*International Research Journal of Social Sciences*_____ ISSN 2319–3565
Vol. **4(1),** 55-58, January **(2015)** *Int. Res. J. Social Sci.*

Policies Intervention for Groundwater Governance in Gujarat and Politics

Rajni Bala
Department of Political Science, Panjab University, Chandigarh, INDIA

Available online at: www.isca.in, www.isca.me
Received 15th September 2014, revised 23rd November 2014, accepted 29th December 2014

Abstract

Gujarat is a rapidly developing State where groundwater is a scarce source and ever increasing demand of water resources is creating conflicting interests in water management policies. It is also seen that for the last few decades, Wide-ranging interests of agriculture, industry and domestic sector along with natural environment have to be fulfilled from this natural resource. Analysis Review of existing groundwater governance instruments is revealing a point that here are a lot of limitations that deals with varied management issues arising due to different hydrogeological scenario in this state. It is found that goal of groundwater governance have been missed from the various policy instruments and contemporary governance instrument implementation are suggesting that economic instruments with attributes of tax, tradable right and subsidy need will helpful for conceiving clear aims and objective for the current situation. This paper has explored the insights on the policy interventions (direct and indirect tools) for groundwater governance in the state of Gujarat and its links with politics. The findings of this paper are illustrating a point that indirect way of governing the groundwater is more viable than the direct methods.

Keywords: Gujarat State, groundwater Scenario, policy Discourse and Politics.

Introduction

Due to the introduction of green revolution technology from the last four decades, agriculture in India has gone through enormous changes. Empirical studies noted that green revolution technology demanded more control over irrigation and more water due to water intensive seeds and to fulfill this purpose it was found that large canal systems were unable to utilize this demanding need. It was illustrating that canal system was not feasible due to its bureaucratic control and Groundwater irrigation was seen more as a feasible source for irrigation due to its easily accessible by the farmers. These advantages of groundwater over surface irrigation led to a sharp increase in its use and made a common concept of over-development and depletion of aquifer systems in most of the agrarian states of India. Gujarat is no exception to this process where groundwater availability is also in scarcity and more than 77 percent of its irrigation requirement utilized from groundwater[1]. On the other side, in surface water sources, it had been found that most part of surface water resources in Gujarat State had been concentrated in South Gujarat and many perennial rivers such as Mahi, Narmada, Tapi, Karjan and Damanganga are also flowed in this region. In north Gujarat, Saurashtra and Kacch have very poor surface water in which the rivers and rivulets have followed only in limited seasonal. During the period of 60s and 80, many major and medium irrigation projects have been built in three regions and only small river basins built in North Gujarat.[2] Water scarcity have increased the demand of groundwater and it's created a dense groundwater market, energy-irrigation nexus and strong farmer lobby at village level. Planning Commission reports are illustrating the alarming fact that 97 blocks are safe out of the 223 blocks in the state, while 69 are semi critical, 12 are critical and 31 over exploited. The per capita availability in north Gujarat and Saurashtra- Kutch is very low (130 m3 to 424 m3), putting tremendous pressure on ground water. Groundwater scarcity has also led to a situation of social and economic inequity among farmers. A group of academician and scholar advocated that positive type of governance system can be helpful for long term sustainability of this resource.

This paper has explored the insights on the policy interventions (direct and indirect tools) for groundwater governance from the last four decades and its links with politics. Further, aim of this paper is to find out the interaction of Political actors, farmers who are influencing the policies and critical analysis the approaches (direct and indirect) for sustainable groundwater governance in Gujarat

Groundwater and Policies intervention

To solve the water scarcity problem, the state government has implemented various policies and schemes, but it does not have an equal impact over all social groups. To create a bridge and to fill the gap between surface water and groundwater, the Gujarat government is implementing various projects and modernizes the old irrigation system. It had been seen from last decade, Gujarat's leaders and administrators have learned experiences from other countries for effective policies in groundwater regulation. For ecological sustainability, Gujarat's policy makers explored several options for direct regulation for individual tubewell owners[3]. In the direct governance of

groundwater; the groundwater model bill was an important tool for controlling the unsustainable use of groundwater. Groundwater Model Bill was circulated in 1970 by the Ministry of Water Resources in all states and union territories and this was counted a first step in legislation-based approach to control the use of groundwater in India. Basically, the purpose of these Model Bills (1970, 1992, 1996 and 2005) was to establish of a groundwater authority that have a right to notify those areas that are critical. After Indian constitution, it was stated that water is a state subject and some states like Punjab, Sikkim, Arunachal Pradesh, Tripura and Nagaland are not accepting this bill due to several reasons. At present, 11 States and UTs have enacted and implemented the legislation and 18 states are in the process of enacting the legislation. The groundwater depletion problem was clearly visible in the state of Gujarat but state government had applied this bill on a limited number of districts. Even it is also seen that the act was never implemented in full spirit due to a powerful farmers' lobby opposing any such regulatory measures in some critical depleted areas[1].

