

Water Resources and Other Infrastructural Development for Poverty Alleviation

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Introduction

In India, the Civil Engineering community and the construction industry are quite busy with the ongoing massive strides towards infrastructure development. However, the benefit of this apparent prosperity is not trickling down to the poor who constitute a very large section of its population of 1.2 billion. India, it seems, is pursuing a development model based largely on consumerism aimed at GDP growth which is not best suited to serve the major section of its people.

Infrastructural facilities are being improved in practically all sectors however, it appears that the activities are going on in a somewhat uncoordinated manner and lacking in an integrated and holistic approach. Apart from development in housing, transportation, power, ports, airports, education, healthcare, tourism, IT and telecommunication, water is a key issue which must not be forgotten. Water resources and other infrastructural development projects can contribute significantly in employment generation and alleviation of poverty by involving the local people in planning, implementation, management and operation of these projects.

Poverty and Its Causes

It is the poor people themselves who can best define and describe poverty. In reality, only those with no first-hand experience of poverty define and describe poverty. Many of the Indian poor take poverty as their fate.

Some of the available definitions of poverty are:

Poverty is the state of being without the necessities of daily living, lack of resources, essential goods and services.

Poverty is severe deprivation of basic human needs including food, safe drinking water, sanitation, healthcare, shelter, education and information.

Poverty is social exclusion, dependency and inability to lead a normal life. Poverty is the collective condition of poor groups, and sometimes nations/states are regarded as poor, or euphemistically, as developing nations.

The World Bank identifies “extreme poverty” as being people who live on less than US\$ 1 a day and “poverty” as those living on less than US \$ 2 a day. On that standard according to UN Population Reference Bureau Report, 81% of the Indian population can be treated as poor.

In politics, Rightists see poverty as related to laziness. The Leftists see it more in terms of social justice and non-availability of opportunity in education and skill development. Lack of individual initiative, poor industrialisation, meagre agricultural opportunities, geographic remoteness and poor infrastructure facilities are often considered as important causes of poverty. But the central cause appears to be unequal distribution of wealth and exploitation by those having economic and political power. Once this inequality is created, the disparity only tends to increase.

Development of water resources and infrastructure aiming at an equitable distribution of wealth generated through the development process can make a significant contribution towards alleviation of poverty. Civil Engineers as development practitioners have to play a key role in this effort.

How Poor is India?

In a World Bank Report, it is said that 1/3 of India’s population live on less than US \$ 1 a day meaning, about 40 crores of Indians live in extreme poverty. In a survey conducted in the past by a world body India was quite low in human development index, ranking 127 out of 155 countries surveyed; at par with Pakistan but below Bangladesh and Sri Lanka. A research report by Adrian White, recently released shows that India’s happiness level is amongst the poorest- 125 out of 178 countries surveyed, with China, Bangladesh, Nepal, and Bhutan ranking above and Pakistan just below India. From these it is amply clear that in spite of India has a long way to go to reach the level of a developed country. In India, death due to cholera, typhoid, jaundice, gastroenteritis, malaria, and dengue is one of the highest in the world. Needless to say, most of these diseases are due to lack of safe drinking water and sanitation in most parts of India.

Water Resources Development

Water is an essential life-sustaining compound. The basic human needs of secure food supply and freedom from diseases depend on it. Smooth functioning of hospital and health services relies on availability of clean water. Economic development requires energy resources and industrial activities, both of which depend on water.

Population pressure on forest resources can accelerate land degradation and compromise watershed functions increasing the vulnerability of the poorest communities. Global warming, rising sea levels, uncertain effects of ecosystems and increased climatic variability are some of the changes expected to create disproportionate and significant impact on developing

countries like India. No development initiative will succeed unless the required water services are secured and provided. Much more needs to be done with water in the ongoing planning and development process in India. Water is a primary life-giving resource and its availability is a most vital component in socio-economic development and alleviation of poverty.

