Best Practices of Ground Water Harvesting in Different Parts of India

(N.G.O Initiatives)

N1	**Andhra Pradesh**
Title/ Name of work undertaken	Neeru Aarogyam (Water -Health) - " Gravity Fed Water Supply Systems " (GFWSS)
Location	North coastal Districts of Andhra pradesh (Visakhapatnam, Vizayanagaram, Srikakulam and East Godavari Dist of AP) Tribal regions covering 4 ITDA offices.
Organisation/NGO/Persons responsible to undertake the work	Visakha Jilla Nava Nirmana Samithi (VJNNS), Narsipatnam
Description	Exploring the principle of Gravity Flow (Fed) Water Supply was an experiment that was undertaken to ease the water crunch. Through this methodology, running water sources and several water bodies that were perennial in nature were identified with the help of the elders.
Outcome	It is a spring harvesting project and supply of safe and protected, filtered drinking water project to the hill top and remote and interior areas of tribal regions. Since the year 2002 to this date work taken up are as follows: Provided drinking water through GFWSS Total habitations covered: 218 Total Panchyats covered: 131 Total mandals/Blocks covered: 66 Districts covered: 4 (North coastal Districts of Ap, Tribal regions) House Holds Covered : 11971, Total population covered : 55321 Impact of this intervention is : 95% of the devices / units are working 100%, people are very happy in consuming safe drinking water. apart from that the VJNNS encouraging to water + activity with the surplus water to as they save time and manpower with the concept of "Aadayam and Aaharam" (Income and food security). .
Photographs	

Protected Spring Source

Fully covered top with no contamination

N2	Andhra Pradesh
Title/ Name of work undertaken	Participatory ground water management
Location	Kummaravandla Pally village of Anantapur district
Organisation/NGO/Persons responsible to undertake the work	Farmers-Community
Description	After 2000, the area has seen rapid fall in ground water table mainly due to subsidized power connections and absence of formal legislation or social regulation to govern extraction. Despite water shortage the cultivation of water-intensive crops continued resulting in increasing water disputes among farmers. Now working towards a solution, 25 farmers of Kummaravandla Pally have formed a collective Kolagunti Ummadi Neeti Yajamanya Sangham to "share groundwater with each other" to sustain their crops with the help of government bodies and NGO WASSAN.
Outcome	The joint efforts of all three stakeholders have led to the concept of networking of bore wells to secure rain-fed crops of all farmers, irrespective of bore well ownership. By linking all bore wells with a network of pipelines and outlets, all farmers can now access groundwater. To ensure compliance, the farmers have also signed an agreement which aims at sustainable use of ground water resource encouraging farmers to switch to crop diversification, System Rice Intensification, horticulture, micro irrigation systems etc. the farmers' committee has also put a ban on new bore well connection in critical area. armers are also using government schemes such as water and soil conservation works under the MGNREGS and NADEP compost pits. The mutual agreement has led to a new way of agriculture in the 72 acres of land of 25 farmers. Since 2010, the cropping pattern has changed, leading to diversity of crops, reduction in costs of cultivation; improvement in value of produce and profit. Source: https://www.hindustantimes.com/india-news/in-water-stressed-andhra-farmers-sign-pact-to-share-ground-water/story-tcv4mP5mXNBvE74vzqB7eN.html Images have been taken from above website.
	Photographs

N3	Andaman & Nicobar
Title/ Name of work undertaken	Traditional rainwater harvesting practice- Kuitasuk village, Chowra island, Nicobar district.
Location	Kuitasuk village, Chowra island, Nicobar district.
Organisation/NGO/Persons responsible to undertake the work	Structure in individual household
Description	Traditional methods of rainwater harvesting.
Outcome	Conservation of water in water scarce Chowra Island where fresh water is unavailable.
Photographs	

N4	**Arunachal Pradesh**
Title/ Name of work undertaken	Rainwater harvesting and management of water in steep slopes for cultivation.-Along (Aalo) district headquarter of West Siang District, Arunachal Pradesh.
Location	A village near Along (Aalo) district headquarter of West Siang District, Arunachal Pradesh.
Organisation/NGO/Persons responsible to undertake the work	Local farmers
Description	Traditional methods of terrace cultivation in high slope of Arunachal Himalayas.
Outcome	Water conservation & its impounding at various levels for cultivation of paddy.
Photographs	

N5	Arunachal Pradesh
Title/ Name of work undertaken	Rainwater harvesting and management of water for dual fish-cum-paddy cultivation-Lower Subansiri district (Ziro valley), Arunachal Pradesh
Location	Lower Subansiri district (Ziro valley), Arunachal Pradesh
Organisation/NGO/Persons responsible to undertake the work	Local farmers
Description	Traditional structures for conservation of water for fish-cum-paddy cultivation.
Outcome	Impounding water at various levels for paddy & fish cultivation and its release to lower level.
Photographs	

