PRIVATE-PUBLIC PARTNERSHIP : A NUANCE, NUISANCE OR NECESSITY ?

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Abstract

In democracy, role of the government and that of the society decide direction and span of development of the nation. Particularly for resource distribution and management these roles are very important in shaping the future. It is found that generally people's expectations are too high and they tend to be dependent on the government for all necessities and welfare activities. This mindset debilitates the social setup and affects its very fabric and culture which finally leads to a doom for the nation itself. Basic requirement is of supportive or encouraging role of the government instead of a granting or a doling one. It can instill sense of responsibility, awareness and need of mutual dependence within the social mind, which are essential characteristics of a healthy society. In case management of water resources based on shared ideas amongst the society which not only precludes social tensions but brings about social parity without remarkable external control of the government is devised, *prima facie* it might look an idealistic legacy but a state of India, namely Gujarat has put such a mechanism in practice with success. It has included private-public partnership and innovative financial mechanism to implement water conservation program on a huge scale. In Gujarat, under "Sardar Patel Participatory Water Conservation Program", with the help of public partnership over 47000 checkdams (micro weirs across rivulets) have been constructed and with participation of industrial establishments about 150 weirs have been constructed across identified rivers. They all have proven very effective in improving ground water levels which had gone down seriously because of overexploitation. This program has brought about impressive results and positive socio-economic changes. Indian Institute of Management, Ahmedabad - an eminent management school has made a detailed study of the scheme and its impacts. Crisis of Gujarat, the context in which the program was launched, objectives of the government behind the program, success in implementation of the same and the reasons behind the success are discussed in the paper. It underlines private-public partnership as an innovative way of financing and implementing governmental schemes referencing an already implemented case study. There is a belief that loosing control of the government gives way to irregularities in implementation of any project. To what extent this belief is real is also discussed in the paper.

Keywords : *private-public partnership, Sardar Patel Participatory Water Conservation Program, water resources, awareness, mutual dependence*

The Perspective :

In the post-independence era the primary emphasis was given to food by the Government of India. Agricultural revolution had been in the top of its agenda, which was the right strategy of

course. As a part of agricultural revolution it was rather imperative to develop the irrigation sector at the same pace. Many irrigation projects – major and medium were constructed in five decades after independence, which created a huge irrigation potential throughout the country and eventually led the country to a state of independence at least for food grains and that was a great achievement in itself. However, considering the size of fertile land the country has been gifted by nature, agriculture as the backbone of the economy, population, industrialization, etc. the hard fact is that irrigation potential created so far by irrigation projects can not meet the need of water and a sizable land is still deprived of irrigation facility. By and large about 35 % of agricultural land is in a position to get irrigation facilities. A sustainable solution of this problem that can be actualized at a much faster rate than the previous one has been the need of the hour.

Gujarat – Stocktaking of Water Resources :

Gujarat State, located in the western part of India, presents an interesting case study from the view of innovative approaches for water management. Total area of Gujarat is 1,96,000 sq. KM out of which 96,000 sq. KM is cultivable. The state is blessed with 185 rivers of which only 8 are perennial and all the eight are located in the southern part leaving almost 80% area of the state as naturally underprivileged. Irrigation potential developed so far is 34,000 sq. KM considering the potential to be created by Sardar Sarovar Project – one of the largest water resources projects of the world (www.sardarsarovardam.org). Thus over 60,000 sq. KM of land is rainfed. Total villages of Gujarat are about 18,000 out of which 11,000 are still deprived of irrigation facilities. Rains are only seasonal, expected only during monsoon lasting only for about two to three months.

Gujarat can be broadly classified in to four zones from water scenario point of view – South Gujarat, North Gujarat, Saurashtra and Kutchchh. Table-1 provides details of rainfall variations in these zones.

Table-1 Annual Rainfall Distribution

Region	Annual Rainfall in mm
South Gujarat	800 to 2000
North Gujarat	400 to 600
Saurashtra	400 to 800
Kutchchh	Less than 400

Table-2 shows details of irrigation projects constructed and storage potential created in various zones.

