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From technocracy to free market? Reforms in rural drinking water sector in India

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Abstract
The shortage of safe drinking water poses a serious threat to public health as the number of people affected with water crisis has been incrementally increasing year after year. More than two million children die each year before reaching the age of five. Along with the climatic and ecological reasons of scarcity, access to safe drinking water is also constrained by the technological, social, economic and political factors. Technology diffusion in the water and sanitation sector has an important role in this context. In India, diffusion of water and sanitation technologies for clean drinking water has always followed a top to bottom down approach. Since 1970's the drinking water and sanitation sectors have been subjected to rigorous techno-scientific scrutiny. A number of projects and missions had been initiated to ensure wider reach and safety. One of the marked features of these interventions was the dominance of technocrats and western notions of development. But the recent water policies of the government have shown a paradigm shift; from "the top to bottom down" approach to "bottom-top" approach. It is in tandem with the initiatives for decentralization in development intervention. The present paper tries to explore the consequences of the technocratic dominance that was a defining feature of the development interventions in India. The paper also discusses the emergence of community participation in water governance and the neo-liberal shift of the sector.

Keywords: Drinking water, Technocracy, decentralization, community participation, water pricing.

Introduction
Science and technology plays an important role in the management of the natural resources. Water and sanitation, being one of the most important sectors and has a crucial role in the development of a country is not an exception. In India, the allocation of water is dependent on many socio-cultural factors due to its unique historical context. A vast majority of the population, especially in rural areas do not have access to safe drinking water and water borne diseases and deaths are commonplace. As a consequence, a number of projects and missions had been initiated to ensure wider reach and safety. Since 1970's the drinking water and sanitation sectors have been subjected to rigorous techno-scientific scrutiny. One of the marked features of these interventions was the dominance of technocrats and western path of development. This top to bottom down approach often proved ineffective and led to failure of the projects and missions due to slack acceptance by the people. Since 1990s the concept of community involvement in the devolution of projects and technology has slowly got wider acceptance and popularity in the development thinking. The present paper maps out some of the scientific and technological interventions in the water and sanitation sector in India during the post-independence period. It tries to explore the consequences of the technocratic dominance that was a defining feature of the development interventions in India. The paper also discusses the emergence of community participation in water governance and the neo-liberal shift of the sector.

1. Water Sector-After Independence
The subject of water in British India can be placed within the broader dynamics of colonial rule (D'Souza 2006) [1, 4].The colonial policies were based on control and commercialization which caused the substantial degradation of the traditional water harvesting technologies in India (Agarval & Narain 1997p. 623) [1]. It was supported by the advancement of science that helped the domination of a scientific administration to shape the forms of control (Gilmartin, 1994, p.1127) [7]. On the contrary the environmental policy and law in independent India has not evolved in anticipation of a problem, but rather has been a knee jerk reaction to existing problems. Priority was given for a radical change in the hitherto existing governance of the British administration.

A significant section of the scientific community, responded to the western science and technology "by articulating an alternative development philosophy that echoed the nationalist aspiration to self-reliance including technological sovereignty" (MacLeod & Kumar Deepak, 1995, p.269) [15]. While the greatest task of the government was to streamline the governance of a large, majority of poor population. The centralized control of the natural resources, especially water, assigned high priority in this process. It was materialized by objectively identify the ecological problem through scientific personnel with positivistic technical knowledge as well as design efficient solutions for the most pressing ones (Luke, 1996) [14]. A significant change in approach, not only the water governance but also the general trend of the government, was the domination of the positivist approach which submerges or marginalizes the local wisdom as unscientific. The drinking water policies of independent India were evolved based on the discourses on safety within the discourses of public health framework. These various policies and regulatory mechanisms were also a continuation of the colonial legacy based on the principles of control. Even though the development paradigm was based on an amorphous form of "socialism" up- hold by the intellectuals in political leadership, it was dominated by the over emphasis given to centralized bureaucratic and technocratic control (Price, 1968, p.217) [16]. The western concept of development dominant in India's policies on development was materialised through an all-embracing "Five Year Plans". But the over emphasis on science and technology for harnessing the natural resources and ensuring social justice ended with neither West nor East but a resultant interaction between them (Ibid). It was based on controlling the human behaviour to prevent water borne diseases; for example, cholera, rather than an understanding of the underlying social inequalities (Farmer, 1999) [6].