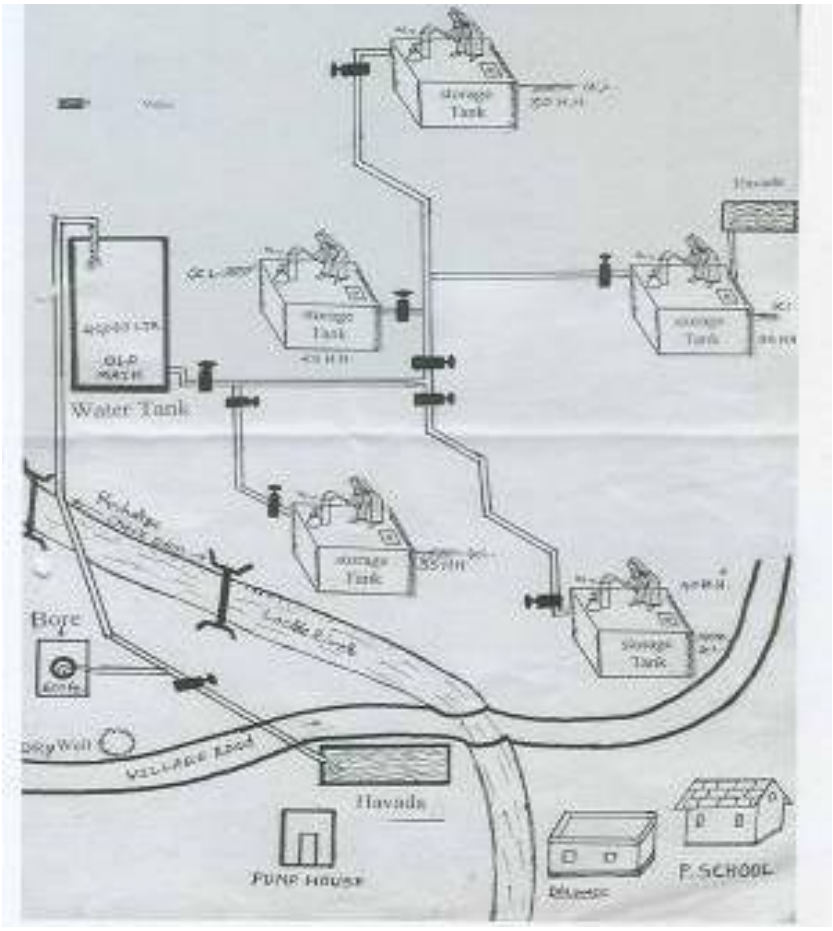
N6	Chhattisgarh
Title/ Name of work undertaken	Rooftop rainwater harvesting
Location	Kabirdham District in Chhattisgarh
Organisation/NGO/Persons responsible to undertake the work	Samerth Charitable Trust
Description	Repair and revival of water structure and construction of Rain Roof Water Harvesting Structures has undertaken in Government Primary Schools in Chhattisgarh.
Outcome	6 Rain Roof Water Harvesting Structures with a capacity to store 66,000 litres of water in an underground tank at 6 locations in government schools in Bilaspur and Kabirdham district in Chhattisgarh. Developed spring water management systems in Sarodhadadar village in the Bodla block of Kabirdham District.
	Photographs

Spring Water Management at Devanpatpar village in Pandaria block of kabirdham District in Chhattisgarh state

Spring water captured in Sarodhadadar Village in Bodla block of Kawardha District

Spring water storage capacity developed at Sarodhadadar village

N7	**Gujarat**
Title/ Name of work undertaken	Revival of water supply system at Pipaliya(V), Surendranagar district in Gujarat
Location	Pipaliya(V), Surendranagar district
Organisation/NGO/Persons responsible to undertake the work	Aga Khan Rural Support Programme(India)
Description	In Pipaliya village of Surendranagar, an NGO and gram panchayat came together to form a committee to over come acute water scarcity caused by salinity ingress, recurrent droughts and rapid pace of groundwater irrigation. Existing water supply system was revived with the committee taking up major responsibility at village level right from project planning, site selection, contribution collection, material procurement, distribution and logistics. People agreed to contribute partially to the estimated cost of Rs 3.79 lakhs. Pipes to over head tanks were repaired, underground tanks were constructed in five different areas of the village with soak pits near each tank to maintain hygienic conditions around tank. A Pani Samiti has been formed comprising 10 members (equal proportion of men and women) for management of the water supply scheme.
Outcome	In Pipaliya village and in other villages in Surendranagar district where such initiative has been taken up, homes have gained access to safe water. Some villages like Karan received a Clean Village award. Children have started going to school. The women do not have to travel long distances carrying water and have free time to devote to other household activities and even productive income generating opportunities. This has shown how community can create a change and improve living conditions through interventions in management of water resources. Source: Case studies compendium -IDWM - compiled by Development Alternatives, received from WAPCOS
	Photographs


Storage Tank
Storage Tank
Storage Tank
Storage Tank
Storage Tank
Water Tank
Bore
Open Well
VILLAGE ROAD
Havada
PUMP House
P. SCHOOL

N8	**Gujarat**
Title/ Name of work undertaken	Roof rainwater harvesting and storage at Patan, Surendranagar, Kutch areas in Gujarat
Location	Patan, Surendranagar, Kutch areas
Organisation/NGO/Persons responsible to undertake the work	Self Employed Women Association(NGO)
Description	Water campaign was triggered among women of SEWA as they had to fetch water for household and were missing out on time for economic activities. Roof rainwater harvesting in underground pucca tanks has been developed as an alternative to centralized water supply systems, ensuring water availability in simple, easily manageable manner. With time, the illiterate women became engineers, helping in transfer of knowledge at village level. About 4000 individual tanks were constructed among which many were shared tanks. The women setup local water committees to take up reclamation and revival of traditional water bodies with almost two lakh families in more than 500 villages led by women 'water managers'. Work includes pond repair, channel desilting, bund improvement, constructing outlets. In some of the villages, ponds have been lined with plastic to block the entry of saline water, wells were desilted, cleaned, and a new border and a concrete platform were constructed around them. A large number of wells were fitted with a pulley to make fetching water less strenuous.
Outcome	Between 1995 and 2008, 88.5 crore litres of rainwater was harvested by constructing 3933 underground tanks. In addition, 10.4 crore litres of water was conserved and harvested in ponds and wells, thereby recharging the water table. A network on barefoot campaigners, engineers, managers is spread across 14 districts. 200 Pani Samitis spearheaded by women are managing their local water recourses. This network has laid the foundation of a strong decentralized system of management and governance managed by the communities especially women themselves. The interventions have lead to a substantial improvement in access and availability of safe drinking and domestic water. As women now have more time, they are more productive, engaging in embroidery and related works, contributing to the family income. As financially active members of society they social position also has improved. Source : Case studies compendium -IDWM - compiled