Table-2 Storage Capacity of Surface Water

Area	No. of Irrigation Projects	Live Storage Capacity in MCM	Percentage Irrigation Potential
South Gujarat	29	10400	69.34
North Gujarat	13	2100	14.00
Saurashtra	121	2250	15.00
Kutchchh	20	250	1.66
Total	**183**	**15000**	**100**

Two aspects are apparent from the above tables – rainfall variation is large and irrigation potential developed is lopsided. In South Gujarat water resources are more and storage potential created is also large whereas in North Gujarat and Kutchchh rainfall is scanty and storage potential is very small. *Prima facie* it may look perfectly sound a practice. But if some one looks deep into the matter, he would surely rethink whether to call it a sound practice.

Whether to Go for a Paradigm Shift :

There are few basic questions that are required to be answered after a good deal of cogitation, debate and discussion at various levels amongst all stakeholders. If we simply continue going ahead in the same direction as it has been in the post independence era, when shall we be able to provide minimum required irrigation facilities to our rainfed land i.e. 2/3 of our total agricultural land ? Until the rainfed land gets permanent irrigation facilities, do we have ever thought of any alternative time being solution or can we afford to leave it precariously ? Do we have any time accounted for the opportunity cost of the amounts we have been spending for major and medium irrigation projects ? Is it feasible to provide irrigation through conventional major or medium irrigation projects everywhere ? What are the socio-economic impacts of this approach – positive as well negative; and whether overall result is healthy on people's and government's sides ? What will be the source of funds for all such projects ? What will be the size of government machinery required to address these issues ?

Considering all aforesaid basic questions one would certainly accept that engineering does not exclude mini and micro irrigation projects, implementation of which may be even easier and faster. One must think of distributed sort of resource management rather than the centralized concept in order to address the real problem. For funds, we can not just bank up on the conventional financial management system i.e. through revenue earned out of taxes and fees or loans from various agencies which keep on piling burden on public exchequer; rather, some newer concept of resource mobilization must be conceived. When the challenge is there from all sides and conventional approaches have fallen short to be effective, some innovative and inventive sort of mechanism must be thought of and experimented at least in a small domain.

A Novel Nuance :

In order to answer all the questions narrated above, Government of Gujarat introduced in 2000 an innovative scheme named as "Sardar Patel Participatory Water Conservation Programme" under which checkdams were conceived to be constructed in large number on participatory basis. Checkdams are small bunds across rivulets or tributaries to rivers with the primary objective of conserving the rain water and are made up of stone masonry or concrete.

The policy was drafted with consideration of important social aspects and norms of functioning of the government and impact of the scheme on existing irrigation projects. People's contribution was conceived as 40 % of the cost of the checkdam and Government's contribution as 60 %. This ratio 60:40 was arrived at on the basis of the fact that in civil engineering projects of this kind normally 60 % was the material cost and 40 % the labor cost; cost of material to be provided by the government and cost of labor by the beneficiaries. Because village dwellers and farmers were beneficiaries and were used to hard work on their farms could put their labor component directly to construction of checkdams. For some specialized items like shuttering or binding of reinforcement they could take help from local small contractors. This would again enable them to come close to one another and serve the cause of societal services. On the other hand, government would be able to save 40 % funds and a lot of administrative burden. Legal complexities of land acquisition and court matters could also be eschewed as the land on which the checkdams were to be constructed was to be chosen and identified by the group of beneficiaries. Terms for distribution of water stored by the proposed checkdam were to be internally worked out by the beneficiaries for their internal understanding. All these were aimed at strengthening the local society.

Technically checkdams are the most efficient means for ground water recharge particularly when subsoil is rocky with fissures and aquifers are interconnected. Moreover, by checking water no riparian rights are encroached as the height of the checkdams is designed such that only a small quantum of water is checked and spill over is permitted without any outflanking. No special technology is involved in the construction and sedimentation of flowing silt at the checkdams are side advantages. The deposited sediment could be cleared up by the beneficiaries regularly and be used for maintaining fertility of their farms. Water checked at various locations could be used by the beneficiaries when there is a delay in rainfall and hence there could be protective irrigation. All practical circumstances were properly envisaged while framing the policy, which also focused technical aspects in detail.

Basic intention behind this programme was to involve people in the process of deriving solution of a grave problem they had been facing since years and thereby giving them an opportunity to learn to live at their own. The motive was to change the mindset from "The Government should do" to "Let us do". It was also sure that in case desired success could not be attained, Government had nothing to loose; but in case success could be attained even partly, it would be a foundation for a positive changeover.

