



# Dams and human development: Changing societal perceptions

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Societal perceptions on any issue change with time. Thus, it is no surprise that the overall attitudes and perceptions of the contributions of large dams to human development over the past 100 years have changed significantly, at national and international levels.

Consider the USA. In 1932, during the peak of the Great Depression when some 20 per cent of the country's population were unemployed, Franklin Roosevelt, a Democrat, was elected with an overwhelming majority. His New Deal that helped the country to recover from the economic calamity relied heavily on water developments to create employment, generate electricity, increase agricultural production and control flooding. He established the Tennessee Valley Authority (TVA) which built dams and hydropower plants for economic regeneration of an impoverished region. Hoover dam was constructed during the Depression to create employment and increase electricity generation and agricultural production.

Many dams were an integral component for combating the Depression. When President Roosevelt promised a dam to the Republican minority leader, Senator McNary, to reduce unemployment in Oregon, Senator Clarence Dill, a pre-convention Roosevelt Democrat, demanded a dam for his home state of Washington. Roosevelt, according to Dill, initially offered him \$40 million for a dam. Dill protested vigorously: "we can't even put concrete across the river for that." Roosevelt increased the offer to \$50 million. Dill again protested. Roosevelt said: "Sixty million, Clarence, and that's as far as I will go." This was the beginning of the famous Grand Coulee dam, that was initiated as a make-work project [Biswas, 1976<sup>1</sup>].

All these dam construction projects have made major contributions to improving the social and economic conditions of the USA.

Similarly, during the 1950s and 1960s, as many countries became independent, major dams were built as nation-building exercises. Among these were the Bhakra-Nangal project in India, Aswan dam in Egypt, and the Volta dam in Ghana. The first Prime Minister of India, Jawaharlal

Nehru, called large dams "the modern temples" of India. India also developed Damodar Valley Authority in the similar vein as TVA.

Countries like Canada, Japan, Norway, Sweden, Switzerland and USA constructed large dams as the backbone for their economic development. In Canada, electricity bills have always been referred to as 'hydro' bills. Most developed countries have developed nearly 70 to 80 per cent of their economically feasible hydro projects which helped their regional development frameworks. In contrast, African countries have developed less than 5 per cent of their feasible dam projects.

The discrepancy between developed and developing countries in terms of water developments is stark. Consider the Colorado river in the USA and Murray-Darling in Australia. In both these river systems, water infrastructure already built can store 1000 days of average flow. In contrast, a country like Pakistan can store only 30 days of the average flow of the Indus river. The situation is even worse for Pakistan, since nearly 50 per cent of its annual rainfall occurs within only about 15 days during the monsoon season. This means infrastructure is essential to store these waters, which can be used during dry seasons.

On a per capita basis, the situation is equally unattractive. Countries like Australia and the USA have more than 5000 m<sup>3</sup> of water storage per capita. Middle income countries such as China, Mexico, Morocco and South Africa can store about 1000 m<sup>3</sup>/capita. For India, it is about 200 m<sup>3</sup>/capita.

A major development of the post-1975 period was the emergence of progressively stronger environmental and social movements in most parts of the world. This development, over a short period of years, radically changed societal attitudes and perceptions on many environmental issues. The importance of this movement can be recognized by the fact that in 1970, there was not a single country in the world that had a dedicated environment ministry. Some two decades later, by 1990, there was not a single country that did not have a dedicated environment department.

Environment has now rightfully become a mainstream consideration. Environmental impact assessments have become mandatory in nearly all countries. Proper consideration of environmental issues for all development projects has undoubtedly been a welcome development. Regrettably, however, often not all the mitigation measures are properly implemented.

For reasons that are still not known, dams became the lightning rods for many environmental and social single-purpose activist groups, but not other large infrastructure projects. This started to become evident in the 1980s, and picked up steam during the early 1990s. The environmental activists initially came primarily from the developed world, where the era of construction of large dams was generally over by the 1970s. These groups provided financial, intellectual and media support to their counterparts in the developing world to oppose steadfastly construction of large dams, irrespective of their net social and economic benefits.

These single-purpose anti-dam activists from the developed world already had a decent standard of living, including access to clean water, proper sanitation, 24 hour electricity and food, as well as good employment opportunities. To promote their anti-dam agenda, they often eschewed scientific and technical facts, and frequently quoted data and statements that were erroneous or out of context. In an era that universally considered 'small' was always 'beautiful', large dams automatically became 'bad' or 'ugly', irrespective of their desirability and overall benefits to society. These activists successfully managed to propagate the myth that water, energy and food problems of the developing world could be successfully resolved by small dams and water harvesting techniques, which would have manageable social and environmental costs. They also successfully portrayed to the media how 'large dams have universally contributed to major social and environmental costs, but very limited, if any, benefits'. This, of course, is mostly incorrect. However, the media always tend to look for critical stories.

These stories served media purposes well and received significant publicity.