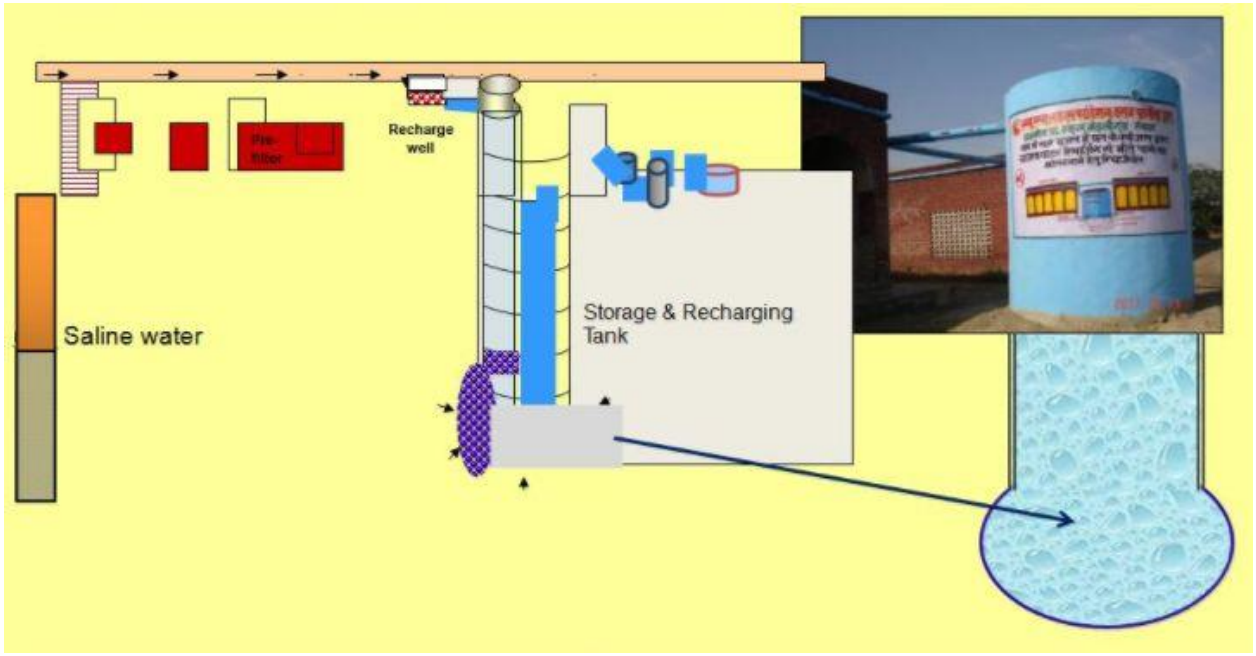
	by Development Alternatives, received from WAPCOS

Photographs

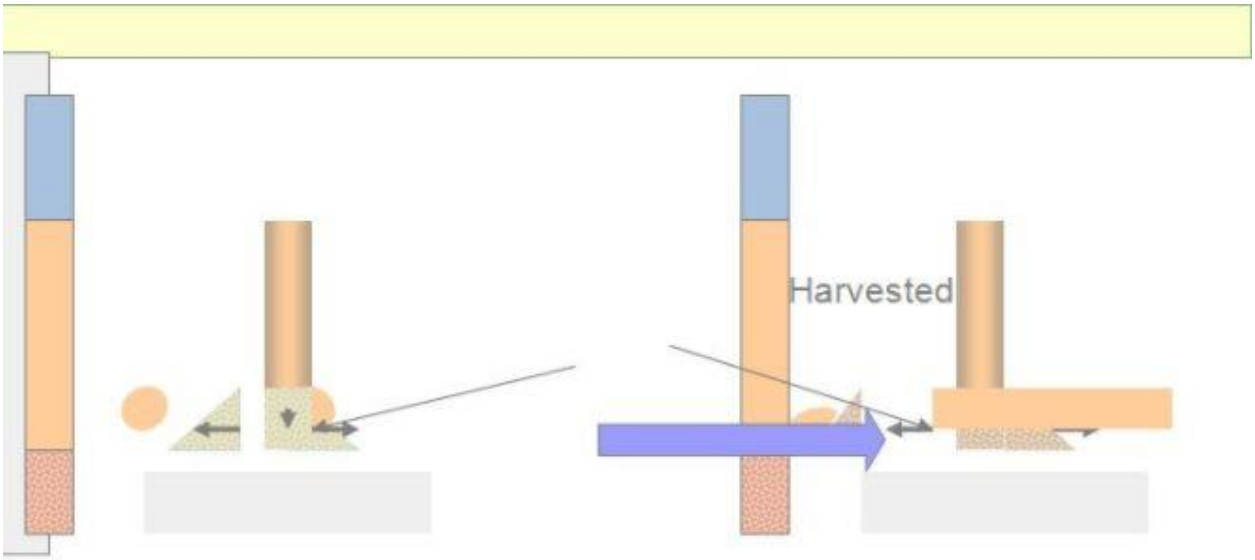
Women technician involved in hand pump repair

Women undergoing training

N9	**Haryana**
Title/ Name of work undertaken	Rainwater harvesting at Mewat district in Haryana
Location	Untka school in Mewat district
Organisation/NGO/Persons responsible to undertake the work	Community
Description	At the government school building in Untka village, the groundwater is highly saline with total dissolved solids (TDS) at 5980 mg/l. The school caters to 297 students and did not have a local source of water. Its daily requirement of water for drinking and midday meal cooking was estimated at 750 litres (297@2.5 litres/day) and total annual water demand is 1,50,000 litres, for 200 working days per year In 2013, the roof water harvesting system was established to recharge aquifer with rainwater using the described innovative model. With the financial support from the Department of Science and Technology (Government of India), the RWH unit was set up for a roof area of 638 square metres to capture rainwater.
Outcome	The average annual rainfall of 594 mm can result in an estimated annual harvest of 322,126 litres of water, considering the run-off factor as 0.85. Since July 2013, the school has been using the recharged water that is made safe for drinking by filtration through a biosand filter. This filtration process eliminates the risk of biological contamination. The salinity level of water pumped from the pool of freshwater is below 100 mg/l (permissible level of TDS) and is made available around the year. The experience from Untka school and other demonstrations suggest that replication of the model is highly affordable. The model has high scaling potential in regions with saline groundwater including semi-arid areas and coastal areas where seawater ingress poses a major challenge of groundwater salinity. Though this model has been conceptualized and developed in shallow aquifer areas, it can also be adapted for deeper saline aquifers and seawater intrusion affected areas.
Photographs	