Probable Hurdles :

In saving 40 % fund and putting aside liabilities of land acquisition and administrative intricacies, 60 % fund was put to risk in the sense that if the scheme did not succeed, there was no chance of recovery. Therefore, to minimize the size of experiment, only 2000 checkdams with estimated cost of Rs. 600 million in which responsibility of the government was of only Rs. 360 million were sanctioned. Moreover, payment was planned to be made in stages so as to move cautiously and keep a close monitoring.

Because responsibility of construction was of farmers and beneficiaries, problem of their limited technical knowledge was the biggest hurdle. To sort out this problem, standardization of design as per catchment areas and height of the checkdams were made available and a network of engineers was given responsibility to assist the farmers during implementation. The same teams of engineers were given responsibilities to look after problems related to construction.

Formation of beneficiary groups was also a problem in the context that beneficiaries were required to be located in near proximity. They needed to have confluence of mind to arrive at the proposal of a checkdam. Actually, this requirement took some time for them to make a proposal but it benefited in long term as the proposals could be founded on a common understating which required discussions at their level, they could share their views and in case there was any lacuna in understating of an individual, it could be duly addressed. This process gave an opportunity to synthesize the society.

In case many checkdams were constructed in a particular catchment, inflow to existing irrigation reservoir could be reduced. To avoid this problem, proper monitoring was arranged.

The checkdam could be useful in case one or two rainfalls do not occur in time, but could not be expected to provide immunity against no rainfall at all. This fact must be properly conveyed to the beneficiaries, otherwise they may expect too much from the programme and finally be despondent in such a situation. Only realistic and fair picture of the purpose and limitations of the programme must be given to them. This task is really a crucial one and needs effective communication on the part of government officials who interacted with the probable participants.

Entry Of Nuisance :

When the system is exposed to local factors, obviously nuisance is likely to enter. Local influential people in connection with political leaders might try to misuse the liberty. This factor has to be faced and only on the merits of the case approval must be given. Moreover, some influences on policy making could also be tried. In order to address such issues, extra attention is required to be paid.

Some influential people could manage construction of a checkdam on a rivulet in the upstream of barely needy people. The same way more checkdams could be demanded by strong groups. This also requires a thorough assessment of need on the same rivulet while approving a checkdam. Judicious process of approval is essential for implementation of this philosophy.

Experiment Proved Meaningful :

In the year 2000 when the programme was launched it was not expected to get instant response of the people. Public awareness programmes were arranged. It was felt that people should understand their responsibility rather than relying on government so far day-to-day issues were concerned. All these efforts resulted into an environment conducive to co-operation and collectiveness, which subsequently provided the platform for invoking people's participation in active form for solving water crisis they had been facing since years together.

Overwhelming response of the people was unprecedented and more than 13000 checkdams were constructed in only one year.

Inspired from the success the Government thought that advantages of the programme, its socio-economic impacts, reasons behind success, etc. should be formally studied by some experts since without having detailed study of all dimensions of any programme, it should not be continued for a long time. It was also intended that during the study if any point that required special attention came to notice, in the subsequent stage care might be taken of. Keeping these ideas in mind an independent evaluation of the works executed by the Water Resources Department with the help of people's participation under "Sardar Patel Participatory Water Conservation Programme" was handed over to The Indian Institute of Management, Ahmedabad. Senior professors of the same institute along with their team members carried out a systematic study and furnished their report to the Government of Gujarat on 10th June, 2002. About 9000 checkdams were constructed when the study was conducted. Their team visited villages, interviewed farmers and beneficiaries, studied market trends, etc. Objectives of the study included assessment of technical and socio-economic impacts of the programme. The main findings of the detailed study are narrated below in a nutshell.