It has been illustrated from the last policy interventions by that state Gujarat has become the first state that had introduced legislation efforts to restrict groundwater extraction in 1973. In that period, it was believed that this bill is like a god gift for water-stressed states. But, former Chief Minister of Gujarat, Chimanbhai Patel did not accept this bill requirement and denied to sign the bill by saying that it will be put wrong impact on state's 0.3 million farmers[4].

Regulatory policies like Groundwater Model bill have been not achieved its goals due to strong farmer's pressure groups in agrarian states and Gujarat is one of the states among them. These farmer groups are formulating powerful pressure groups who are mobilizing themselves for their common concerns. India has a parliamentary democracy and political parties have fear from strong political elites who can simply hit on their powerful vote-banks and they do not want to lose it at any cost. Empirical evidences from other states like Punjab, Andhra Pradesh and international experiences from Mexico and Spain had proved a one thing that direct regulation of groundwater withdrawal by irrigators is difficult. This has stimulated for pragmatic and politically feasible tool for regulating groundwater misuse. One thing was assured that any tool may be feasible that will not impact on individual behavior of numberless farmers through law and policing but also be helpful in environment protection [3].

The state has attempted to solve the twin problems of declining aquifers and a bankrupt electricity industry. One of the article published in Annual 'Down to Earth' was depicting about state's efforts that "*After forty years in 2013, under the leadership of Narender Modi, the Gujarat government has passed a bill (The Irrigation and Drainage Bill of 2013) to tackle the problem of groundwater scarcity. The bill makes it mandatory for a farmer to apply for a licence from the canal officer of his area if he wants to construct a tubewell or borewell which depth have been exceeded from 45 metres. It also seeks to charge farmers for irrigation water reaching cultivated land within 200 metres of a canal either by percolation or leakage, surface flow or by means of a well-sunk from the canal*"[4]. It is realized that regulatory mechanism that have been adopted in 1973 for groundwater governance may be not a viable method due to nexus of energy and water. It was felt that the transaction costs for water will be the better option and for this concerned effort have been put into a complete overhaul of the energy sector with strategies and management.

Energy and irrigation nexus have started from the period of 1988 when the Gujarat Electricity Board (GEB) has introduced a new flat tariff system that have also changed the whole scenario of groundwater extraction and led to overexploitation. Up to 1988, farmers have got electricity that was based on metered use and it has created a groundwater market in water scarce areas. During the period of 1980s, farmers have got 18-20 hours of three-phase electricity per day, and to control the farm power subsidies, the Gujarati government began to reduce three-phase rural power supply and the power supply was often at low voltages and frequently damaged motors through tripping. Therefore, it has been assessed that electricity subsidies made a main cause of groundwater depletion and stolen power system in the state. the tubewell owners with the help of 'stolen power' sold the water at a very low price to landless sharecroppers and marginal farmers .Moreover, during this period, it was also realized that rationing of the electricity system may be threat for controlling the nexus between energy, irrigation and groundwater due to the large-scale farmers' political mobilization and the powerful vote bank politics which aim at preserving at all cost the farm-power. Flat-rate tariff on electricity from metered system had been introduced in the year of 1989 by the Gujarat Electricity Board that was connected to the horsepower of pumps. This change has been done on the expectation that the new flat-rate tariff system will be produced major beneficial productivity of agriculture sector and will create equity impacts on smallholder irrigators. Further it was also realized that this all have been done due to the strong pressure of farming classes who have mobilized support in the state's mass politics. Result of this that the flat-rate tariff system has been implemented without any effective rationing of farm power supply. That has led to a rapid increase in groundwater over-extraction and a lowering of groundwater levels. Further, it has also increased the demand for electricity connections for new tubewells.

To curb this situation, during 2001-2002, the International Water Management Institute had shared a proposal with key policy makers before Gujarat government and the Gujarat Electricity board. The Jyotigram scheme has been launched on the provisions of this proposal that was started with lot zeal. In Gujarati, Jyotigram means 'the light of the village' and the basic idea of this scheme was to improve the quality of rural life through better power supply environments. Initially, The Jyotigram scheme (JGS) was launched in eight districts of

Gujarat on a pilot basis in November, 2004 and further it was extended to the entire state. By 2006, 18000 villages of Gujarat state had been covered under JGS. In rural Gujarat, it was found that two changes occurred due to the implementation of JGS villages: (a) 24 h three phase power supplies for domestic uses, for schools, for hospitals, and village industries had started (b) Secondly, farmers had received 8 h per day of three-phase power supply with full voltage and on a preannounced schedule, after which power supply was discontinued on those feeders making it impossible for tubewell owners to use capacitors. Every village receives agricultural power during the day and night in alternate weeks that are pre-announced.[3] this policy innovation for reforming the supply of electricity and for proper water management is known and famous in policy frameworks as the Gujarat Model – Jyotigram. But the new system of governing groundwater had not achieved its targets, on the other side the dependency of farmers for groundwater irrigation have not been decreased, it had increased like other states and many farmers have been started to organize into power lobbies for maintaining power subsidies.

