected to be built in five years from its commencement, as its feasibilities are ready. Its cost is low, and is almost half of that of Diamer-Bhasha dam. Bhasha dam will require ten years to be completed. Since three provinces do not agree on the construction of Kalabagh dam, it could not be constructed over the years. Diamer-Bhasha dam is the project where all provinces agree, therefore it should be commenced on priority basis. Successive Governments have shown their concern to build Diamer-Bhasha dam but it could not be built. This dam was planned in 2003-04, and had it been commenced then, the dam would have started paying its dividends since long.

No Political Conflicts over Water

At this point of time when the country is coming out of the menace of terrorism and is still prone to international conspiracies, Pakistan cannot afford any political controversies over water between the provinces. At the same time, we have seen that without building reservoirs, survival of the country is at stake. Diamer-Bhasha is the reservoir on which all provinces agree. Although its cost is about 1,400 billion rupees, yet it has more generation capacity than Kalabagh dam. 6.5 MAF live storage of water will give a new life to the country and our agriculture. One more advantage of Diamer-Bhasha dam is that it is located upstream of Dasu, where a run-of-the-river hydroelectric project has been planned and approved. First phase of the project will give 2160 MW of cheap electricity, which can be expanded to 4320 MW subsequently. Since the project depends on the flow of river Indus and has no reservoir at the back, there are apprehensions that it will run only for 3-4 months in a year, when there is sufficient flow of water in the river Indus. With low water flows in winter, electricity generation will stop at Dasu project. However, if Diamer-Bhasha reservoir is completed, it will have sufficient flow of water throughout the year to

produce electricity at its full capacity. All facts and political situation of the country demand that the noncontroversial Diamer-Bhasha reservoir be built without further loss of time with due priority.

Conclusion

It is understood that water is the most important issue for Pakistan. At the same time we cannot ignore out national integration and harmony at any cost. The opinions of the provinces cannot be overruled or overlooked. There has to be a way forward within such intricacies. Among other tensions, we have to fight administrative battles related to water with India as our upper riparian. We also do not have excess finances resources to spend on one sector to achieve our objectives. It is difficult to find a way out from within all these challenges and achieve our objective of more water and that can only be achieved by building more reservoirs. It is also important that we do not only engage provinces by going with their opinion or consensus, but they must contribute financially for building reservoirs, as ultimately the stored water will be used by the people, agriculturists and industrialists of the provinces. Secondly, the cheap electricity will also be used in agricultural, industrial and other sectors in the provinces, and particularly people of Pakistan. Let it be the responsibility of all the provinces and not only the federation of Pakistan. This is the only way forward to expeditiously complete the Diamer-Bhasha dam. Furthermore, alongside large dams, Pakistan also needs to focus small dams also, as it is being done throughout the world. This involves a comprehensive fight involving that with to get our stolen waters restored, and at the same time, to secure our waters being wasted.

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