



The Role of Social Entrepreneurs in Changing The Water Crisis in India

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ABSTRACT

In India, shortage of water and pathetic management practices have lead to poor water reserves and sanitation facilities which are posing a major environmental challenge. The authorities have done very little to conserve water during off season. In this critical situation it is imperative that someone takes proactive steps to resolve this crisis. It is here the authors of this research paper feel that the role of social entrepreneurs is of prime importance because the solution to this problem lies in educating the masses and starting the project from grass root level. In order that direction could be seen for this grave situation in our country an effort has been made to interact with people and review literature in this context. The areas which the paper tries to evaluate is the role of social entrepreneurs and the authorities in improving the water conditions in India. The paper also analyzes the prospects and areas of water harvesting as a practical solution to this problem.

KEYWORDS : Social entrepreneurs, water shortage, water harvesting, proactive steps.

Introduction :

One of the most important resources for existence is water but unfortunately it appears to be draining out at a very fast pace. There have been recurring monsoon failures in India which have resulted in the worst draughts in 30 years, which have scorched the earth, ruined crops and lead to the death of farmers and even caused panic with regards to the food security of our country. In India, one in two persons does not have access to good potable drinking water. Only 63 % of urban population receives piped water supply.

There are many NGO's who are aware of this problem of water scarcity in our country but unfortunately most of them have been unsuccessful in getting to the root cause of this problem. At the most they focus on temporary solutions to water scarcity problems whenever they arise by gathering funds or facilitating water to these areas. As a result they work more as charity organisations. The need of the hour is that, social entrepreneurs should take this problem as a cause and try to resolve it by educating the people in urban as well as rural areas with regards to the importance of conserving water when it is available in abundance specially during monsoons. This practice is also called as water harvesting. We have a prime example of Cherrapunji in Meghalaya, which records the highest rainfall in India but unfortunately faces drinking water shortage during summer.

Social entrepreneurs are individuals with innovative solutions to society's most pressing **social** problems. They are ambitious and persistent, tackling major **social** issues and offering new ideas for wide-scale change. (https://www.ashoka.org/social_entrepreneur) The role of social entrepreneurs is of utmost importance in helping to resolve the current water crisis in India. This is a chronic problem where the people at various levels in urban and rural areas need to be communicated and made aware of the benefits and advantages of water harvesting. This communication with the masses requires lot of effort and persistence because people from different backgrounds usually have different mindsets. It is here precisely the role of the social entrepreneur is of utmost importance, because the social entrepreneur will work towards resolving the problems with vigour and enthusiasm which can come only from people who are motivated to bring about a positive change.

According to (Alter, 2004; Alvord, Brown & Letts, 2004; Bornstein, 2007; Dees, 2001; Mair & Martí, 2006; Martin & Osberg, 2007; Trivedi & Stokols, 2011) various theories of social entrepreneurship have emphasized a single common area of social entrepreneurship ventures that is of devising creative ways to address long standing social problems. But then a research done by (Hamschmidt & Pirson, 2011) indicates that though these social entrepreneurs were oriented to-

wards social problems most of them were unsuccessful in creating positive and sustained social change. They felt that the initiatives taken by these social enterprises more often than not have lead to the social organisations becoming akin to charitable institutions. This paper tries to analyse how social entrepreneurs can create and sustain social change and successfully address social problem related to water crisis in India.

India has a diverse population that is three times the size of United States. As per the World bank, though India has taken positive steps to reduce poverty, the number of people who live in poverty are very disproportionate to the number of people who are middle income. We have a combined rate of over 52 % of both rural and urban poor. In spite of India making improvements over the past few decades to increase the availability and improve the quality of drinking water, it is finding it difficult to cater to the needs of such a huge population. Though there are plans implemented in urban areas which are expanding rapidly, the Indian rural areas are left out and face severe water shortages. In spite of improving the quality of drinking water, there are various other sources of water which are polluted by chemicals and over 21 % of diseases in India are water related. It is also observed that only a meagre 33 % of the countries population has access to traditional sanitation.

One area of worry is that India may lack a long term availability of drinking water resources. The government lacks in proper planning as it looks for only temporary solutions to a problem, Apart from that there is lot of corruption and red tapism which hampers the smooth functioning of systems. The Indian economy thrives basically on agriculture and for this there is a huge need for water to support the production of grains. And it is seen all over the world, countries which have large agricultural output, more water consumption for producing grain damages the water table.