2. Dominance of Technocracy

In the middle of 1959, the Ministr y of Health of the Government of Indi a set up a Committee to review the developments that had taken place in national health in India in the last decade (Gupta,1962,p.807). The main foundation of this report rests on the recommendations made by the Bhore Committee in 1946 headed by Sir Joseph Bhore, one of the members of the Viceroy's Executive Council, to assess the conditions of health then prevailing in British India. In 1949 "Environmental Hygiene Committee" has been constituted under Dr.B.C. Dasgupta. Both the Committees gave priority to water supply and sanitation. The efforts of the state to provide safe water was a commingling of the discourses on water borne diseases and technological/technocratic solutions for it. Resituating the local expertise within the formal expertise institutions (Mitchell, 2002) [22]. through the production of knowledge on illness and death related with safe water, census taking, creation of large dams, establishment of ground water boards, pollution control etc. were also significant in this context. The notion of safety has also undertones of states control implied in the various acts to prevent and control of pollution of water and the environment (Ibid).While the above regulations directly deal with the water quality, there still exists huge inequality regarding the access and quantity of water. The legal aspects governing water resources continue to remain in a larger scale divorced from the social and economic realities (Jain, 1976) [13].The flagship programme of the government, initiated during the 1970s, such as the "Accelerated Rural Water Supply" (ARWSP) (1972-73), and the Minimum Needs Programme (MNP) (1974-75) also failed to curb the inequality in access to safe drinking water between the rich and poor. The declaration of International Water Supply and Sanitation Decade (IWSSD) from 1981 to 1990 which targeted 100 per cent coverage of safe drinking water supply and 80 per cent urban and 25 per cent rural sanitation by 1990 was a breakthrough in the history of water and sanitation sector of India. In response to the international agenda, the Government of India started "Technology Mission" (also called National Drinking Water Mission (NDWM)) in 1986. The mission, used technology for source finding, removal of chemical and bacterial contamination. Construction of low cost toilets using appropriate technology was also part of the mission. The NDWM was renamed Rajiv Gandhi National Drinking Water mission (RGNDWM) in 1991.The Rajiv Gandhi National Drinking Water Mission (RGNDWM) in 1991, restructured and renamed version of the Technology mission was an ambitious programme to expand the coverage of drinking water to all non-covered/no source habitations with the help of science and technology. The sixth five year plan included need for improved environmental quality in safe drinking water supply (Djik and Sijbesma, 2006) [5, 18, 20].The Centrally Sponsored Rural Sanitation Programme (CRSP) launched as part of the seventh plan in 1986, stressed the importance of the application of science and technology in drinking water sector (Ibid). It was restructured under the name of Total Sanitation Campaign (TSC) in 1999. TSC was a breakthrough in the concept of sanitation which is now expanded to include personal hygiene, home sanitation, safe water, garbage disposal, excreta disposal and waste water disposal (GOI, 1999) [8]. A noted characteristic of these entire target based missions and programmes is its strong commitment to science and technology and time to time international discourses on drinking water. It never addressed the local social realities of the Indian situations. The Comptroller and Auditor General of India (CAG) [3]., after reviewing of water and sanitation programmes implemented during the 1992-1997 observed that these programmes were plagued with deficiency in planning, unscientific source identification, revisiting of problems in villages/habitations, defunct water treatment plants, expenditure on non-priority areas, financial unaccountability and non-transparency, ineffective control, monitoring and review, excessive purchase of materials etc.(Ibid).These techno-scientific interventions is, and always has been, evolving in response to shifting political agendas, developing scientific/technological solutions, a strong commitment to the western notions on development and "known for non-planning and negligence" (CAG, 2002) [3].