Schematic diagram of the Model with actual Picture



Spread of Fresh Harvested Rainwater under the ground

N10	**Himachal Pradesh**
Title/ Name of work undertaken	Community Based Spring Recharge Work in Thanakasoga Panchayat
Location	Thanakasoga, Luhali & Dhyali Panchayat, District Sirmour, Himachal Pradesh
Organisation/NGO/Persons responsible to undertake the work	People's Science Institute, Dehradun Dr. Ravi Chopra, Dr. Anil Gautam
Description	Five baoris were selected for rejuvenation - Mandir baori (B1) and Lower Baori (B2) in village Thanakasoga, Lower baori (B3) in village Luhali; Sita baori (B5) and Kishan baori (B6) in village Dhyali. These sites were selected on the basis of spring (baori) dependency for drinking water and feasibility of interventions based on hydrogeological studies. Control baoris were also identified in each village to record comparison. Continuous Contour Trenches (CCT) and Staggered Contour Trenches (SCT) were constructed in the recharge areas. The size, number and type of these structures were decided depending upon the hill slope. SCTs were the main recharge structures for pasture land where surface slope was less than 40 percent and CCTs were the main structures for agricultural land**.** The total area treated was 13 hectare with 358 CCTs and 565 SCTs. This created a storage capacity of 744 cubic meters.
Outcome	– Enhanced spring discharge hich lead to a more equitable water sharing mechanism amongst communities. – Treatment activities in recharge area of Thana-1 baori increased flow in the Sattarbhadon *gadera*. – Increase in availability of water (see bar graph). – Increased spring discharge resulted in reduction of geogenic contaminants like iron.
Photographs	

N11	Jammu & Kashmir
Title/ Name of work undertaken	Artificial Glaciers at Ladakh in Jammu & Kashmir
Location	Ladakh
Organisation/NGO/Persons responsible to undertake the work	Chewang Norphel
Description	Ladakh's picturesque beauty and landscape is enough to take anyone's breath away. But this cold, mountainous region is plagued with infertile land and water scarcity. The annual average rainfall is 50 mm and people are dependent on glacier meltwater to fulfil their water requirements. However, meltwater alone cannot meet both irrigation and domestic requirements. To overcome this problem, Mr. Norphel came up with the concept of artificial glaciers and made canals to divert water from the main glacial stream to a small shaded catchment area away from the village to keep water frozen. Ice retaining walls were constructed on the sides in series to store frozen water. This creates a secondary source of substantial volume of water which melts in the spring-summer months and is carried to village via pipelines and irrigation channels and is used for both domestic and irrigation purposes. So far, 10 such glaciers have been built in the region.
Outcome	Significant increase in agricultural production, thereby increasing income of the locals. This technique brought water close to the village and made it available when it was needed the most. Reduction in travel time to fetch water, lessened dependency on already scarce natural sources. Adaptation to climate change and enhanced sustainability. Reduction in migration to cities. Overall improvement in water availability to the watershed. Source : SELECTED BEST PRACTICES IN WATER MANAGEMENT by Niti Aayog August 2017, with support of TERI university
Photographs	

N12	**Jharkhand**
Title/ Name of work undertaken	Increase Storage Capacity of Check dam ensures protective Irrigation
Location	Dasokhap, Hazaribag district, Jharkhand. The tribal village has 35 Households
Organization/NGO/Persons responsible to undertake the work	**Action for Food Production (AFPRO)** 25/1A, Institutional Area, Pankha Road, D-Block, Janakpuri, New Delhi-110058
Description	In the project area an earthen dam already existed which was being used for irrigation purpose. The dam had very low storage capacity i.e. 100x100x3m^3. Runoff water being stored in this storage area was not found sufficient to meet crop water need in all the villages. The villagers came forward with a request to increase the storage capacity of the dam. In spite of increasing the depth,**AFPRO** went for an innovative solution by raising the level of existing inlet/outlet of the dam by 1m and also provided a separate inlet to divert water towards the dam.
Outcome	After increasing the level of the existing spillway, villagers are getting sufficient amount of water for irrigation purpose. Now they are able to irrigate more than 150 acre of land from the dam. Though paddy is still the dominant kharif (rain fed) crop, wheat and vegetables are now grown as regular irrigated, rabi season crops. This check dam has also improved water level of project area
Photographs	

Separate Inlet for diversion of water

Picture showing the raised spillway

N13	Jharkhand
Title/ Name of work undertaken	Ground Water Recharge through Rooftop Rainwater Harvesting
Location	St Albert's College, Ranchi
Organization/NGO/Persons responsible to undertake the work	**Action for Food Production (AFPRO)** 25/1A, Institutional Area, Pankha Road, D-Block, Janakpuri, New Delhi-110058
Description	Total seven recharging units have been constructed in year 2006 at cost of 1.37 Lakh Rupees, spreading in different locations in the institution with the aim to cover maximum area for recharging aquifers. The dimension of each recharging unit is kept 3.65 Mtrs diameter and 3.04 Mtrs depth. The roof top rainwater diverted to recharging unit that percolate into ground and restore the water table of the area.
Outcome	Before implementation of the project, water level in wells and pond was decreasing each year but now even in the summer sufficient water is available in the pond and well. Residents of the campus are not facing drinking water crisis in summer with increase in overall water level of the area. Earlier rain water was flowing outside the campus, creating unhygienic environment. But, after construction of recharge structures, the flow direction spreads to all the surrounding areas that enhanced the soil moisture condition.
Photographs	

