

## GOAL 6 : CLEAN WATER AND SANITATION



### TAMIL NADU

#### 1. HOGENAKKAL WATER SUPPLY AND FLUOROSIS MITIGATION PROJECT -

Implemented by the Tamil Nadu Water Supply and Drainage Board, this project aims to provide safe and stable drinking water supply that will meet the surging demands by building water treatment & supply facilities that use safe surface water conducted from Kaveri River. The project improves the shortage of drinking water in the area and is contributing to mitigate prevalent fluorosis symptoms caused by local groundwater which is heavily contaminated with Fluorine. In addition to infrastructure construction, the project has also conducted Fluorosis Mitigation Program, which included capacity building for fluorosis diagnosis, providing medical treatment and awareness campaign for fluorosis prevention.

### ANDHRA PRADESH

#### 2. SUBSURFACE DAMS - (CLOSELY TIES IN WITH **SDG 13**)

To address the water shortage issue, the aspirational district of Y.S.R Kadappa, Andhra Pradesh, constructed subsurface dams using Z-sheet piling technology at 6 locations on river Papagni. Subsurface dams play an effective role in the proper utilisation of groundwater resources and help in controlling undesired fluctuations in the groundwater level. Before implementation, the water table in the adjoining areas of the river was very low. After the intervention, water percolation of the surface runoff to the sand layers, and in the adjoining alluvium along the river has increased the water table, resulting in increased water availability for sustainable irrigation practices.

#### 3. SRI SATHYA SAI CENTRAL TRUST DRINKING WATER PROJECTS - (CLOSELY TIES IN WITH **SDG 2, SDG 3, SDG 9, AND SDG 11**) -

The principle objective of the Trust was to allay this situation, provide safe, clean, healthy and sustainable potable water supply throughout the year to as many vulnerable and marginalised people as possible affected by lack of regular water supply in the area. The Trust provided direct hands-on skills training and jobs to local people living in the area during the construction phase of the development.

The water project in the Anantapur district, Andhra Pradesh was deployed in two distinct phases:

- Phase 1: In 1995, commencement of projects to supply potable water to people in Anantapur began. The mandate was provision of safe and potable water throughout the year to as many people as possible, with the principle strategy being to tap river water, where available, from dams, canals and river beds, and its delivery through an elaborate network of storage reservoirs, booster pumps and pipes.
- Phase 2: In 2013, during the concurrency of the Millennium Development Goals of the UN, the Trust commenced phase 2 to serve people who were not covered under Phase 1, by replicating the previous models in to provide potable water to 320 villages in Medak and Mahabubnagar districts where it served more than 1 Million people. This was replicated in the West Godavari and East Godavari districts. The land and the technical expertise was provided by the state government at no cost, and executed by an external construction company.

As a result, potable water became readily available to all, with a marked reduction in water-borne diseases and fluorosis that prevailed previously. The health indices improved drastically having a positive impact on the individuals, their families, and their communities. The Trust concurrently ran health and water awareness programs to sensitise and educate the local communities, the beneficiaries of the water projects.

*Apart from aforementioned best practices, Andhra Pradesh's Vision Document "ACHIEVING SUSTAINABLE DEVELOPMENT GOALS 2030", details further major policies and strategies to achieve benchmarks for SDG 6 - CLEAN WATER AND SANITATION, provided as follows-*

- Initiatives of Neeru-Chettu, NTR Jala Shree and Navya Andhra Jala Prabha program focus on promoting water conservation, surface water management, groundwater management, piezometers, water management, and green cover improvement.
- Providing 100% coverage of safe drinking water through piped supply to all households and to eliminate open defecation under 20 Non-negotiable

commitments and “Smart Village and Smart Ward” and “NTR Sujala Pathakam” initiatives.