Several lessons have been learned from Gujarat State of governing depleted resource through regulating the electricity supply and the seven states of India (, Haryana, Punjab, Karnataka, Maharashtra, Andhra Pradesh, Madhya Pradesh and Rajasthan) have also separated their electricity supply for agriculture and other consumers. Most of the evaluation that has done in the studies indicated that here is a need of equal need for discouraging to vote bank politics; it is not only nexus between energy and water level but also a nexus between farmers and with those politicians who are in power. One can also argue, or see that in spite of the great linkage between water level and energy, no other states of India have followed an attempt of regulating electricity supply and groundwater. One can also assess the role of farmer's pressure groups in electricity reforms in Gujarat. For instance, in pre JGS, 11 KV feeders served at the lowest level in which a group of 2–5 villages wherein all connections in these villages (domestic, agricultural, as well as commercial) were through this feeder. But in Post-Jyotigram Scheme, State has taken a decision of the bifurcation of the feeders into agricultural and non-agricultural feeders. Meters were installed on each feeder, especially the agri-feeders to identify the source of any significantly-greater-than-expected demand at any particular feeder[5].

This has been done on the basis of several researches and studies which were indicating that due to flat tariffs for irrigation pumps based on horsepower had led to the overexploitation of groundwater and the poor supply of power to agriculture had become a major political issue in Gujarat's mass politics. For Example, in June 2003, the Government of Gujarat had announced a hike in the electricity tariff for agriculture from the then existing rates of Rs 500/HP to Rs 1,260/HP [6]. But this had led to a mass agitation among farmers against state government. The state government has given its own point on power hiking that

"Power *tariff hikes for farmers are imperative under the power sector reforms it has initiated. In the past five years, the Gujarat Electricity Board (GEB) has accumulated a loss of Rs.6, 000 crores. The State took a $200 million loan from the Asian Development Bank for reforms in the power sector. Reducing subsidies were one of the conditionalities. "The subsidy to agriculture is Rs.1, 700 crores every year," said Saurabh Patel, Minister for Energy (Frontline, 2004[7])*

The most vociferous expression of the farmers' discontent with Chief Minister Narendra Modi has come from within the Sangh Parivar itself. The Bharatiya Kisan Sangh (BKS) has been protesting against the steep power tariff hikes for agriculture. They have also started protesting against the Gujarat electricity Board who has presented a proposal to install meters for farm pumpsets. This agitation has gained support of government and they reduced the tariffs 900/ Hp in Oct, 2003. But that was not the victory of BKS, thousands of farmers stood against BKS and joined Congress led Farmer union named Khedut Sangarash Samiti (KSS).[7]

In terms of certain policies for increasing supply and curtailing demand of water, the government included direct and indirect forms of regulation to check groundwater exploitation. It would also be seen that direct tools of governing that groundwater resource are not more effectively implemented due to farmer's pressure groups and vote bank politics but indirect tools to eradicate the nexus between irrigation-energy- groundwater are more successful from past decade. The reasons for the non-implementation of the regulations are many. Foremost among them is the Patel farmers' lobby. Patels are one of the largest resource-rich caste groups in north Gujarat; they constitute the strongest political influence in state politics. The exercise of their political influence has ensured that the regulatory views of legislation are not carried out on the land.

Alternative or Complementary Governance tools for Groundwater

The State has also adopted institutional change for proper groundwater governance and for this, major invested have done on rainwater harvesting projects, groundwater recharge and drip irrigation etc. Furthermore, it is also interesting point to see that Gujarat was amongst 11 states in which the first watershed guidelines of 1995-96 were implemented. The main programmes introduced have been the Integrated Wastelands Development Programme (IWDP), Drought Prone Area Programme (DPAP), Desert Development Programme (DDP) and the Employment Assurance Scheme (EAS) by the Department of Rural Development and National Watershed Development Projects for Rainfed Areas (NWDPRA) by the Department of Agriculture. In the watershed development, the Department of Forest has also been involved with the Joint Forest Management Programme (JFMP).[8]

The Government of Gujarat has been engaged in the development of state tubewells with the belief that it is the state responsibility

to provide irrigation. For groundwater exploration, construction and management of state tubewells, groundwater Resource Development Corporation has been established. To improve the functioning of state tubewells and proper utilization of groundwater on equity basis, Gujarat government had launched a programme of turnover state tubewells to co-operatives societies of farmers with land in command area. In 1987, the corporation has begun to leasing out the state tubewells (350 tubewells) to local farmers. Comparative analysis between state tubewell's co-operative societies and irrigation companies which are based on kinship based organizations had proved that tubewells companies of north Gujarat had more robust model of farmer's organization than tubewells co-operative institutions. The result of the functioning of state tubewells had also shown that turnover programme which was empowered by Gujarat Groundwater Development Corporation for five years had failed due to weak decision formation at local level[9].