Recharging unit constructed in St. Albert College, Ranchi

N14	Jharkhand
Title/ Name of work undertaken	Rooftop rainwater harvesting
Location	Loreto Convent School, Ranchi
Organization/NGO/Persons responsible to undertake the work	**Action for Food Production (AFPRO)** 25/1A, Institutional Area, Pankha Road, D-Block, Janakpuri, New Delhi-110058
Description	Till 2007, the existing four wells in the school campus were not functional in the summer season. With technical inputs from AFPRO, the school tookup recharging of wells by using roof rainwater harvesting and ground water recharging by recharge pits along with cleaning of wells. At cost of Rs 1.1 Lakh Rupees, total five recharging units of size 3mx3m were constructed in different locations and roof top rainwater was diverted through 200 mm diameter pipe.
Outcome	The impact of the intervention is visible in the school as there is no flooding in the campus during rainy season. Further, problem of water scarcity in summer for over 1000 students studying in the school has been solved. On the long term, the ground water level of the area is expected to rise.
Photographs	

Recharging unit of LoretoConvent School

N15	Jharkhand
Title/ Name of work undertaken	Construction of Dug Wells
Location	Orbenga village, Palkot block, Gumla district in Jharkhand
Organization/NGO/Persons responsible to undertake the work	Naya Savera, AFPRO(Action for Food Production), SUPPORT
Description	As per technical inputs by AFPRO, wells of different sizes were dug in addition to existing ones, to deal with water scarcity prevailing in the village, and also to address flash floods. Dug wells occupied lesser area compared to ponds and were inexpensive to build due to local availability of boulders for lining of well.
Outcome	The periodic recorded groundwater table data indicates increase in overall water level in the area. 40 wells constructed after the intervention are providing water for drinking and irrigation to the villagers. Adjacent to the wells villagers are cultivating vegetables in a properly fenced small land. These wells enabled communities to take up cultivation of Rabi crops as well as summer vegetables. In summer, unlike other villages, the inhabitants of Orbenga are not facing water crisis.
Photographs	

A typical Well in the village Orbenga

N16	Jharkhand
Title/ Name of work undertaken	Construction of Check dam
Location	Baghakol village, Godda district
Organization/NGO/Persons responsible to undertake the work	AFPRO(Action for Food Production)
Description	In Baghakol village, most of the agricultural land depends on rainwater and the farmers depended on a Lift irrigation system that draws from an intake well on a stream which gets dried up by the month of March, insufficient for the whole area. A technical feasibility study was conducted by AFPRO and a check dam was constructed for improving recharge of the intake well and to enable gravity flow system, so that water could reach the field.
Outcome	Approximately 100 acres of agricultural land is receiving irrigation facility from this structure. People are also saving the money they used to spend on diesel operated pump sets earlier. The available water is sufficient for taking two crops in a year.
	Photographs

N17	Jharkhand
Title/ Name of work undertaken	Water Conservation
Location	Bero block of Ranchi
Organization/NGO/Persons responsible to undertake the work	Simon Oraon
Description	Simon Oraon, popularly known as Baba in Bero block of Ranchi area has transformed the lives of thousands of villagers in Jharkhand with his massive tree-planting and water conservation efforts, The 84-year-old man, a Padma Shri awardee, has been working in 51 villages of Bero to protect natural flora for decades. The residents of these 51 villages owe him the agricultural prosperity he brought them through simple water conservation efforts. Today, his village is one of the state's agri-produce hubs, supplying more than 25,000 metric tonnes of vegetables to various districts and nearby locations.
Outcome	Today, village is one of the state's agri-produce hubs, supplying more than 25,000 metric tonnes of vegetables to various districts and nearby locations. Source : https://www.thebetterindia.com/49868/jharkhand-waterman-simon-oraon-afforestation-baba-khaksi-toli-ranchi/ Images have been taken from above web page.
	Photographs

N18	**Karnataka**
Title/ Name of work undertaken	Farm ponds at Dharwad in Karnataka
Location	Dharwad Diostrict
Organisation/NGO/Persons responsible to undertake the work	Deshpande Foundation, Tata Trust
Description	Farm ponds have been proving effective against the drought in Karnataka also where majority of farmers of 20 villages in Navalgund taluk of Dharward district are unaffected by the drought. The farm ponds dug in low-lying areas allow farmers to harvest occasion al rainfall, store water and use it to provide timely irrigation to their crops.
Outcome	The farmers are able to irrigate and harvest 3-4 crops in a year. Their income has more than doubled and they are experimenting with commercially viable crops like papaya, beyond traditional ones such as cotton, maize, onion, chilly and pulses. The Deshpande Foundation with the support of the Tata Trust carrying out the work. Source: https://www.huffingtonpost.in/satish-chapparike-/how-farmers-are-braving-s_b_9770128.html?utm_hp_ref=india Images have been taken from above webpage.
	Photographs

Farm pond in Navalgund Taluk, Karnataka

Earthmover at work to dig a farm pond

N19	Karnataka
Title/ Name of work undertaken	Participatory Aquifer Mapping at Bangalore in Karnataka
Location	Bangalore
Organisation/NGO/Persons responsible to undertake the work	Community
Description	Three communities in southeast Bengaluru – Rainbow Drive, Adarsh Palm Retreat and Renuka School adjacent to Kaikondarahalli Lake, have created individualised water management plans to solve problems like water shortage, reliance on borewells and flooding. Biome Environmental Trust, ACWADAM and Mapunity with funding from Wipro Ltd. spent three years researching the water that lies beneath the surface in a research project called Participatory Aquifer Mapping (PAQM). In Rainbow Drive, banning borewell digging and installing recharge wells, rainwater harvesting systems, sewage treatment plans and adopting a strategy to use less water, the community is now self-sufficient for its water needs. In Adarsh Palm Retreat and Renuka School, the community decided to convert the shallow aquifer into a storage tank to be recharged by rainwater using open wells.
Outcome	The PAQM project team has compiled all of the information on groundwater management and aquifer research into a publicly accessible website **urbanwaters.in**, launched on 11th August 2017. It explains anything and everything there is to know about water in Bengaluru. Resources in multiple languages, successful stories of case studies and even comic strips are available all in the effort to explain and inspire citizens to take charge of their water supply. The learnings from the PAQM project have proved sustainable water management is possible. Source : http://bengaluru.citizenmatters.in/bangalore-water-problem-solutions-21016
Photographs	

