

A Comprehensive Study on Water Conservation: Mission Kakatiya in Telangana

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Abstract: Water is a crystal clear fluid which is the basic need for almost every living being in the world, it forms the world's streams, lakes, oceans, and rain. There are two major sources of water which are surface water and groundwater. Surface Water is found in lakes, rivers, and reservoirs. Ground Water lies under the surface of the land, where it travels through and fills openings in the rocks. Indian ancient religious epics gives a good insight into the water storage and conservation systems that prevailed in those days. But due to the change in the population and encouragement of industrialization and expansion of agriculture there is an increase in the demand for water. It also rises the demand for water conservation due to the increase in consumption and decrease in the level of storage. The paper concentrates on the main objective of water conservation in the state of Telangana. The aspiration of the paper is highlighting the mission implemented by Telangana state for water conservation.

Keywords: Mission, Telangana, Water Conservation.

I. INTRODUCTION

One of the items people, animals, and our environment cannot live without is water. Water is extremely vital in the everyday life of everyone in the world. Water conservation means using our limited water supply wisely and caring for it properly. Water conservation is not a job that is reserved for scientists, hydrologists, foresters, wildlife managers, city planners, farmers, or mine owners. Instead, it is up to each and every individual to conserve water.

The U.S. Department of Interior's Bureau of Reclamation has given few important facts about water on the planet earth they are : a).Ninety-seven percent of all water on the earth is salt water, which is not suitable for drinking. b).Only 3% of water on Earth is fresh water, and only 0.5% is available for drinking.c).The other 2.5% of fresh water is locked in ice caps, glaciers, the atmosphere, soil, or under the earth's surface, or is too polluted for consumption.With growing population rates and such a small percentage of all the water on Earth fit for consumption, it only makes sense that everyone must preserve and conserve this precious resource.

Some of the main reasons it is important to conserve water:

- It helps to preserve our environment.
- It makes water available for recreational purposes.
- It minimizes the effects of drought and water shortages.
- It guards against rising costs and political conflict.
- It builds safe and beautiful communities

The goals of water conservation efforts include:

- Ensuring the availability of water for future generations where the withdrawal of freshwater from an ecosystem does not exceed its natural replacement rate.
- Energy conservation as water pumping, delivery and wastewater treatment facilities consume a significant amount of energy. In some regions of the world over 15% of total electricity consumption is devoted to water management.
- Habitat conservation where minimizing human water use helps to preserve freshwater habitats for local wildlife and migrating waterfowl, but also water quality. The water that leaks from aquagaurd should be collected and could be used for household works.
- If you save water it can save your money bills. Reduction in interior water use cuts waste water flows, especially overflowing of gutters which contaminates the environment.
- Environment benefits include eco system and habitat protection.
- Water conservation helps in improving the quality of your drinking water

Considering the Telangana state of South India gives us a view that it's a state where no sea is available in the state, Telangana has prominent perennial rivers such as Godavari in the north and the Krishna in the south. Other rivers such as Bhima, Manair, Penganga, Akeru, Dindi, Manjeera, Paleru, and PeddaVagu also irrigate the state.Telangana, though blessed with the presence of a few major rivers of

India, is mostly dry and experiences semi-arid climate, with monsoonal rainfall.

The Krishna River is the third-longest river of the country, originating in the Satara District of Maharashtra in the Western Ghats. This river flows across the state of Karnataka before reaching Telangana and Andhra Pradesh. Bhima is one of the prominent tributaries of Krishna River in Telangana. River Godavari, the other most important river of Telangana, is the second-longest river of the country. This river originates in the Nashik district of Maharashtra and runs across the Deccan Plateau, before crossing Telangana and entering the Bay of Bengal. The river Manjeera is one of its major tributaries.

Though, the state has the facility of rivers and it has taken the measures for conserving water the implementation is not upto the mark, so more concentration is taken for the conservation of water with the implementation of different measures and missions.

Nowadays utilization of water as becomes the most important factor. But the water consumed is not conserved. It has been falling under the crisis and the water has to be conserved for the future generation sustainability.

OBJECTIVE OF THE STUDY

The paper concentrates on the main objective of water conservation in the state of Telangana. The aspiration of the paper is highlighting the mission implemented by Telangana state for water conservation.

II. RESEARCH METHODOLOGY

The data collected is the secondary data collected from different sources like the newspapers, articles, magazines, reports. The data is related to a single state and the sources used by the state to conserve water.

NEED FOR THE STUDY

The paper concentrated on Telangana state water conservation as a case study to highlight the mission implemented by the state for water conservation. This paper gives an example how water conservation schemes can be implemented by other highly not water conserved states. And the paper also gives a view how the water can be stored for the future sustainability.