- Andhra Pradesh Micro Irrigation Project, Andhra Pradesh Drought Adaptation Initiative, AP Community Based Tank Management Project, and Andhra Pradesh Farmer Managed Groundwater Systems.
- AP State Water Policy to ensure equitable and sustainable water services for all through multi sector planning and Integrated water management in all districts of AP.
- Interlinking of rivers - Pattiseema lift irrigation project – First river linking project in the country. Lifts 80 tmc of flood water in 110 days during the flooding season.
- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)
- Distribution of sanitary napkins to girls and women, targeting prevailing absenteeism among adolescent girls during menstrual periods

### KARNATAKA

#### **4. SOLID AND LIQUID RESOURCE MANAGEMENT (SLRM) -**

The SLRM Project provides an impetus to the Swachh Bharat Mission, focusing on creating Gram Panchayats free from open defecation, while ensuring cleanliness and sanitation through measures like systematic segregation, collection, conversion of waste to income etc.

Volunteers, members of Self-Help Groups (SHGs) and other Youth and Women's organizations from the Gram panchayats have been trained in waste management and sanitation practices at the district level. Around 10,000 different stakeholders like elected representatives, heads of voluntary organizations, religious institutions and hospitals, teachers and lecturers at Schools and Colleges, students, SHG members, Hotel owners and others were sensitized in training programs at district/block/Gram Panchayat levels.

The SLRM Project tackles waste as a resource and converts unwanted items from households & commercial centres into sources of income and useful marketable products.

### UTTARAKHAND

#### **5. SARVAJAL PROJECT FOR PROVIDING DRINKING WATER -**

As a part of its water conservation initiatives, the District Administration of Udham Singh Nagar along with Piramal Sarvajal launched the ‘Sarvajal Project’. The project involves installation of customised and decentralised drinking water solutions and leverages technology to bring community-level safe drinking water to the underserved. The solar-powered, cloud-connected water dispensing kiosks

installed under the project have enabled citizens residing in remote areas, accessibility to clean palatable water. The District Administration encouraged schools to participate in the awareness drives, where school children promote the message of water conservation and best practices through campaigns. The Project has enabled the District Administration to develop sustainable infrastructure to provide piped water supply powered by solar energy to villages.

### GUJARAT

#### **6. SWACHH SABARMATI - (CLOSELY TIES IN WITH *SDGs 11 AND 15*)**

The Drishti Foundation Trust undertook a one-year project for cleaning River Sabarmati, primarily focused on removing solid waste to reduce the concentration of antibiotic-resistant E.coli bacteria due to untreated sewage. Community inclusive awareness sessions started along with tree plantations by different schools and communities on the river side. The project concentrates on building up a green environment in terms of air quality and preserving animal life through afforestation drives. Activities like cleaning the pumping stations, powerhouses are also integral parts of the Swachh Sabarmati project.

#### **7. INNOVATIONS IN DRINKING WATER MANAGEMENT -**

Under the program of Water and Sanitation Management Organisation (WASMO) for community managed water supply systems in earthquake affected areas, the Shirva village formed a representative Pani Samiti as per the Government Resolution. A Reverse Osmosis (RO) plant was installed to cater to the average demand of 5 litres per capita per day (lpcd). The community bore 10% of the capital cost and the Pani Samiti owned the responsibility of operation and maintenance (O&M). With the installation, the total dissolved solids (TDS) of water reduced to 450-500 ppm from over 3500 ppm. A separate committee was constituted to manage the RO plant and the daily distribution of the water, which became a source of income for the Pani Samiti. 80% of the families avail the RO plant water for drinking purposes. Water is being provided free of cost to the Primary schools & Anganwadis. To manage the problem of 'reject water' from the RO plant, the concept of Water Pyramid was initiated. It provides different ways to produce distilled water and salt, which has developed new business opportunities for the village. The Water Pyramid is designed with an eco-friendly foil structure which utilises energy from the sun to evaporate dirty or polluted source water.