The future scenario with regards to water is pretty dark for India. It is observed that the scarcity of potable water is expected to worsen as the Indian population forecasted by the year 2050 is nearly 1.6 billion. This water crisis problem is expected to be a global phenomenon in the near future with people predicting water wars between states and nations.

Literature Review :

The planning commission always laid emphasis on building large dams that have been the mainstay of irrigation in our country. But which are now recognised to be limited to provide large water storages as per today's requirements. If we look at the past

,the rich heritage of our country will show that there have been water conservation practices as far back as the Indus Valley civilization (3300 – 1700 BC). We also are aware of large number of water tanks which are found in the deccan which have been in existence for ages. The cauvery delta canals are since the second century and the Yamuna canals were constructed originally in the fourth century.

There were a number of parks and gardens established by various rulers that had fountains and water cooling systems. Among the numerous artificial lakes that were created is the famous 36 square kilometer Jaisamand lake, known to be the largest artificial lake in Asia build in Udaipur by Maharaja Jai Singh in 1685.

The Human need for the importance of water is apparent in some of history's most famous civilizations, such as Mesopotamian in the Tigris Euphrates valley (3300 – 2000 BC). The Nile Valley (3200 – 1000 BC) , the Yellow River valley, China (2000 – 200 BC) and Harappan in the Indus valley. If we look at today's current scenario of our country, we are facing a chronic water shortage problem and the water reservoirs available today are not sufficient to cater to the needs of a country with a population exceeding 1.3 billion.

One of the main solutions for the chronic water shortage problem is rainwater harvesting. In this type of activity water is gathered and accumulated for re-use on site. The idea is to save the water and not allow it to run off and get wasted. Rainwater can be usually saved from rivers or roof tops. There is another method of collecting water and diverting it to deep pits and wells. These are reservoirs which could be used in difficult times. Water collected by this method could be used for gardens, agriculture, live-stock. This water can be even used for domestic purposes with proper treatment.

There are times when people have to go through regional water restrictions and rain water harvesting comes to their rescue. It has been observed that even developed countries most of the times use harvested water to supplement the original supply. Rain water harvesting further helps in critical times of a drought and reduces demand on wells and borewells which help and enable the ground table water levels to be sustained. Rain water harvesting is a boon because it can be used as potable water since it is free of salinity and other salts.

Objectives :

1. To analyse whether social entrepreneurs can bring about a change for the improvement of water crisis in India.
2. To study the role of authorities in resolving the water crisis.
3. To find practical solutions for sustaining water supply.

Research Methodology :

An initial exploratory study comprising secondary data search was conducted in order to identify the current situation of water crisis and the immense need of social entrepreneurs.

Secondary source of data like internet, magazines and books were used to do exploratory studies. Relevant variables were generated and questionnaire was developed to obtain primary data from the market. 53 respondents selected were people facing water problems and based on convenience of researcher. Data collected was analyzed using statistical tools like frequency charts, pie diagrams etc. Requisite conclusions were developed and recommendations made.

Data Sources:

Primary data was collected through online and offline survey. The questionnaire was prepared asking respondents about their perception on the issues leading to water crisis and also some solutions to the problem. The questionnaire was sent through mail and hardcopy to people. The questionnaire mainly consists of closed ended questions and statements with Likert scale rating options. The questionnaires were filled by the respondents themselves. The respondent was free to give his opinion on the questions.

Sample details :



Hypothesis :

Hypothesis 1

HO : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is same across age groups

HO1 : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is not the same across age groups

Hypothesis 2 :

HO : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is same across income groups

HO1 : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is not the same across income groups

Hypothesis 3 :

HO : 80% of the population feel that the current water crisis could have been avoided by proper planning by authorities

HO1 : More than 80% of the population feel that the current water crisis could have been avoided by proper planning by authorities

Analysis and Discussions:

Hypothesis 1

HO : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is same across age groups

HO1 : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is not the same across age groups

		Social entrepreneurs can play an important role to resolve this crisis	A sustainable solution to water crisis can be brought about by social entrepreneurs
Age Group	< 25 yrs	3.80	3.50
	> 45 yrs	4.40	4.20
	25 to 45 yrs	3.79	3.86
	Total	3.85	3.75