- Reasonable cost - The average estimated cost of 9044 Checkdams from the five reference districts was Rs. 190 thousand, which was much less than the estimated cost.
- People's participation - Personal supervision and responsible behavior from the people was worth noticing.
- Storage capacity - The data from 8717 Checkdams from the five reference districts indicated a potential storage capacity of 129.85 MCM. The average storage capacity of constructed Checkdams was 0.015 MCM.
- Ground water recharge - The study has indicated that recharge of 138.47 MCM of runoff water during a drought year became possible. In a normal rainfall year with 2 overflows assumed, the generated capacity could be 307.71 MCM.
- Quality of ground water – Quality of ground water was found continuously improving and chlorides were found to be reducing.
- Benefit to wells - In total 62225 wells were benefited from the Checkdams constructed in the five reference districts. Wells were situated near checkdams at the distance between 7 ft. and 9000 ft. Average depth of the wells was found 60 ft.
- Benefits to agriculture - In drought year in the areas, in which checkdams were constructed, income per bigha i.e. per 2327 sq.m. was increased by 7 % whereas in the areas where no checkdams were constructed there was a decline of 23 % in the

income per bigha. About 200 bighas i.e. 465400 sq.m. of land per checkdam might be protected against drought. About 2 million bighas i.e. 4.654 billion sq.m.of land could be protected against drought due to 10257 checkdams.

- Cost benefit - Expenditure per checkdam was Rs. 190,000. Total benefits of Rs. 2,51,582 could be obtained in three seasons. Thus, cost of the checkdam was found to have been recovered in only two seasons.
- Monetary contribution - Average contribution by each beneficiary was Rs. 300 per bigha.
- Non-monetary contribution - About 75 % people have contributed their efforts and 28 % have provided machinery.
- Drinking water problem - About 70 % of farmers opined that shortage of drinking water and of grass could be lessened.
- Checkdams overflown - 60 % of the farmers opined that their checkdams were over flown. 39 % of the farmers observed their checkdams overflown once and 22 % of farmers witnessed their checkdams overflown twice in a year.
- Impact on land prices - Average price hike of Rs. 19,244 per bigha, i.e. per 2327 sq.m. was estimated.
- Benefits experienced by people - In some villages people had to buy water through tankers for ten to eleven months at the cost of Rs. 200 to Rs. 250 per month. This period was curtailed by six months due to check dams. The hand pumps which were found dried up earlier were also found live because of recharge.

Adding To Good Experiences :

The “Sardar Patel Participatory Programme” was continued with constant reforms in the implementation methodology and by 2005, about 47,000 checkdams were constructed all over Gujarat. Total cost of these checkdams was Rs. 9,500 million out of which share of the government was Rs. 5,700 million. Wherever they were constructed, benefits started being witnessed by the farmers and beneficiaries. Ground water tables improved and finally the annual agricultural yield of the state went up to Rs. 210,000 million from Rs. 120,000 million.

It was also thought to construct small weirs across identified rivers with defined gorge and rocky or semi rocky bed. Such weirs or big checkdams being costlier and farms of beneficiary farmers away from rivers, they could not be expected to contribute 40 % of the share in the cost. The design was supposed to be done on case-to-case basis and detailed engineering with detailed local features was required to be done, extra efforts were required to be input. Moreover, construction required complex procedures and special foundation treatment in some cases. Therefore, responsibility of such checkdams were entrusted to some NGOs and industrial houses which they liked as their social obligation. 150 checkdams across some identified rivers were constructed under this scheme. It is observed that earlier these rivers used to have water for only three months of the monsoon whereas thereafter they have been containing water round the year. This is because of rise in ground water levels in the semi-rocky substrata and partial checking of floods across the rivers with steep bed that has reduced water velocity. Earlier the whole region, i.e. Saurashtra where the study was conducted, was considered to be a dry one whereas now the situation has improved to a great extent as described in above mentioned sections. What is important to note is that systematic and sensible efforts were made with synergy to envisage the

problem in holistic manner and hence these results. Some plates are provided to give an idea as to how the checkdams have been functioning.

Plate – 1 Checkdam Across A River

Plate – 2 Checkdam Across A River

Conclusion :

For nations with limited resources and high population, distribution of resources and thereby prospects to prosperity is the problem and administration becomes really very difficult. In such situations, instead of using conventional methods of resource allocations to the centralized project authorities, possibly resulting into delayed implementation and incurring multifold expenditure, a decentralized approach of private-public partnership with sensible implementation methodology is worth opting for. It is not only a nuance with some nuisance element which must be properly taken care of but also a necessity when early results with limited resources are essential to be obtained for larger public. Such private-public partnership also helps in evolution of a more matured and harmonic public society – imbibed with responsibility of ownership in order to be capable of contributing in the crisis solving efforts of a democratic government.