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Science, Observer Outlook and Failure of the Social Sector Policies in India

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Abstract:
The attempt to harness science for societal benefit was started in India since the time of Jawaharlal Nehru. But experience compels us to think that neither the policy makers nor the scientists have adequately connected research with what society wants. While making policies not only the observer outlook, but also the difference in outlook of different stakeholders have largely been ignored. In this paper an attempt is made to relate science with observer outlook in respect of social sector policies in India. In order to cover a long period of time two such sectors are selected drinking water and sanitation where a good many no. of policies have been going on since 1951. From the analysis,it is found that soft science has failed to communicate social needs to scientific community through social sector policies. Rather inability of social science widens the gap between the two types of sciences. Both the type of sciences are developing parallely while both of them boast of their scientific character. In this race,the fundamental question of science, i.e.WHY, has lost its importance. Social sector policies are mere imposition on the society. Even the development of applied sciences are not always for the betterment of the society and even the scientists are not ready to ask themselves why it is not. Policy makers, scientists and society are not ready to play with WHY. This contributes negatively to the integration between the two types of sciences and thereby leading to the failure of most of the policies in India.

Keywords: *Observer, observer outlook, social sector, soft science, hard science*

1. Introduction

Since independence science and technology have been central to India's economic development effort. Jawaharlal Nehru, pioneer of modern India could realize the importance of science and technology for economic development. In fact high rate of growth experienced by the world economy in the post industrialization era is due to science and technology. Science has been used by both the developed and developing countries as a tool for economic expansion. In doing so, the very definition of underdeveloped country lost its ground. Science can help the economy in the following ways—

1. It can drive the economy through the free market system and sustained growth.
2. It can produce knowledge and technology that promotes environmentally sustainable, people oriented development and long term management of resources.

While India is striving to reap benefits from a mixture of above two ways, global consciousness is seen to grow in recent years to harness science for societal benefit. Scientific advantage is itself not a guarantee to social benefit. The World Conference on Science convened in Budapest in July 1999 adopted the declaration on Science and the Use of Scientific knowledge where in the very preamble it was stated-

"The science should be at the service of humanity as a whole and should contribute to providing everyone with a deeper understanding of nature and society, a better quality of life and a sustainable and healthy environment for present and future generation."It raises several questions. Who will harness science for societal benefit and how? Why after so many years of development, we need to think seriously about harnessing science for societal benefit? Will international consensus suffice to this realization.?At the country level will the government be able to harness science for societal benefit – through science policy? Does experience support it?

We know UPA Government policy paralysis was not just confined to the social and economic sectors but manifested itself quite evidently across various segments of science and technology institutions including universities. The failure of the government resulted from the poor governance mechanism as from low priority accorded to science and technology in the overall budget. In 2003 India set its goal of increasing research and development investment from 1% of GDP to 2% by 2003. But the irony is that the goal remained the same even after 10 years while announcing the national science policy in 2013. Science and its power continue to advance, yet our ability to harness that power for maximum social benefit remains stagnant. Neither policy makers nor scientists have adequately connected the research with what the society wants. If we consider science as discovery, it has the capacity to offer several alternative paths to the society. Even if scientists are expected to advance the war against disease and unemployment, the ultimate

implementation of these projects will be at the hands of a different group of people. To the extent the current science policy tries to incorporate considerations of societal outcomes into the national research agenda, it does so through very small and rather marginalized programmes under DST. It is still not certain whether the private investment friendly new Government will follow the UPA government? In the Union budget 2015-16,the Government has provided Rs. 356 billion for research to various department in the Ministries of science, atomic energy, defence, health,, earth sciences, new and renewable energy source. This allocation is still a mere 2% of the total 17,755 billion available with the Government for the expenses this year. But one thing is certain the very success of Make in India Campaign will get halted if investment in Rand D is not increased. Another important question is to harness science for societal benefit should we consider social science in the realm of science? How far soft science should help the hard science in this noble endeavour? What does our experience of implementing social sector policies indicate? How does observer outlook influence the integration of soft and hard science for societal benefit?