This change in mindset of the media can be seen by analysing the coverage of large dams by one of the major Japanese newspapers, *Asahi Shimbun*. Prior to 1975, it regularly chastized the Japanese Government for not building enough dams. However, during the post-1980 period, it invariably took the Japanese Government to task for building any new dam, irrespective of their net societal benefits.

There is no question that small dams can play important roles in rural and smaller urban areas to meet their water needs. Equally and undoubtedly, they will not be able to meet the water requirements of larger urban-industrial complexes, where: demands are already high and increasing; the population is growing, and urbanization, economic activities are expanding; and, rainfall often may not be enough and will always be erratic. For all these reasons, not only must water be used increasingly efficiently, but also significantly more water storage structures are required to meet the expanding needs.

The opposition to large dams reached its peak around the mid-1990s. In 1993, facing certain defeat in the Executive Board, India withdrew its loan application from the World Bank amidst a major controversy over the construction of the Sardar Sarovar project. In the same year, the World Bank established an Inspection Panel as an independent complaints mechanism for people and communities who believe they have been, or likely to be, adversely impacted by any World Bank project. Not surprisingly, nearly all the projects the Inspection Panel considered during the 1990s were related to dams [Biswas and Tortajada, 2018<sup>2</sup>].

In the cacophony of anti-dam rhetoric in the 1990s, Sardar Sarovar project became the 'Vietnam' for the World Bank in terms of funding support to dam construction projects. The World Bank, which used to be a major investor of large dams, had nearly exited from providing such support, even though the need for such infrastructure projects was visible to any sane person. After the World Bank's departure, financial support for large water infrastructure projects by other donors like African Development Bank, Asian Development Bank, Inter-American Development Bank, and all other major bilateral donor agencies declined precipitously because of the success of the opposition of the anti-dam NGOs and lobby. The media became enamoured by the claims of the activist single-issue

NGOs, without even checking their validities. Furthermore, dams are generally constructed in inhospitable regions with poor transportation and communication facilities. Thus, very few media people actually verified the claims of these activist NGOs. They often published their unsubstantiated and dubious assertions as facts.

A decade later, the World Bank and other development banks realized their follies, and reinstated funding for large dams. In fact, for at least two decades it has been known how adverse environmental and social impacts of large dams can be mitigated and positive benefits can be maximized, so that their net benefits to the society can be the highest. During this period, many of us consistently advocated that the people who have paid, or would be likely to pay, the costs for the large water infrastructure projects should be made their direct beneficiaries. Properly planned and managed large dams should be viewed as development opportunities, and not as constraints. This is especially true for people who have to be resettled: they must have better lifestyles compared with what they had prior to the construction of the projects.

Unfortunately, several dam projects in the past did not adequately take care of the people who were resettled. This was not because of inadequate knowledge, but primarily it resulted from poor execution and in several cases, pervasive corruption. Such practices are deplorable.

During the post-2000 period, one of the reasons why the traditional development banks and bilateral aid agencies have been forced to re-examine their past approaches and views is because of the rapid emergence of Chinese institutions like its Export-Impact Bank and China Development Bank. These two banks, by 2010, were providing more export funding compared with all the Group of Seven countries combined. Similarly, by 2010, the two Chinese banks were providing more loans than the World Bank on an annual basis. Not surprisingly, the World Bank and G-7 export financing institutions have witnessed a steady decline in global influence since 2000 in terms of infrastructure construction because of their past policies.

The narrative has further changed when a China-led multilateral development institution, Asian Infrastructure Investment Bank (AIIB), was formally established on 25 December 2015. This happened in spite of the fact that both the USA and Japan lobbied strongly and consistently against its formation. AIIB currently has 80 countries whose memberships have been approved. This is the first

time a development bank has been led by a developing country that has a better understanding and appreciation of their immense infrastructural needs.

The emergence of the Chinese banks and AIIB as changed the global narrative on infrastructure development, including for large dams. Further, the World Bank and other regional development banks realized by 2000 that they had made the wrong decision by reducing funding very significantly for large dams. Even after their increased funding, the rapid emergence of the Chinese banks has meant that the older financing institutions can no longer dictate the global narrative on construction of major infrastructure projects [Biswas and Tortajada, 2014<sup>3</sup>].

An important side benefit of this emergence of the Chinese support has been that the global discussions on dams have now become consistently more and more fact-based and nuanced since about 2000. This trend is likely to continue for the next couple of decades, when other major countries like India and Brazil become increasingly involved in providing export credits for the construction of large dams in other developing countries.

With the increasing energy needs at the global level, and the threats resulting from climate variability and change, hydro projects are being viewed more favourably, since they are major sources of renewable energy. Even in such cases, and as important as large dams may be to contribute to water and agricultural production, electricity generation and overall socio-economic development, proper consideration of social and environmental impacts must remain a priority for sustainable development.

Finally, we believe that the global debate on dams will become more and more nuanced and evidence-based. Our expectations are that more large dams will be constructed in the world in the coming decades, to ensure water, food and energy securities. However, these dams are likely to be better planned and operated than ever before in history, and will thus enhance societal welfare.

## References

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