Although 70% of the earth's surface is covered by water, only 1% of it is available as a source of drinking water. Precipitation is the main source of water and its distribution in India is uneven in both space and time.

In India, more than 50% of urban population does not have a sewerage system. Groundwater is being pumped out at an alarming rate much faster than the natural recharge. Water use for India's irrigation system is quite wasteful and inefficient.

India is quite rich in water resources compared to many other countries. In some parts of India, about 90% of the annual rainfall occurs in a very limited period of the year. The world's demand for fresh water is doubling every 20 years. There is close link between poverty and lack of water. Malnourished poor people are often found in areas suffering from water shortage. Population growth, which increases the demand for water, is also high in very poor areas.

Forests are good at naturally cleansing the water. It is observed that tree-forested watersheds provide remarkably clean water. In order to address the water issue, a holistic approach is called for aiming at reducing water consumption, reusing water and recycling used water.

Infrastructure Development

Infrastructure development is expected to generate economic growth. Economic development in the real sense will be meaningful only if it substantially benefits the poorest of the poor. Unless this target is met the development is only superficial and cosmetic in nature. This is what is happening with the ongoing infrastructure development all over India. The benefit is enjoyed by a selected few in the top and is not percolating down to the poor who constitute the bulk of the Indian population. The central challenge is technological innovation to benefit the poor and the environment.

Education and information are key factors. IT and telecommunications offer a tremendous potential to bring information, resources and opportunities to the most remote corners with the application of distance learning. The poor in India are certainly not dull but most of them neither have the motivation to learn nor the necessary essential facilities available within easy reach. This has been made amply clear through the ongoing adult literacy programs. IT together with electronic media can continue to play an ever-increasing role in mass communication with the consequent removal of illiteracy and age old superstitions.

The Civil Engineer must appreciate that the ultimate beneficiary should be the common people, most of whom are poor by accepted global standards. The infrastructure projects need to make optimum utilisation of local materials and manpower, wherever possible, involving the local people and communities including their training and integration into the economy.

Employment generation is a key factor in poverty alleviation. This should be possible through their active participation in infrastructure projects during planning, implementation, operation and maintenance.

The Way Forward

Water resources and other infrastructural development projects can contribute significantly to poverty alleviation. India's major problem is a fundamental disconnection between the governing elites and millions of underprivileged poor. In 1980, Rajiv Gandhi had remarked that only 15 paise of every Rupee earmarked for the poor actually reached its intended target. The rest was sucked out of the system by middlemen, bureaucrats and politicians. Although since then, a four decades have elapsed, this situation, by and large, remains unaltered. Corruption in India is said to be one of the highest in the world.

The urgent need of the hour is to establish a society and work culture free of corruption. We have to evolve a mechanism to involve the local people to the full extent, train and upgrade their skills in water resources and infrastructure projects. These projects can contribute to the alleviation of poverty. Some of these projects are listed below. The list, however, is indicative only and not exhaustive.

Water Resources Development Projects:

Preservation and improvement of wetlands, ponds, lakes, water bodies.

De-silting and widening of small rivers and canals and keeping them navigable.

River Bank Protection and River Training.

Small Irrigation and Fishery.

Rain Water Harvesting - Percolation dams, Check dams, Barriers, Sub-surface dams.

Inland Water Transportation - Country boats, motorised boats or rowing boats.

Inter-linking of Rivers.

Low-head Hydro-electric Plants.

Other Infrastructural Development Projects:

Development of village roads and local transportation.

Horticulture and plantation - Preservation and expansion of forests.

Low-Cost Housing with optimum utilisation of locally available materials and manpower - residential units, community buildings, schools, etc.

Non-conventional Energy – Solar Energy, Wind energy, Bio-gas Plant, etc.

In India, there are possibilities of many more such small projects of great national importance which can be taken up with direct benefit to the poor. It has been observed that doling out money to the poor is not effective in poverty reduction. The aim should be to help the poor so that they learn to help themselves. Development in the real sense will be achieved only when we can ensure that the projects are Of the People, By the People and For the People.

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