3. Shift towards Decentralization

The concept of decentralization gained prominence in India with the realization that centralized planning alienates the people from the process of development (Ramakantan 2007) [17]. The most severe criticism against centralization was that it constraints the rights of the people (Chandhoke, 2003) [2]. The passing of Panchayathi Raj Act in 1993 had been seen as an alternative to this mode of governance. The Panchayathi Raj system is a three tier system with Gram Panchayath at the village level, Panchayath samiti at the block or intermediate level, and Zilla parishad at the district

level. Gram Sabha is the pivotal concept in the Panchayathi Raj system and decisions are taken through it. The central idea is the participation of the citizen in the entire process of development. It is envisaged that with the participation of the people could include in the programmes, ensuring its effective reach to the beneficiaries. But the move towards the decentralization of water sector in India had begun much earlier than the initiation of Panchayathi Raj System. It began with the Command Area Development (CAD) in 1974 aimed to hasten the utilization of the created irrigation potential through farmers' cooperation in allocation of water, charging of user fee and maintenance of the system (Vermillion, 1997) [23]. The concept is reinforced by the National Water Policy (NWP) of 1987 which proposed hike in the rate of the canal water and involvement of local people in canal management (GOI, 1987). The process of decentralization in the water and sanitation provisions has not been a singular effort. Rather it is a discursive formation constituted by multiple knowledge, agents and actors. It was the result of a combination of many serving factors such as insufficient investment by the government, poor financial outcome of the projects, and the primacy of private sector and market given by the neoliberal regime, initiated with the New Economic Policy in 1991.The government of India and the states together have spent about US$ 35 billion over the six decades of planning (Reddy, Fonseca, Katerina & Batchelor, 2013) [19]. An Average of US$ 4 billion per annum was spent during the 11th plan period (2007-2012) alone (Ibid). However the share of rural water and sanitation in the total plan outlay has remained around 2 per cent since the 1980s with a marginal share for sanitation (10%) (Ibid). Also one can see a gradual diminishing in the spending on water and sanitation sector. In 2008, the government spent 0.57 per cent of the GDP on water and sanitation which fell to 0.54 per cent in 2009 and further to 0.45 per cent in 2010 (Ibid). The decreased spending is clearly an indication of the intention of the state to minimal intervention in the welfare services such as water and sanitation. The new strategy forms out of the convergence of many internationally acclaimed concepts like sustainability, participation, appropriate technologies, efficiency, cost sharing etc. for example the Rajiv Gandhi National Drinking Water Mission (RGNDWM) states that:

- Institutionalising community based demand driven rural water supply programme with cost sharing instruments by communities, gradually replacing the current supply-driven, centrally maintained non-people participating rural water supply programme (GOI 1991).

In tune with these developments the revised guideline for Total Sanitation Campaign proposed a "demand driven approach" and "community led" and "people centred" development of the water and sanitation facilities (GOI, 1999) [11]. What is prominent in these policies is the shift in approach from once being considered an abundant resource, water is more and more seen as a "scarce resource" which reflected in the India's water policies. "Water is a prime natural resource, a basic need and a precious national asset" declared by the National water policy, 2002. The contextualization of water within the debate of scarcity has multitude dimensions. It includes technological solutions and alternative diffusion strategies. The debate on scarcity of water is often attributed in its large population and failure of the governmental agencies mechanisms to reach at the grass roots. The new discourse on community led, people centred development points to newer governance mechanism to delivery of basic need like water. It is supported by the governmental data through National sample Survey Organisation, census and the data on depletion, pollution etc. The national water policy also states that "water resources available to the country should be brought within the category of utilizable resources to the maximum possible extent" (GOI, 2002). These two arguments i.e., "scarcity" and "optimum utilization" which stand poles apart to find a common platform in the argument that the water supply should be demand driven. It was a break from the hitherto followed supply driven paradigm to meet the need of water for such diverse purposes such as drinking, sanitation, irrigation Industry etc. The welfare approach, which is followed in the basic service delivery to its citizens, makes water governance always a subject of the state with its total control over it. But this approach failed to bridge the huge gap in accessibility of safe drinking water especially in the rural areas and address issues such as water borne diseases and higher morbidity rate of, especially children. In this context of failed or inefficient intervention of government, due to huge external debt and the new liberalization policies, the approach of people participation got wider popularity. It is assumed that the citizens has a role in meeting their basic needs and sufficient measures has to be taken to increased their capacity for that. It is also emphasized in the National water policy and Total Sanitation Campaign programme.