COMPREHENSIVE STUDY

Government had already made mandatory for construction of Rain Water Harvesting / Conservation Structures in all premises where the plot area is more than 200 sq. mts vide APWALTA 2002 to promote water conservation and to protect and to improve the groundwater for sustainable yields in the bore wells. Hyderabad Metro Water Supply and Sewerage Board (HMWSSB) solicits the cooperation and participation of all citizens and started the common cause of implementation of a massive programme on Rainwater Harvesting/Conservation this year. The Board is offering applications from the interested Residential

Welfare Associations for conducting Awareness Programmes in the colonies for technical guidance to construct Rain water Harvesting / Conservation Structures themselves in their own premises at their own cost.

Artificial Recharge is to augment the natural infiltration of rainwater into the ground by artificial methods. The methods suggested to recharge the ground water are pits, trenches, wells, shafts and directly diverting runoff water into the existing wells. The choice of any particular method is governed by local hydrogeology and soil conditions and ultimate use.

Reasons for ground water Depletion

1. Increasing demand of ground water
2. Withdrawing more than recharge
3. Reduction of recharge area due to buildings, paved paths and roads
4. Diminishing surface water bodies
5. Uncertain rainfall
6. Wasting water
7. Deforestation
8. Over population
9. Unrestrained urbanization

III. MISSION KAKATIYA

The massive programme for Restoration of tanks is named "ChinnaNeeti VanarulaPunaruddarana" and it is renamed as "Mission Kakatiya". The objective of Mission Kakatiya is to increase the development of agriculture based income for small and marginal farmers, by speedup the development of minor irrigation infrastructure, strengthening community based irrigation management and adopting a comprehensive programme for restoration of tanks.

The Government has prioritized to take the restoration of minor irrigation tanks to restore them to store their original capacity and to effectively utilize 255 TMC of water allocated for Minor irrigation sector under Godavari & Krishna River basins.

The minimum ayacut that can be irrigated with the above allocated water is about 20 lakh acres. But as per the statistics the ayacut now being irrigated is only about 9 to 10 lakh acres under Minor Irrigation tanks. Thus, there is a gap ayacut of about 10 lakh acres.

The reasons for this gap ayacut under Minor Irrigation tanks are due to.

- 1) Loss of water storage capacity of tanks due to accumulation of silt in tank beds over a long period.
- 2) Due to dilapidated sluices, weirs and weak bunds
- 3) Due to defunct of feeder channels.
- 4) Due to dilapidated condition of Irrigation canals.

As a part of Mission Kakatiya 1621 No of works costing Rs. 379.21 Crores are funded by NABARD - RIDF Tranche-XX with a loan assistance of Rs. 360.00 Crores

under Mission Kakatiya - I. Later the NABARD has sanctioned a loan assistance of Rs. 317.036 Crores for 1562 works costing Rs. 375.57 Crores under NABARD - RIDF Tranche-XXI for the works covered under Mission Kakatiya Phase - I. The works of Mission Kakatiya Phase - I are completed by 31.05.2017.

Government of India has agreed to sanction Restoration of tanks under RRR Phase - II scheme in XII Plan. As part of this 596 DPRs costing 475.86 Crores were submitted in 3 Batches to CWC after STAC meetings. Out of them, 182 water bodies costing 125.45 Crores and spreading in 5 districts were approved by Government of India and these works are in progress.

De-siltation of tanks are taken up to bring them to the original capacity of tanks. Now it is proposed for Silt Removal/ Silt Application as one of the component in the restoration of the Tanks. The silt so removed is proposed to use as manure for the fields with the participation of farmers by transporting and spreading in the fields with their cost.

A website is under development as a monitoring tool to tackle the massive programme Mission kakatiyato track the progress of works online and proposed to effect the payments duly linking the Bill Monitoring System with this website. The web site is under finalization and developed by the e governance wing of the Irrigation Department.

Mission Kakatiya and **Mission Bhagiratha** are public welfare programs of the Telangana state of India. Mission Kakatiya is the first program to be taken up by the Government of Telangana after coming into power in June 2014.