N20	Karnataka
Title/ Name of work undertaken	Rainwater harvesting at Bangalore in Karnataka
Location	Bangalore
Organisation/NGO/Persons responsible to undertake the work	Mr AR Shivakumar
Description	The family of AR Shivakumar a senior scientist in Bengaluru is doing without a water connection for last two decades. The senior scientist has built a water harvesting system that yields more than 400 litres of water daily. The water harvesting system is simple – water from the sloping roof is collected in underground tanks, where the purification process happens.
Outcome	It is using treated rainwater not just for bathing and washing, but also for drinking. Source: https://www.ndtv.com/bangalore-news/bengaluru-man-hasnt-paid-water-bill-in-22-years-why-thats-a-good-thing-1674126 Images have been taken from above web page.
	Photographs

N21	Karnataka
Title/ Name of work undertaken	Borewell recharging at Kalaburagi, Raichur, Koppal, Vijayapura and Dharwad districts in Karnataka
Location	Kalaburagi, Raichur, Koppal, Vijayapura and Dharwad districts
Organisation/NGO/Persons responsible to undertake the work	Nanasaheb Dharmadhikari Pratishthan
Description	Maharashtra-based Nanasaheb Dharmadhikari Pratishthan has initiated water conservation efforts in Karnataka with focus on borewell recharging. In Solapur taluk too the foundation has reportedly facilitated the recharging of 5,000 borewells. In Karnataka, the foundation is working in Kalaburagi, Raichur, Koppal, Vijayapura and Dharwad districts. The foundation has named this campaign as Jala Punar Bharan.
Outcome	So far, the foundation staff has prepared around 30 borewells for recharging. Source : https://www.deccanherald.com/content/620708/innovative-way-borewell-recharging.html Images have been taken from above webpage.
Photographs	

Members of Nanasaheb Dharmadhikari Pratishthan working with farmers to dig a trench around a bore well

N22	**Kerala**
Title/ Name of work undertaken	Mazhapolima-a community based open well recharge Prograamme
Location	59 Gram Panchayats , Thrissur District (43000 house holds)
Organization/NGO/Persons responsible to undertake the work	Arghyam
Description	Recharge Ground Water by feeding rainwater into openwells, ponds and borewells.
Outcome	Improved drinking water availability and service level Reduced the impact of drought and subsequent public spending on water tankers for water stressed regions Source : http://www.indiawaterportal.org/articles/mazhapolima-recharging-open-wells-kerala
Photographs	

N23	Madhya Pradesh
Title/ Name of work undertaken	Watershed Management in Madhya Pradesh
Location	Madhya Pradesh
Organisation/NGO/Persons responsible to undertake the work	Samaj Pragti Sahayog, Madhya Pradesh.
Description	Since inception, SPS has taken up over 112,000 acres for direct implementation of watershed programmes spread over 81 villages, leading to effective spending of Rs. 115 million and generating 1.2 million person-days of employment.
Outcome	The total storage capacity of the water harvesting structures created by SPS is over 25 million cubic meters Rabi irrigation has shown a rise of 300% and the overall irrigation ratio (GIA/GCA) has more than doubled
Photographs	

N24	Madhya Pradesh
Title/ Name of work undertaken	Farm Ponds
Location	Dewas
Organisation/NGO/Persons responsible to undertake the work	Community
Description	Dewas a district in parched Malwa the region has won five national awards for rain water harvesting. Courtsey to the unique idea of farm pond now named 'Pani Bachao Dhan Kamao' (save water, earn money) campaign introduced ten years back. Under the campaign administration chipped in with technical inputs and farmers were urged to dig out one tenth area of their land and turn it into farm ponds. After knowing about the benefits of farm pond, farmers started digging ponds on their own land with the help of tractors. Today there are more than 1,000 irrigational ponds out of which 564 ones, which are known as Rewa Sagar, were made without any government fund.
Outcome	The concept of farm ponds has made about 400 villages drought proof. The United Nations also had selected Dewas district's community water management works in the best three water management practices in the world under the category of 'Best Water Management Practices' for 2011-2012. Source : https://www.hindustantimes.com/bhopal/save-water-earn-money-dewas-farmers-script-a-success-story/story-K38JEYMgE46urNQtWkN4aL.html Images have been taken from above web page.
Photographs	

Mr Surendra Singh of Harnawada village in Dewas has dug out farm ponds for rain harvesting. The farm ponds have improved the irrrigational facilities and increased the crop productivity.

