**Are dams the right choice?**

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The demographic pressure on the dwindling resources of Pakistan is increasing at an alarming rate. However, being an important factor, population is negligibly mentioned at most of the forums and the focus is placed solely on the rapidly declining resources of Pakistan, particularly water.

The per capita water availability of Pakistan, which stood at 5,000 cubic metres at the time of Partition, now stands at 1,000 cubic meters. Meanwhile, the population that stood at 34 million then now stands at 207 million. It is this denominator that makes all the difference. Amidst the daunting challenge of resource allocation, there is a heated debate over whether the country should build more dams or follow the policy of conserving the ecology and let the rivers flow naturally, as advocated by the developed world.

In Pakistan, the argument of building more dams revolves around the country’s bizarre storage capacity compared to others, notably India and China. Since wheat is the fundamental crop and most of Pakistan’s agriculture depends on it, the main idea behind building more dams is to store ample amounts of water during the Kharif season and use it in the Rabi season, especially to sustain the wheat crop production under the projected water-stressed conditions in the future.

Another important reason for constructing dams is meeting the country’s energy demands in order to balance the current energy mix of the country. Hydropower contributes around 30 percent to the total energy mix, while thermal power plants contribute more than 60 percent. An increase in the hydropower capacity will reduce the burden of oil imports to run thermal plants, help in meeting country’s emission-reduction targets and contribute towards the realisation of the landmark Paris climate agreement.

The other school of thought, revolving around the conservation of river ecology, advocates that focus should be on the proper utilisation of water rather than building more dams. Losses in the system, poor irrigation practices and cropping patterns must be revised altogether to reduce water wastage. According to this argument, malpractices such as flood irrigation, staggering water losses in the system, excessive groundwater pumping and cultivation of water intensive crops is undeniably ironic for a country facing acute water shortage.

Let us see some examples relating to both the arguments from around the world. Let’s consider economically strong countries such as the US, where a large amount of government-sponsored dams are constructed, to the extent that California alone has around 1,594 dams in total, while the total number of dams in the US is around 84,000. In the US, the current argument regarding removing dams is based on the fact that around 50 percent of the dams will be more than 50 years old by 2020 and the cost of their maintenance will exceed the cost of their removal.

Brazil is another example. The country generates about 70 percent of its electrical energy from large dams, which is one of the highest percentages of hydropower generated energy in the world. However, the government of Brazil surprisingly reverted from its decades-long policy of building dams after controversy sparked over the decision to build the huge Belo Monte Dam on Xingo River in the north of Amazon. The main factors that generated outrage were falling government revenues and sluggish economic demand due to an increasingly unpredictable climate that has, unfortunately, made hydropower generation more expensive and less reliable.

On the other hand, reports say that in some countries glaciers can drop by a third by 2050 due to global warming, leading to a reduction in the flow of the rivers. Tajikistan is one such country, with a population of eight million and extremely low arable land – seven percent – due to limited dams. Because of this very reason, the country is emphasising on constructing dams. Same is the case with South Africa.

In the perspective of constructing dams, the Bhasha Dam on the River Indus is of particular significance, the least controversial and highly beneficial project. First, in terms of power production, the dam will add 4,500MW in the system. Second, it is going to hold silt upstream of Tarbela Dam, thereby increasing its life by 20 years. Third, it will provide a storage capacity of 6.5 million acre feet (MAF).

The foundation stone of the dam was laid down in 2011; the estimated cost of the dam in 2008 was $12.6 billion. However, the project has been much delayed and now the construction cost has spiked to around $15 billion. As far as the Kalabagh Dam is concerned, it was believed to offer 6 MAF of storage along with 3,600 MW of power production, irrigation benefits and improved flood management. However, inter-provincial disagreement made it a politically non-feasible project.

If ‘no dams’ is taken as the nationally-agreed-upon option, the country will then be facing the uphill task of launching a nationwide integrated water conservation and management programme on an urgent basis. The programme will have some essential components including a watershed-management drive, floodplain management and wetlands restoration strategy and broadcasting high efficiency irrigation schemes across the country. Other important components will include upgrading water distribution network, including major canals, barrages and headworks, groundwater regulation and management and river navigation development.

This great debate of dam versus no dam has recently taken a major turn with the landmark approval of the first national water policy that highlights several strategic initiatives at both the federal and provincial levels. The policy is based on the principle of integrated water resources management. Thus, it has something for both sides.

Now, it is common duty to set aside disagreements and take on the mantle of responsibility to fulfil the requirements of properly implementing this policy and paving the way for a better, sustainable and water-secure Pakistan.

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