4. Water Pricing

The issue of Water pricing in public water supply and sanitation system emerged in the context of high capital costs of creating capacities, high operation and maintenance (O&M) costs and poor cost recovery (Sankar,2006, p-53). In urban areas of India, following are the existing models of delivery of drinking water: State government owned water boards delivering to cities (e.g. Hyderabad, Delhi), (b) State government owned water boards providing capital works, to be managed and operated by cities (e.g. Karnataka, Kerala) and (c) City water departments responsible for the delivery of W&S Services (Mumbai, Kolkata) (Sridhar Lalitha, 2007) [21].But in the rural areas it is still either in the private sector (both private wells and other means of private water supply) or a small portion is covered by public tap system or public wells. In both urban and rural case, the pricing of water is done through direct collection or in the form of land or other taxes by the Panchayath. Apart from that, the issue of pricing of water and sanitation in India leads to some fundamental questions of states responsibility and social justice. It is often argued that community participation coupled with appropriate technology is a viable solution to meet the needs of the rural poor. Since the entire strategy revolves around the transferring of financial and management responsibilities to the local community, it is a pertinent question that to what extent the concept of cost recovery is applicable to the rural scenario. It prompted a number of studies on willingness to pay for the water and sanitation services. The, often manufactured, data in favour of willingness of the people served as a major justification for initiating participatory projects with user charges. In rural India, privatization is not an easy task considering the presence of wide network of civil society groups focusing on water rights and the protest of the affected people. For

example, with the privatization of Sheonath River in Chhatisgarh by Radius Water Limited, the debate on privatization of water has become for the first time the focus of the media and civil society in India (Note.1). Buckled under pressure of nation-wide protest by the civil society groups and the people affected, the agreement was cancelled in 2003 (World Bank, 1993). The private supply of piped water is also running in some states like Karnataka and Rajasthan but it is criticized for its quality of water and monopoly (Reddy & Dev 2006) [18, 19]. Over exploitation of ground water for profit is also a danger with the privatization. In this context "community participation" has been extolled as a viable alternative financing strategy for the rural water and sanitation sector. The community participation is ensured through the assistance of NGOs or other civil society organizations. Appropriate water and sanitation technologies are used based on the decision of the community. Allied empowerment activities such as Neighbour Hood Groups, and income generating activities act as an incentive for participation. The pricing of water and sanitation services glossed with the term 'community participation'. It involves a pluralistic strategy with multilevel planning and implementation moulded by the international funding agencies like the World Bank. This socio-economic and technological pluralism is a consensus model in delivering the services to the poor and the pricing is imposed with minimal resistance of the civil society. It is of prime concern in the community based and private diffusion of water and sanitation services that how it can be distributed in a non-discriminatory manner. The image of an Indian village and village community deserves great importance in this context. It is very complex with several castes, sub casts and other forms of socio-cultural variations. The concept of cost recovery has to be operated in a cohesive group dynamics. Water pricing, whether through community participation model and privatization model, involves a behavioural change of the rural community from a mere receiver of the benefits to active participation of an individual. Since the concept of 'active participation' entails monetary and physical participation of an individual or a community, it is clearly endowed to the historically attributed position of an individual in a social network. So the current water policy of India which encouraged a cost recovery approach that is based on business principles such as efficiency and demand has deep rooted implication on the concept of equality upheld by the constitution of India.

Conclusion

Water governance in Independent India always adopted a centralized and technocratic approach especially till 1990s. But the over emphasis on science and technology and western approach to development failed miserably due to the inability to capture the grassroots level realities. This has reflected in the numerous projects and missions implemented the water and sanitation sector too. After the introduction of New Economic Policy the trend of centralization lost its prominence and gave way to market forces. This has implications in drinking water sector also. But in the case of rural sector, it has adopted a different path. Instead of direct privatization water has been priced through projects that involve active community participation. The community participation is a process that involves the engagement of multiple agencies and actors such as external aid agencies, NGOs, civil society organizations etc. But this shift is implicitly neo-liberal in nature and water is perceived as a commodity through cost recovery.

Notes

1. In 2003 a Build Own Operate Transfer (BOOT) agreement was signed by the then Madhya Pradesh government and Radious water limited to give the ownership of the Sheonath river to the company for 22 years. The fishermen were banned from catch fish from the river and the peoples were stopped from using the river for bathing and washing clothes. The company had control and monopoly in the water supply to the Borai industrial area. The company had control over the ground water also. The farmers were prevented from install tube wells or pumps even a kilometre away from the river. They have installed meters on tube wells supplying water to the local industrial units and charged for the water supplied. For more details See Krishnakumar, AsFrontline, 7th November, 2003.

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