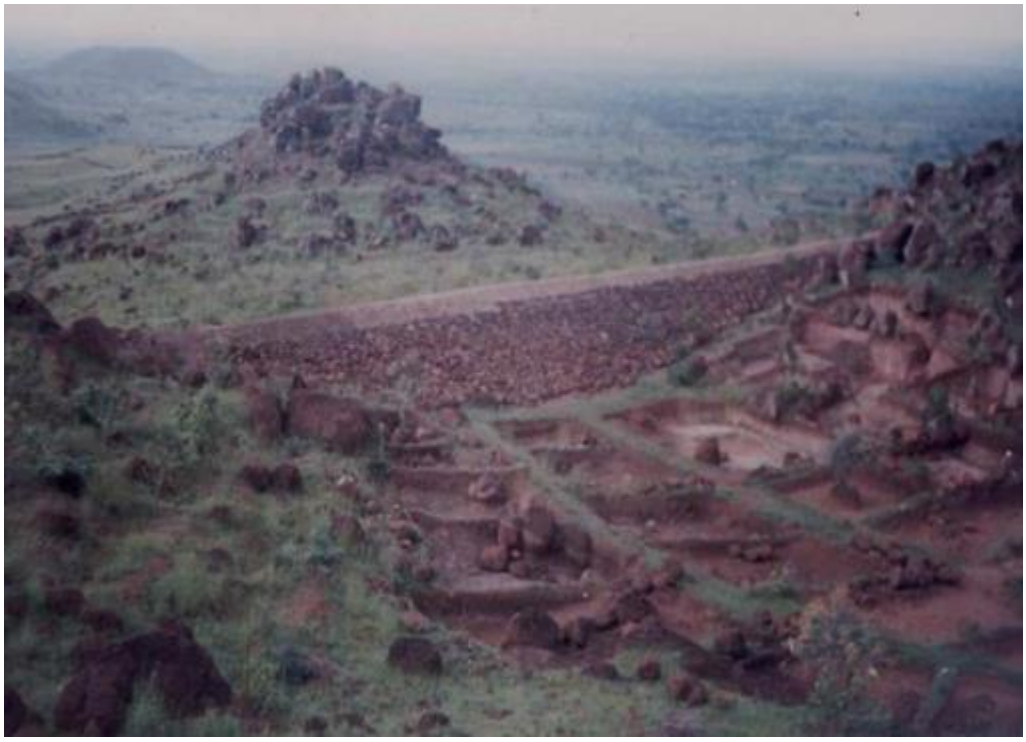
N25	**Madhya Pradesh**
Title/ Name of work undertaken	Desilting of water bodies at Indore in Madhya Pradesh
Location	Indore
Organisation/NGO/Persons responsible to undertake the work	Farmers & Administration
Description	Indore Inspired by the success of the campaign in Dewas, the neighbouring Indore district administration has also worked out a smart plan. It has asked farmers to de-silt water bodies and transport the mineral rich soil to manure fields. The idea is working both ways as it is saving the district administration money in deepening water bodies and giving farmers mineral-rich manure for the fields at an affordable cost. All they have been asked to do is dig 3-5 feet deep and use 1/10th of the soil to strengthen the embankment. The plan has begun to pay rich dividends to both government and farmers in water crisis-hit areas.
Outcome	The plan has begun to pay rich dividends to both government and farmers in water crisis-hit areas. Source: https://www.hindustantimes.com/indore/indore-dig-ponds-a-win-win-plan-for-farmers-government/story-gskplPeOQSlJrEINPqB88K.html
Photographs	

N26	**Uttar Pradesh**
Title/ Name of work undertaken	Pani Panchayat at Jalaun, Hamirpur and Lalitpur districts in Uttar Pradesh
Location	Jalaun, Hamirpur and Lalitpur districts
Organisation/NGO/Persons responsible to undertake the work	Women
Description	Women groups in Jalaun, Hamirpur and Lalitpur districts also in Bundelkhand have joined hands to form pani-pnachayat. The focus of these paani panchayats, mostly led by dalit women, is to create more water resources, revive old ones and conserve natural water bodies with the help of traditional and modern technology.
Outcome	The first paani panchayat was formed in 2011 in Jalaun district. By September 2011, a total of 96 such water resource management councils were formed. Local organization Parmarth Samaj Sevi Sansthan is supporting both the initiative in Bundelkhand. Source : https://www.downtoearth.org.in/news/bundelkhands-dalit-women-join-hands-to-droughtproof-their-villages-39315 Images have been taken from above web page.
	Photographs

N27	Maharashtra
Title/ Name of work undertaken	Tamaswada Pattern (TP) nalla treatment to restores and enhances the capacity of existing structures for ensuring water security
Location	Village Tamaswada, Taluka Selu, District Wardha, Maharashtra
Organisation/NGO/Persons responsible to undertake the work	Purti Sinchan Samruddhi & Kalyankari Sanstha (NGO), Wardha, Maharashtra
Description	Nalla Treatment **1.** Repair, widening and deepening of Cement Nalla Band-15 numbers **2.** Repair, widening and deepening of Storage bandhara- 10 numbers **3.** Repair, widening and deepening of Uncoursed Rubbel Machinary Plugs-6 numbers **4.** Construction of Gabion structure- 15 numbers
Outcome	Upon the treatment of nala bed, in 0 to 3.5 km of the nala bed, full of rain water was stored. There was no flood in rainy season and water is available at every portion of nala from ridge portion to valley portion with high increase in area under cultivation. Increase of about 4m to 10 m in water level of surrounding wells has been noticed. This has led to other benefits like ample water for all types of purposes; due to recharging ground water table no flood, no draught, no migration of farmer; high growth in area under cultivation of kharif and rabi; zero land acquisition process; free village road from excavated material; flood free process; conservation of nature & environment; water available from ridge to valley (every portion); facility to lift water from nala bed for irrigation.
Photographs	

N28	**Maharashtra**
Title/ Name of work undertaken	Watershed Development and Management
Location	Ralegan Siddhi Pariwar, At & Post- Raleganssiddhi, Tal- Parner, Dist- Ahmednagar,
Organisation/NGO/Persons responsible to undertake the work	Mr Anna Hazare
Description	Ralegan Siddhi is situated in Parner taluka of Ahmednagar district, state of Maharashtra. The area falls into drought-prone zone of the country. Being a rain shadow area, rainfall is scanty. Before 1975, there was no storage and scarce ground water resulted in a long haul to fetch water for household needs. Poverty due to low productivity in agriculture led to migration of population.
Outcome	With ridge to valley approach and measures like contour bunds, Gully plugging, nallah bunding and construction of check dams, restoration of leaking percolation tank etc. checked the fertile soil runoff & increased water table from 20 m (in 1975) to 6.5 m depth. It boosted agriculture - Irrigated Cultivable area increased from 543 ha in 1975 to 651 ha & double cropping, change of farming system, horticulture plantations, vegetable cultivation and dairy farming were promoted. Uncultivable land reduced from 241 ha to 122 ha. Reserved Forest area went up from 100 ha to 136 ha.
Photographs	