Current Issues of Groundwater Governance, Farmer pressure and Politics in Gujarat

In 2000, Central groundwater Board has notified Gandhinagar Taluka area for regulating groundwater development where groundwater aquifer below 200 m depth and declared as 'protected aquifers' exclusively for drinking and domestic water use. The GGWA has taken few regulatory measures to restrict additional development of groundwater resource through irrigation well in 57 overexploited and saline blocks. But, some leaders are not accepting the suggestions of central groundwater boards while saying the water and groundwater is a water issue and centre agency has no right to intervene in their work. For instance, Mr. MS Patel (the Water Resources Secretary, Government of Gujarat) was reported to have said that "*The CGWB or any other Central agency has no business interfering in a State subject (groundwater utilisation). Instead of giving unsolicited advice, the CGWB should provide us financial and technical assistance to help Gujarat implement its proposed groundwater recharge schemes in different districts"*[6]. Similarly, the Chairman of Gujarat Water Resource Development Corporation had sent a letter to the Chairman of Central Groundwater Board that was depicting*"without providing an alternative surface water supply and without implementing surface-water recharge projects, the government cannot prevent farmers from extracting groundwater which is their only water source"*.[6]

Conclusion

Thus, state laws have never been properly implemented; moreover, the issue is politically sensitive and the ruling government is not prepared to alienate the farming community, which forms the core of their vote bank, particularly the wealthier segments which are the main users of groundwater. Therefore, groundwater-related polices that have implemented in Gujarat have done very little deal with scarcity, depletion or quality of groundwater but more to do with rural politics that was manifested in the presence of farmer lobbies. This has been due to "vote bank- politics", as over the years groundwater irrigators in Gujarat have formed a powerful pressure group, which mobilizes large numbers of votes in the state's general elections on the issue of irrigation[8]. However under the umbrella of Jyotigram scheme, good quality power to the farm sector has been supplied and this all derived maximum economic benefits for agriculture. It is believed that introduction of metering and charging of electricity system can motivate farmers to use water and electricity efficiently. The later determination of the state government to provide new power connections for agro wells on farmer are agreeing to install meters and pay on the basis of expenditure is a welcoming step to revert this trend.

References

1. Prakash Anjal, The Dark Zone: Groundwater Irrigation, Politics and Social Power in North Gujarat. Wageningen Univeristy, Neitherland **(2005)**
2. Kumar M. Dinesh, A. Narayanamoorthy et.al., Gujarat's Agricultural Growth Story: Exploding Some Myths, Occasional Paper, Institute for Resource Analysis and Hyderabad **(2010)**
3. T. Shah, S. Bhatt, R.K. Shah and J. Talati, Groundwater Governance through Electricity Supply Management: Assessing an Innovative Intervention in Gujarat, Western India. Agricultural Water Management, **95,** 1233-42 **(2008)**
4. Anupam Chakravartty Gujarat Passes Groundwater Bill, Down To Earth http://www.downtoearth.org.in/content /gujarat-passes-groundwater-bill , March 31 **(2013)**
5. Hector Garduno, India Groundwater Governance Case, online accessed from http://www.groundwatergovernance.org /fileadmin/user_upload/groundwatergovernance/docs/Country _studies/GWGovernanceIndia.pdf **(2011)**
6. Aditi Mukherji, Political ecology of groundwater: the contrasting case of water-abundant West Bengal and water-scarce Gujarat, India, Hydrogeology Journal, **14,** 392–406 **(2006)**
7. http://www.frontline.in/static/html/fl2112/stories/20040618003803100.htm
8. Naz Farhad, Socio-Cultural Implications of the Community-Based Water Management: A Case Study of Gujarat, India, *Ph.D. Thesis*, Bonn University **(2011)**
9. Shashi Kolavalli and K.V. Raju, Turnover of Public Tubewells by Gujarat Water Resources Development Corporation, http://publications.iwmi.org/pdf/H043559.pdf Also see Tushaar Shah et.al., Turnover of State Tubewells to Farmer Co-operatives: Assessment of Gujarat's Experience, India, accessed from http://publications.iwmi.org /pdf/h043529.pdf