Anova: Two-Factor Without Replication				
SUMMARY	Count	Sum	Average	Variance
< 25 yrs	2	7.3	3.65	0.045
> 45 yrs	2	8.6	4.3	0.02
25 to 45 yrs	2	7.642857143	3.821429	0.002551
Social entrepreneurs can play an important role to resolve this crisis	3	11.98571429	3.995238	0.122925
A sustainable solution to water crisis can be brought about by social entrepreneurs	3	11.55714286	3.852381	0.122517

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	0.453945578	2	0.226973	12.28913	0.075249	19
Columns	0.030612245	1	0.030612	1.657459	0.326819	18.51282
Error	0.036938776	2	0.018469			
Total	0.521496599	5				

Since, $F_{observed} < F_{critical}$, we accept the Null.

Hence, we can conclude that the perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is same across age groups

Hypothesis 2 :

H_0 : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is same across income groups

H_{01} : The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is not the same across income groups

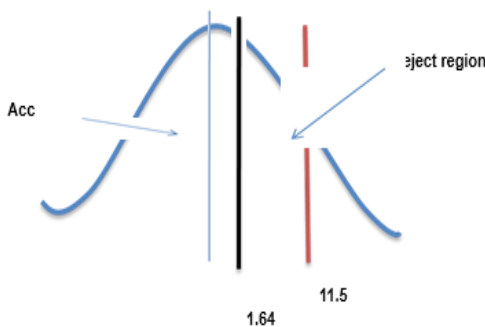
		Social entrepreneurs can play an important role to resolve this crisis	A sustainable solution to water crisis can be brought about by social entrepreneurs
Age Group	< 30,000	3.33	3.60
	> 50,000	4.05	3.70
	30,000 to 50,000	4.06	3.94

Anova: Two-Factor Without Replication				
SUMMARY	Count	Sum	Average	Variance
< 30,000	2	6.933333333	3.466667	0.035556
> 50,000	2	7.75	3.875	0.06125
30,000 to 50,000	2	8	4	0.006173
Social entrepreneurs can play an important role to resolve this crisis	3	11.43888889	3.812963	0.172541

n	x	p'	p	q	tail	alpha	confidence	probability	z critical	z observed
53	47	0.886792	0.8	0.2	right	0.05	0.95	0.95	1.64	11.50

Since $z_{observed} > z_{critical}$, we reject the null

Hence we conclude that : More than 80% of the population feel that the current water crisis could have been avoided by proper planning by authorities



Conclusions :

As it has been observed in this paper that India is going through a major crisis of scarcity of water and there is an urgent need to resolve this problem on a war footing. Though at times rainfall is erratic, proper techniques are not being adopted for water retention and water harvesting, which are important because the catchment areas do not

A sustainable solution to water crisis can be brought about by social entrepreneurs	3	11.24444444	3.748148	0.031399
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ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	0.311203704	2	0.155602	3.219006	0.237023	19
Columns	0.00630144	1	0.006301	0.130361	0.75263	18.51282
Error	0.096676955	2	0.048338			
Total	0.414182099	5				

Since, $F_{observed} < F_{critical}$, we accept the Null.

Hence, we can conclude that The perception that Social entrepreneurs can bring about a significant change for improving water crisis in India is same across income groups

Hypothesis 3 :

H_0 : 80% of the population feel that the current water crisis could have been avoided by proper planning by authorities

H_{01} : More than 80% of the population feel that the current water crisis could have been avoided by proper planning by authorities

	The current water crisis could have been avoided by proper planning by authorities
Strongly Disagree	1
Disagree	0
Neutral	5
Agree	22
Strongly Agree	25
Total	53

accumulate the required quantity of water. Hence, in this study we have observed that social entrepreneurs can play a prime role in educating the masses in terms of water retention and water harvesting. It has been further observed that people from different age and income groups have a consensus when it comes to social entrepreneurs taking initiative to resolve water scarcity problem. The authors of the paper recommend that social entrepreneurs should be encouraged and supported in their endeavour to resolve this problem. The survey also has found that there is a lack of required leadership and planning which could have saved the people from this mammoth problem.

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