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WATER SCARCITY: A SWORD OF DAMOCLES HANGING OVER THE HEADS OF COMING GENERATION.

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"Water is the abject necessity for any kind of life to exist" – Atharva Veda

Water is the most precious gift of nature. It is relevant in the chemistry of all biological systems. Water is the deliverer of life on earth. Great rivers were the wombs of great civilizations. This point out the fact that humans had recognized the importance and necessity of water in maintaining life on earth. It is the most powerful element on the planet. Water is vital for agricultural, industrial, household, recreational and environmental activities. Among these, water for drinking purpose is the most fundamental one.

Earth is often called the water planet. About 97% of Earth's water is in the ocean, and most fresh water is contained in glaciers or underground aquifers; only a small portion of Earth's water is found in streams, lakes, and rivers. The relative availability of water is the most important factor in distinguishing habitats for different living organisms.

Looming water scarcity has been emerging as a major anxiety among all countries of the globe. Water challenges will increase drastically in the coming years. Increasing population growth and growing incomes will lead to greater water consumption, as well as more waste. According to the UN World Water Development Report, by 2050, at least one in four people are likely to live in a country affected by chronic or recurring shortages of freshwater."There will be constant competition over water, between farming families and urban dwellers, environmental conservationists and industrialists, minorities living off natural resources and entrepreneurs seeking to commodity the resources base for commercial gain" according to UNICEF report on Indian water.

According to the Millennium Development Goals Report 2012, 783 million people, or 11 per cent of the global population, remain without access to an improved source of drinking water. Water resource management thus has become an urgent and growing need. The United Nations has long been addressing the global crisis caused by insufficient drinking water supply to satisfy

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basic human needs and growing demands on the world's water resources to meet human needs. It is a prerequisite for human health and well-being as well as for the preservation of the natural environment.

India shares 16 percent of the world's population, 2.45 percent of the world's land resources and 4 percent of its water resources. India's finite and fragile water resources are stressed and depleting, while sector demands (including drinking water, industry, agriculture, and others) are growing rapidly in line with urbanisation, population increases, rising incomes and industrial growth. This has resulted in declining per capita availability and deteriorating quality. Inter-sector allocations, planning, and management of drinking water resources have thus emerged as a major challenge.

For a state that is better known as the 'Land of 44 Rivers', the biggest issue being faced in Kerala is that of a lack of water, not just any water, but potable water. The State accounts for 1.18 percent of the land area, 3.44 percent of the total population and 3.58percent of the water resources in the country. Of the available water resources, it makes use of only 60 percent. The rest is flows away in to the sea. Creating accessibility in drinking water availability is very important. A study on water use and resources conducted by the Centre of Excellence in Environmental Economics (CEEE) of the Kerala Agricultural University (KAU) predicts severe water scarcity in the State by 2021. Following are found to be the major reasons for decling per capita availability of drinking water in Kerala:

1. Change in the pattern of rainfall.
2. High density of wells.
3. High dependence on ground water.
4. Declining ground water levels.
5. Urbanization.
6. High population density.
7. Climate change.
8. Mismanagement of water sources.
9. Industrialization.
10. Pollution.

Water; we are living or alive because of water. This constitute the importance of water in our life. We have enough water in our earth. But most of the countries or people are facing accute water shortage. We can see the problem associated with water in two ways. One is related to the quantity and other is related to the quality. 72% or 2/3rd of our earth surface is covered with water. So scarcity of clean water is the real problem rather than scarcity of water.

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We get water from different sources. But from where we get it from the prescribed quantity and quality is the real problem. Now-a-days the demand for clean water is running forward and the supply is running backward. If sufficient measures were not taken, the gap between demand and supply will widen and most of the experts predict a global war for water.

Creating accessibility in drinking water availability is very important. In order to maintain the availability of water in adequate quality and quantity, the Government have introduced Centrally Sponcered, State sponcered and externally aided projects in the State. Water supply programmes were initiated and implemented even before the formation of the State. Water related activities in the geographical area of the present State of Kerala began for the first time in the year 1833 under the leadership of Velu Thampi Dalawa. From 1833 to the beginning of the 20th century, minor water supply schemes as single attempts, were planned and executed in an unorganized manner.

History of organized pipe water supply in Kerala dates back to the beginning of 20th century. First organized water supply scheme was the water supply scheme to Thrivananthapuram in 1931. Second in the series was Ernakulam water supply scheme, which was a part of the State of Cochin. It was installed in 1934 with Periyar River as its source. This was followed by Kozhikkode water supply scheme in the District of Malabar. Alleppey water supply scheme in the State of Travancore was started in 1939. Now there are 1072 water supply schemes are running in Kerala.