### TELANGANA

As per Telangana's SDG Implementation Document 2018, the state's strategy to achieve benchmarks for SDG 6 - CLEAN WATER AND SANITATION, the state has focused on the following major policies and strategies-

- Mission Bhageeratha
- Swachh Telangana in line with Swachh Bharat
- Sanitation programs
- Construction of IHHLs

### PUNJAB

#### **8. SOLID WASTE MANAGEMENT -**

The project was started with the Round Glass Foundation imparting information about segregation at a source. Two dustbins, for wet and dry waste, are provided to each household and day-to-day collection was organised using a collection cart. The pilot project was started by the district administration, under the convergence of MGNREGA and the 14th Finance Commission Funds. The Round Glass Foundation, an NGO, provided technical and motivational support in the Mohali district of Punjab.

- *Processing plants for solid waste to convert into compost and working on waste to energy plants* : Biodegradable waste is converted into valuable compost without any emission of greenhouse gases. The processing of waste stopped the entry of waste in landfills/ water bodies/ drains and thus reduced the pollution of water, air, and soil. Improved sanitation facilities for all and scientific solid waste management reduced the health crises, particularly for deprived sections of the society.

The waste management initiatives encourage open defecation free (ODF) sustainability, solid and liquid waste management, plastic waste management, and provision of a community sanitary complex in public spaces in every village.

#### **9. SWACHH BHARAT MISSION (G) / DECENTRALIZED WASTEWATER TREATMENT -**

The Decentralized Wastewater Treatment plant is a pilot-initiated project at village Singhpura, District S.A.S. Nagar. The village has moved from a conventional treatment to Root Zone Technology based sewage treatment. TYPHA plants were implanted in the facultative pond, whose function is to reduce the BOD level of greywater, where the roots of the plants consume the solid sewage waste aerobically. The effluent BOD levels of maturation ponds have decreased significantly from 90 PPM to 23 PPM.

This Root Zone Technology based sewage treatment requires very less area for plantation and no electricity, which is both economic and environment friendly. It is a self-sustaining system which does not require skilled operation or power.

Other activities performed along with it include cleaning of village streets and drains, no stagnation of dirty water, stopping open defecation, construction of soakage pits, stopping water wastage, solid waste segregation, no littering of solid waste and its proper segregation and disposal, and fecal sludge management.

### HARYANA

#### 10. **OPEN DEFECATION FREE (ODF) STATE THROUGH 'SWACHH BHARAT ABHIYAN' -**

The community-led initiative aimed at forever eradicating the practice and adverse implications of open defecation. The entire machinery of the state government was sensitized and involved in implementing and monitoring the scheme.

Intensive campaigns and community discussions with beneficiaries and government staff were spread out over villages. Anganwadi workers (AWW), ASHA workers and motivators conducted door-to-door sessions with people, teaching them the importance of using toilets. ODF campaign staff would go on 4 am rounds to check people engaging in open defecation and motivate them to use or build toilets. Nigrani Smitis and PRIs would identify and maintain records of contacts with all people and households. School children and teachers participated in rallies to teach people how to use toilets. Officials used social mapping to understand the mind-sets of people and planned accordingly. A state-level training program on Community-Led Total Sanitation (CLTS) approach was organized.

As of June 2017, Haryana proclaimed itself an ODF state. ODF verification was done by the terminal of faecal-oral transmission, as defined by no visible faeces found in the village and the use of safe technology option for faecal disposal by every household and public/community institution. An additional 8,00,495 households were using toilets in another 32 months. 27% of total households in Haryana do not have toilets, of which 94% have been identified.

#### 11. **WATER-WATER GOVERNANCE -**

Villagers of Baidi in Tehsil Raduar, Yamunanagar District practiced management of wastewater due to the hazards from the filthy over flowing ponds, waterlogged streets and improper disposal of waste water in a safe and sustainable manner was the major challenge for them. The practice is about reducing the toxicity and environmental threat, and to reuse the water for agriculture, fisheries and recharging the ground water at low maintenance.

Objectives include prevention of human contact from hazards of accumulated waste water and to promote better health by adopting a long term sustainable approach and ensuring availability and sustainable management of water and sanitation. The State Government focuses on maximum reuse of waste for agriculture purposes with least operation and maintenance costs. At present, waste stabilization Ponds (WSP) technology has been successfully adopted for effective treatment of wastewater collected via drainage systems.