Appreciations to Mission Kakatiya Programme

- NITI Aayog officials have recommended to Ministry of Finance, Government of India for financial assistance to the programme.
- Sri Rajender Singh, known as Water man of India and Magasese Award winner visited Telangana and inspected Mission Kakatiya works, had interaction with local people. He expressed satisfaction over the huge investments on restoration of age old minor irrigation sources which is unheard in the past by any Government in the country. He wished that this programme should be a model for all the states in the country.
- British Parliamentary delegates visited the Mission Kakatiya works and expressed their happiness.
- The Union Minister for Water Resources Smt. Uma Bharathi appreciated the participation of people in Mission Kakatiya programme and stated that Mission Kakatiya is an inspiration for Ganga rejuvenation.
- Dr.MS. Swaminathan, the father of green revolution appreciated launching of Mission Kakatiya for de-silting of tank.

Here comes the kakatiya mission, a mission for restoration, a mission for water and a mission for life.

Mission Kakatiya is the restoration of small tanks and lakes of the Telangana state thereby improving the agricultural development.

It is named after the Kakatiya rulers who played an important role in building chain tanks in Telangana.

The project was taken up in five phases:

- Phase one - 8003 tanks
- Phase two - 8927 tanks
- Phase three - 5886 tanks
- Phase four - 6000 tanks
- Phase five - Remainder and New tanks creation

Big tanks and lakes, with higher ayacut, were taken up first. By March 2018, 27,713 lakes work was completed, spending ₹8700 crores, stabilizing and providing water for 20 lakh acres.

The salient features of Mission Kakatiya:

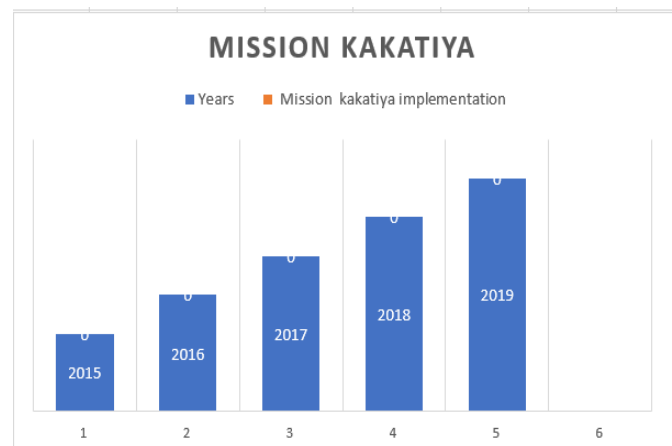
- 1) De-silt the tank beds to restore the original water storage capacity of tanks.
- 2) Repair dilapidated sluices, weirs etc.,
- 3) Strengthen the tank bunds to its original standards.
- 4) Repair the feeder channels to standards for getting water freely into tanks.
- 5) Take up necessary works to supplement/filling Minor Irrigation tanks through canal networks of Major.

Mission Bhagiratha is the project directed towards safe and piped drinking water to the households in Telangana city.

In the recent past the restoration and maintenance works of Minor Irrigation tanks were being taken up only for Bund, Weir, Sluice, Irrigation Channels etc.

The table below shows the overview of mission Kakatiya from its born year to the present scenario:

Years	Mission kakatiya implementation
2015	0-1 %
2016	20- 30 %
2017	30 – 50%
2018	50- 60%
2019	60- 78.8%



IV. FINDINGS

As the above bar gives us a clear view regarding the development of mission Kakatiya as it has become the useful source for small and marginal farmers. While groundwater has become popular for irrigation, it is becoming increasingly difficult to source groundwater as water tables decline from potential over-consumption. Water tank rehabilitation is a potentially attractive alternative to reduce overuse of groundwater and improve climate adaptation, water management, and sustainable agriculture. And the bar shows that it as a rapid increase in the present scenario. From the data collected it has been highlighted that the government is concentrating in the further improvisation and development of mission Kakatiya for the future generation sustainability.

V. RESULTS

The following is the results highlighted the mission Kakatiya :

- a) Silt can be used as nutrient / fertilizer to the plant which generally reduces the usage of fertilizer.
- b) De-silting will improve ground water recharging capacity and increase the capacity of the tank there by increasing the availability of water even during the summer for irrigation & drinking water purposes.
- c) As per studies conducted, it is observed that due to de-silting the fluoride content in the ground water will be reduced considerably.
- d) The water retention capacity of the soil will increase thereby decreasing the number of wettings.
- e) The yield of the crops like cotton and chillies is increased by 20 to 30%.

VI. CONCLUSION

The paper as concentrated on taking the case study on the Telangana state water conservation mission that is mission Kakatiya. The mission concentrates on minor irrigation facilities to the farmers as over two billion people around the world depend on irrigated agriculture for sustenance. The Government of Telangana is partnering with researchers to determine the impact of restoring water tanks for irrigation on water management, agricultural output, and farmers' income. This will lead to a great support for the farmers and agriculture sector and it gives a hope for the future generation sustainability.

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