In this paper an attempt is made to relate science with observer outlook in respect of failure of social sector policies in India. In order to cover a long period of time we have selected two sectors –Drinking Water and Sanitation where a good many number of policies have been going on since 1951. We will like to concentrate on rural water supply and sanitation. Water supply and sanitation were added to the national agenda during the first five year plan of 1951-56 and increasing investments have been made in subsequent plans. Accelerated Rural Water Supply Programme was introduced in 1972. After that water sector experienced programmes and policies like National Drinking Water Mission in 1986, first National Water Policy in 1987, MDWM renamed Rajiv Gandhi National Drinking Water mission in 1999, Swajaldhara in 2002, Bharat Nirman in 2005, National Rural Drinking Water Quality Monitoring and Surveillance in 2006, National Rural Drinking Water Programme (Revised) in 2009. Nirmal Bharat Abhiyan previously called total sanitation program was introduced in 1999 in sanitation sector. NOW we have come to Swacch Bharat from Nirmal Bharat. PM Modi has promised to invest 2 lakh crores in the toilets in next 5 years. India has now installed around 5 lakh new toilets this year. During this long period of implementing the same policies in one or other form whose outlook they are carrying with?.

1.1. Observer Outlook Ignored

Pure science is based on observation and experiments while social science is based on observation. Take one experience at the early stage of so called total sanitation as published in Science Today October 1979. In 1969, Social Activist Anubrata Roy and a group of fellow IITians went to a village near Pune. They felt that what the village evidently required was a sanitary facility. Full of enthusiasm they fetched the bricks, the asbestos sheets and the certain core and within a sort while had constructed a toilet anyone would have been proud of. Four months later one of his friends was dispatched to the village to take photographs of their contribution to the public health. When he came back, he reported that he could not take any photograph as the toilet shed was being used to shelter goods. The realization was that they had built a facility for those who did not need it and ignored the requirement for the goats. This is not the reality of 1969 only this is the reality of today. Even in 2011-12, some labourers of Lohpohia tea gardens were seen to use the pit for rearing pig or poultry. In spite of the availability of technology why the people are not ready to make use of it while they are taking advantage of technology otherwise. If people in the slum areas can own TV and mobiles why not toilets. This experience shows, science is not merely based on observation it should take into account the observer also. In the whole process of scientific development we have forgotten one thing that scientific knowledge is of greatest importance if it increases public understanding and awareness. Can science be for science's sake? Faced with the problems of disease and starvation, what mankind could have gained by sending two people to moon. Open defecation cannot be stopped by providing a hole in the ground with an oversized umbrella over it and christening it a toilet. There appears to be unnecessary hurry in building toilets all over the country without understanding the theory behind it. Going in for the cheapest standard specification to meet quantity and time targets will defeat the purpose in the long run. Should we wait for Bill and Melinda Gates Foundation to reinvent the toilets in India. Are we going to defy the knowledge which they acquire from the experiences and which have the strong scientific basis. Being the wrong interpreter of maladies the Government is imposing something on the people which itself is the most unscientific. In most cases the pit of low cost toilets have already been filled up. It could have been deeper, but deeper pits could cause faecal contamination of sub surface water source. People have that knowledge, so they are not using it. Ground water contamination due to ill-designed latrines close to water source is a general problem plaguing many parts of the country. Just 22kms away from Jorhat town of Assam, some households of Moran Koibarta Gaon did not construct sanitary latrines till 2012 as they knew that the pond near the latrines within the small plot of land water would get contaminated. Now with the piped water supply they have started construction of sanitary latrines.

Each geography has unique characteristics-unique soil condition, depth of water table, flooding, temperature variation, availability of sunlight, distribution of household means of extraction or supply of water, the existence or absence of a sewage system. These factors guide the understanding of the requirements of the area, and help determine suitable toilet design. Disease causing bacteria can travel 10 m down vertically and 50 m horizontally. These must be prevented from contaminating ground water resources such as well, ponds and under ground water stream.

1.2. Observer and Observation Relationship

Is Sacch Bharat simply a middle class aspiration of a clean city? Not a desperate physical needs of the poor? Delhi on the morning of 30th January 1995, was waking up to another winter day. In the well to do colony of Ashok Vihar early risers were setting off on morning walk, some accompanied by their pet dogs. As one of these residents walked into their neighbourhood park, the only open area in the locality, he saw a young man, poorly clad, walking away with an empty bottle in hand. Incensed, he caught the man, called his neighbours and the police. A group of enraged house owners and two police constables descended on the youth and within a

minute beat him to death. (source: EPW,19 95).It is not only the aspiration of the elderly class to a clean city that is at stake, but also the right to the city itself of the most of its residents if we change our observer outlook from the dominant class to the victims. The experts or scientists require the specific definition of their problems while the people facing it are not equipped to define the problem. Take the case prevalence of flourosis among the people of Tapatjuri (Nagaon) resulting from the ground water contamination. It is not only that observation and observers are important but the relationship between the two is important. PHED officials as a observer is an outsider to the site of observation. If we could examine the problem from the point of view of those who were affected by flourosis, would it not introduce a new dimension which might lead to the solution of the problem.