The treatment ponds are filled with waste water emerging from the household usage and containing faecal matter. This sewage treatment removes contaminants from wastewater and household sewage. A green belt is developed in the surrounding areas, leading to improvement in hygiene as the waste and treated sludge from the pond is used for agriculture (manure), biomass and other purposes. The village has gotten rid of accumulated and overflowing wastewater.

### TRIPURA

#### 12. **GROUND WATER PROSPECT MAPPING -**

To make ground water sustainable, there is a need to design regulated withdrawal of groundwater and to plan suitable mechanisms for recharging groundwater. In order to properly address and overcome the problems of drying up of existing wells, the drinking water supply schemes had to be developed considering the hydro geological information and maps.

National Remote Sensing Centre (NRSC), ISRO, Department of Space, Government of India in collaboration with the Tripura Space Applications Centre prepared ground water prospects maps, aka Hydro-Geo Morphological (HGM) maps via remote sensing and GIS technology to help engineers and hydrogeologists identify ground water sources, particularly for Not Covered (NC) and Partially Covered (PC) habitations. These maps are used for selection of sites with follow-up ground surveys, i.e. detailed hydro geological/ground geophysical investigations in the prospective zones to obtain the exact information. Subsequently, based on the confirmatory evidence obtained from ground geophysical/hydrogeological surveys, sites are selected for drilling for taking up artificial recharge structures.

### WEST BENGAL

#### 13. **NADIA - AN ODF DISTRICT -**

About 33% households in Nadia district did not have access to toilets and were defecating in the open in 2013. A campaign was launched by an enterprising District Collector focusing on behavioural change, provision of universal access to sanitary toilets and their usage to bring improvement in health indices was put in place. Key features included -

- Initiatives in human resource development, especially skill upgradation of masons
- Strengthening the service delivery mechanism and induction of partners
- Convergence, coordination and monitoring by Zila Parishad and district administration.
- Gram Panchayats are designated as implementing agencies. Anganwadi workers made a focal point
- Rural Sanitary Marts (RSMs) delivered the materials required

Stakeholder participation was expanded through pledging in schools. Students were used as change agents. SHGs were used for mobilization and faith-based organizations were motivated to spread awareness. Doctors were sensitized to prescribe toilets and safe hygienic practices to patients. Intensive Information Education Communication (IEC)/ Behaviour Change Communication (BCC) campaigns were undertaken, and Para Najardari Committees were formed in each habitation to monitor the ODF district.

#### ODISHA

As per Odisha's SDG Indicator Framework Document, some state-sponsored schemes implemented to achieve benchmarks for SDG 6 - CLEAN WATER AND SANITATION include -

- Rural Water Supply - BASUDHA
- Rural Water Supply Rural Infrastructure Development Fund (RIDF)
- Odisha Mineral Bearing Areas Development Corporation (OMBADC)
- Integrated Sanitation Improvement Project
- Mukhyamantri Adibandha Tiari Yojana (MATY)
- Canal Lining and System Rehabilitation Program (CLSRP)
- .Odisha Integrated Irrigation Project on Climate Resilient Agriculture (OIIPCRA)

#### RAJASTHAN

#### 14. **'TAANKA' TECHNIQUE FOR WATER CONSERVATION -**

Originally popularised by the state of Uttar Pradesh in the water-parched Rajasthan, this technique has been replicated and is in the process of building more than 5,000 suck tanks with a capacity of up to 25,000 litres and ponds across the district. This initiative follows the standard rainwater harvesting technique of collecting rainwater from rooftops through gutters and passing it through a sieve before storage. Use of tanks has helped the state save water when the demand reaches its peak and supply falls short.