Jalanidhi is one among this kind, funded by World Bank, which was introduced in the State during 2001 with the main objective of assisting the Government of Kerala to improve the quality of Rural Water Supply and Environmental Sanitation. Project implementation plan was organized and appraised in mid 2000 and an agreement with the World Bank was signed on 4th January 2001. The Government has also created an autonomous institution, viz, 'Kerala Rural Water Supply and Sanitation Agency (KRWSA)' to implement this project. The project expected to cover 3 lakh households, benefiting a population of more than 15 lakh from the selected Grama Panchyats. Communities in the project areas are expected to benefit from improved and sustainable water supply and environmental sanitation services. The stakeholders enjoyed time savings in collecting water, better health from more and cleaner water, improved sanitation and hygiene practises. Women are considered as the most beneficial group. The project made efforts to mainstream women users into the planning and decision making activities. Grama panchayat involved in the project got benefited from panchayat strengthening programmes and mobilisation of internal resources from beneficiaries. Government of Kerala improved institutional capacity to facilitate water supply and sanitation services in the state due to the project. The Project has been designed as a demand responsive Project with a community driven development approach in its

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implementation. The project integrated water supply with sanitation, health promotion, and environmental management and ground water re-charge measures. Jalanidhi seeks to cover 92 Grama Panchayats from the four districts of Thrissur, Palakkad, Malappuram and Kozhikode and 18 Grama Panchayats from the remaining nine districts, excluding Alappuzha. The areas were selected on the basis of water scarcity.

The present paper is concentrated on 4 panchayats viz; Kaduthuruthy and Kadanad from Kottayam district and Konni and kodumon from Pathanamthitta district.

The NGOs and private sector consulting agencies are playing an important role in the implementation and management of various water supply schemes in Jalanidhi project.

The NGOs which provide assistance in the selected panchayats are following:

Kottayam District

Grama Panchayats selected from Kottayam district	Name of Supporting Organisation
Kadanad	Evangelickal Social Action Forum (ESAF), Mannuthy, Thrissur
Kaduthuruthy	Pala Social Welfare Society (PSWS), Pala

Pathanamthitta District

Grama Panchayats selected from Pathanamthitta district	Name of Supporting Organisation
Kodumon	Pazhakulam Social Service Society (PASS), Adoor
Konni	Bodhana, Thiruvalla

The details of the selected gramapanchayats are given below:

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Basic Statistics of selected Grama Panchayats

Sl.No	Items	Kottayam		Pathanamthitta	
		Kadanad	Kaduthuruthy	Kodumon	Konni
1.	No.of wards	11	16	14	15
2.	Area in sq. Km	40	32.73	36.36	41.5
3.	Total no. Of households	3248	7372	7283	6914
4.	Population	16265	33793	28691	30609
5.	SC Households	194	901	1452	616
6.	ST Households	35	12	1	5
7.	BPL Households	1420	3268	2254	1700
8.	No. of households having adequate water supply	1138	2263	3318	4952

It can be concluded from the above table that 2110 households in Kadanad panchayat, 5109 households in Kaduthuruthy panchayat, 3965 households in Kodumon panchayat and 1962 households in Konni Panchayat are not having adequate water supply coverage.

Jalanidhi Coverage

Sl.No	Items	Kottayam		Pathanamthitta	
		Kadanad	Kaduthuruthy	Kodumon	Konni
1.	No. of Households having adequate drinking water supply	1138	2263	3318	4952
2.	SC House holds having adequate drinking water	32	116	358	214
3.	ST House holds having adequate drinking water	6	8	0	0
4.	BPL House holds having adequate drinking water	298	683	748	994
5.	No. of Households covered under Jalanidhi	1638	2310	1472	1539
6.	% of coverage of eligible HHs	77.63	66.60	37.12	78.44
7.	No. of SC Households covered under Jalanidhi	60	352	655	78

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8.	% of coverage of eligible SC HHs	37.04	44.84	59.87	21.89
9.	No. of ST Households covered under Jalanidhi	9	4	0	2
10.	% of coverage of eligible ST HHs	31.03	100	0	40
11.	No. of BPL Households covered under Jalanidhi	516	1349	830	527
12.	% of coverage of eligible BPL HHs	45.98	52.18	55.11	74.64

Among the 4 grama panchayats selected for the study, Kadanad had water supply coverage of 35% prior to the implementation of Jalanidhi and it was 31% in Kaduthuruthy, 46% in Kodumon and 72% in Konni. Implemetation of Jalanidhi has created an additional coverage of 50% in Kadanad, 31% in Kaduthuruthy, 20% in Kodumon and 21% in Konni. So the total water supply reached 62% to 93% in each panchayat after the implementation of Jalanidhi. The project strongly suggests that 16% of the beneficiaries should be from SC/ST communities. Beyond that seperate schemes are implemented under Jalanidhi for ST community.

Availability of water, especially quality water is an inevitable factor for daily life and its availability to be ensured is a major concern of the Government. Water supply and sanitation programmes have been shown to be an immense success when the community is involved right from the start of any project. The model and procedure followed for implementation of Jalanidhi was really good since it was implemented in the background of a World Bank fund with technical and implementation support from an Autonomus Agency KRWSA.

Safe drinking water and proper sanitation is essential for a healthy life. The operation of a number of policies simultaneously by different agencies raises the issue of coordination among them and the generation of conflicting data on the status of access to drinking water. The challenge is to find ways of managing the available water resources and use it in a sustained manner without degrading the environment so as to sustain the resources for the future generations.

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