The current trend towards privatization in many countries is influencing both the focus and practice of science. In many cases, it has increased the research capacity and knowledge in selected areas, while undermining public sector science, specially fundamental research and efforts to solve socially important to which commercial enterprises have no interest. This has compelled some communities to believe that technical innovations to benefit only a priviledged minority. Commodification of social needs by the government itself through its various social sector policies has in fact increased the risk of exploitation of technological innovation by the rich minorities with little benefit to the poor. While research is going on to develop new and new methods to ensure safe water for richer section, access to poorer community of fluoride affected area is limited only to small earthen filter developed by an NGO. Revealed preference theory can guide neither the policy makers nor the scientists when the society itself lacks the alternative. Santhal and Pahadiya tribals of Jharkhand have a long history of hardship. In the great famine of 1976 a good many number of these people of the forest of eastern Bihar died leading to a drastic drop in their population. The Paharia Welfare Department was set up in response to the famine to address the issue of tribal livelihood and food security. However, water insecurity the root cause of famine left untouched due to fractured observer observation relationship. Flagship development programmes in india have not been designed or modified based on field level observation, whether from the point view of soft science or hard science.

In our agenda for harnessing science for societal benefit, we need to think of ways to link scientific research more closely to the societal results that we want to achieve.

How important the relationship between observer and observation relationship can be understood from another example. In order to supply water in flood affected areas through hand pumps in Assam, OXFAM tap the sub soil water from the very smaller depth from the ground level. In doing so there is the every possibility of contaminated water being pumped out. Also issues related to placement of such hand pumps and availability of any environmental hazard like Kutcha latrines are neglected. More importantly water from such hand pumps are not monitored. Observer Oxfam in its move to bridge the gap between observation and application of technology in fact misuse technology. In this so called agenda of social development are not we deliberately making the science a scapegoat.

1.3. Who are the Observers?

In this game of social development what matters most is-Who are the observers? Common People, Policy Makers or the scientists? Each of them has separate explanation of the same problem.

PHED department of Assam through hand pumps crippled more than 4000 people in Tapatjuri, Dikharumukh, Nijparkhowa villages of Haldhiati area under Akashiganga Gaon Panchayat PHED detected fluoride contamination long ago in 2000 but till then it affected good many number of people but it has been supplying untreated water since then. Efforts are now being made to take the help from spring source in nearby hills. Despite having well equipped laboratory, no attempt was made by the department to test water quality regularly until symptoms of skletel flourosis became prominent in their body. Nothing has been done in Tapatjuri area to upgrade the nutritional status of the people while the scientists have already shown the relationship between nutritional deficiency and capacity to fight with flourosis.

1.4. Who will integrate the Observers?

Above mentioned types of experiences reflects the biased attitudes of all the categories of observers. Soft science has even failed to communicate social needs to scientific community through social sector policies. Rather inability of social science widens the gap between the two. Both the types of science are developing parallely while both of them boast of their scientific character. In this race, the fundamental question of science lost it importance. That is why? Social sector policies exemplifies the imposition of policy maker's view on the society. Even development of applied sciences is not always for the betterment of the society and even scientists are not ready to ask themselves why it is not. Society sometimes do not know why they want it, why don't? Policy makers don't always want to play with Why? Policy formulation is just a routine work.

This question why is the basis of whatever development our society, philosophy and science have attained till today. This fundamental question of knowledge will imbibe the scientific spirit on all the categories of observer creating a cycle of give and take encompassing all and facilitating smooth harnessing of science for societal benefit. If any of the observer stop this search for WHY in the middle of the path this agenda of harnessing science for societal development will get halted.

2. Conclusion

A holistic approach demands that science draws on the contribution of the humanities, local knowledge system, aboriginal wisdom and wide varities of cultural values. What we require the cooperation and integration between the natural and social sciences to understand properly the use of science for the benefit of the society while each of them maintaining true scientific character.

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