15. **EFFECTIVE WATER, SANITATION AND HYGIENE (WaSH)  
IN SCHOOLS - (CLOSELY TIES IN WITH *SDG 4*)**

Banka BioLoo, an SME in the WaSH sector and Havells, an electrical equipment company, formed a partnership to provide sanitation in schools in Alwar district in support of the Swachh Bharat Abhiyan by providing separate toilet blocks for girls and boys with water and handwashing facility in 100 schools, for underprivileged children. The school sanitation program had multi-fold approaches, benefits and outreach. The bioloo is a sustainable sanitation solution – treating human waste onsite in a multi-chambered matriced bio-digester tank through bacteria inoculum. It comprised precast ready-to-deploy toilet structures ensuring that the toilets were installed in a quick time frame of one week, and factory-made bio-digester tanks. Providing WaSH in schools ensures that children attend their classes regularly, the girls benefit more as their privacy, security, safety is ensured and health & hygiene enhanced. The girl students don't need to miss their classes during MHM, and don't drop out of school.

As a result of the project, children's attendance has improved. Families have gained from the overall environment of cleanliness and sanitation, for instance, many families that didn't have toilets at home began constructing one. Impact assessment study was done through Impact Lab of Business Call to Action, a UNDP platform. School children, as ambassadors of water, sanitation and hygiene, carry the message of WaSH to their families and communities, thus triggering a multiplier effect.

16. **GRAM LAPORIYA WATER CONSERVATION - (CLOSELY  
TIES IN WITH *SDG 2*)**

Laporiya, a small village near Jaipur faced a severe water problem and most of the rainwater remained badly utilized. People were not aware of optimum and sustainable use of natural resources. In 1987, Shri Laxman Singh devised a new technique called the CHOUKA SYSTEM for ground water recharge. After years of experimentation, this technique has become very effective. He received full cooperation from the villagers. In this technique, small rectangular dykes with an entry and exit point, called CHOUKAS, are constructed.

This is a indigenous and natural technique for pasture land development and fodder production. Maximum benefits are accrued with minimum expenditure. Moisture is retained in the entire pasture land area. Rainwater is harvested for a definite period and stored in 10% of the area for groundwater recharge. A 9-inch water column is maintained in Choukas for 10 to 30 days. All the Choukas are interconnected and water flows from one to another and ultimately the overflow

falls into a pond. Local flora and fauna is grown in the pasture land, which is converted into different zones based on moisture content.

Every year, a Pad Yatra (rally) is held to create awareness about water conservation, its judicious use of water and planting more trees. Social mobilization has taken place and encroachments from pasture land have been removed. The retention of rain water in 10% of the area has led to an increase in groundwater level in the entire village, providing adequate drinking water and fodder for animals.

### JHARKHAND

As per the Jharkhand Vision & Action Plan 2021, Jharkhand's best practices, policies and strategies to achieve benchmarks for SDG 6 - CLEAN WATER AND SANITATION, are mentioned as follows-

- Solid and liquid waste management systems in gram panchayats
- Increased coverage of sewerage and drainage system
- Enhancing the capacities of existing water treatment plants or establishment of new water treatment plants by government or through PPP/ community ownership model
- Functional review of the Department of Drinking Water and Sanitation and provide support to enhance its efficiency and effectiveness
- Capacity building of PRIs and water and sanitation committee members for management of water supply systems and community mobilization
- Innovation and maintenance of sustainable models of drinking water supply
- Promotion of extensive IEC/BCC for usage and benefits of safe drinking water

### NORTH-EAST

#### 17. **Swajal Water Testing Training** — Assam

High levels of inorganic arsenic is naturally present in the groundwater of the Aspirational District of Barpeta in Assam, posing a threat to the public. With community ownership and through participative planning, villagers, especially women in Barpeta, were sensitised about safe water practices and trained to use Field Testing Kits to ascertain the quality of drinking water. Community members collected contributions from all the households to get a piped water supply scheme in villages. Water storage tanks are being constructed and community members volunteered to monitor the scheme implementation.

### BIHAR

#### 18. **OPEN DEFECATION FREE (ODF) STATUS -**

Practices are aimed at attaining open-defecation-free status through a multi-pronged approach including awareness generation on the adverse health impact of open defecation, safety for women, constructing household toilets and branding it as 'Izzat Ghars' (places of dignity), thus positioning toilet construction as a matter of pride through local influencers, and financial assistance to the needy residents for toilet construction.