N29	**Maharashtra**
Title/ Name of work undertaken	Watershed Development Programme
Location	Hiware Bazar Tal- Ahmednagar, District- Ahmednagar Maharashtra
Organisation/NGO/Persons responsible to undertake the work	Mr. Popatrao Pawar. Employment Guarantee Scheme, Ideal Village scheme of State Govt. through Yeshwant Watershed Development Trust Govt of Maharashtra Local NGO People of Hivare Bajar All the works were implemented through EGS by the laborers from the Village.
Description	Continuous contour trench (CCT), Deep CCT, Earthen Structures, Percolation Tank, CNB Works, Widening and deepening of Nalla Bed, Cement Storage Tank, Compartment bunding, Plantation.
Outcome	➢ Rise in Watertable (70-80 ft. to 20-25 ft.) ➢ Change In Cropping Pattern (Jawar & Bajara to Onion, Potato, Horticulture, vegetable, floriculture) ➢ Increase in cropping intensity ➢ Change In Standard Of Living Due To Economic Stability
Photographs	



N30	Maharashtra
Title/ Name of work undertaken	Watershed Development Works
Location	Kadwanchi watershed, located in Jalna Taluk
Organisation/NGO/Persons responsible to undertake the work	Krishi Vigyan Kendra, Jalna led by Mr. Anna Borade, scientist and founder of the KVK. The project received funding support under the Indo-German Watershed Development Programme, through the National Bank for Agriculture and Rural Development (NABARD).
Description	The watershed works taken up included both area treatment and drainage line treatments, following the ridge to valley approach. Area treatment included continuous contour trenches, farm buds, plantations, agro forestry and agri-horticulture etc. Drainage line treatment included gully plugs, gabions, check dams, farm ponds etc.
Outcome	a) Increase of cultivated area by 115 % and irrigated area by 114%, decrease in area classified as rain fed declined by about 64%; decline in area classified as current fallows/other fallows by 58% and decline of cultivable wasteland by 58%. b) Reduction in area under coarse cereals (sorghum and pearl millet) by 42 per cent, and substantial increase in area and production of black-gram, chickpea and wheat, ginger, gram and cotton. c) Improved availability of green fodder from grazing land led to a two fold increase in the number of crossbred cows and three-fold decrease in indigenous cows. d) The employment and income of landless persons has increased substantially compared to the pre-treatment period. Source : http://indianexpress.com/article/india/in-arid-marathwada-village-turns-into-oasis-with-water-management-4572463/
Photographs	

Cement bund at Kadwanchi

Continuous contour trench in Kadwanchi

N31	Maharashtra
Title/ Name of work undertaken	Artificial Well Recharge in Bazar Wahegaon
Location	Bazar Wahegaon, a village in Badnapur Taluk of Jalna District, has a geographical area of 1592 ha. The village has an area of 1500 Ha and is dependent on rain-fed agriculture. Farmers have constructed both open wells and bore-wells; however many of them have gone dry and do not receive sufficient water even in the rainy season. The village has 183 households with a population of 1039 persons
Organisation/NGO/Persons responsible to undertake the work	Vanrai Foundation funded by CTR20 Manufacturing Industry Ltd
Description	The works included both soil and water conservation structures - contour bunds and bund plantation on 178 ha, and other water conservation and water harvesting structures as well as revival of 10 existing farm ponds for recharging of wells. The village also mobilized funds for repair of five existing stream bunds constructed earlier under government programmes Bazar Wahegaon has 250 bore wells and 150 open wells used for irrigation. The total number of wells, which underwent artificial recharge, was 118. The distance from the stream was criteria for selecting wells for recharge. The first task was to divert water flowing from the Kautika nala, a rain-fed stream draining into Sukhna River, through recharge structures.
Outcome	Dug-well recharge project helped to recharge 116 wells 8-10 times more than before, harvesting about 70% of the rainwater and greatly benefitting farmers. Ground water level has substantially increased and water is now available both for drinking and protective/supplemental irrigation. Dug well recharge has contributed significantly to meet people's needs in during extreme drought conditions when ground water sources suffer stress. Recharged wells provide water security to the village community. At the peak of the drought of 2013, this was one of the villages of Jalna district, which had food and water security. The wells have water throughout the year now, whereas they used to dry up completely in summer before well recharging work. The various water conservation measures helped to harvest about 70% of the monsoon rainfall, solving the problem of drinking water and allowing farmers to irrigate their fields for both monsoon and winter crops. Some farmers are now even growing vegetables in summer.
Photographs	

Stabilization Pit for well recharging

Recharged dug well with inlet pipe

N32	**Maharashtra**
Title/ Name of work undertaken	Participatory Irrigation Management – Waghad Project
Location	Waghad Irrigation Scheme, commissioned in 1981, is located in Nashik district of Maharashtra. The scheme's cultivable command area is 9642 ha. It caters to Irrigation needs of 15926 small farmers.
Organisation/NGO/Persons responsible to undertake the work	'Waghad- Project Level Water Users Association (PLWUA)
Description	In 1991 three nos Water Users associations were formed at the tail end area of canal command for operation and management of the scheme. Success of these WUA entire command gradually formed 24 nos WUA by 2004.Further all WUA joined forces to form 'Waghad- Project Level Water Users Association (PLWUA)' to take over operation & management of entire irrigation scheme . The main features are:- • Supply of Irrigation water on volumetric basis. • Water measurement by Standing wave flume & Cut throat flume. • Canals run 5-6 times in a year. • Tail to Head Irrigation is being practiced for last 25 yrs. • This has led to the trust building for PIM in tail ender farmers who generally are deprived of irrigation water.
Outcome	During rotation period, some canal water is stored in Nalas and small check dams leading recharge of ground water which promotes conjunctive use of water leading perennial cropping . • Availability of water ensured cultivation of diverse crops and cash crops. • 50% command area is perennially cultivated. • Farm labor employment increased to 10 months/year.
Photographs	

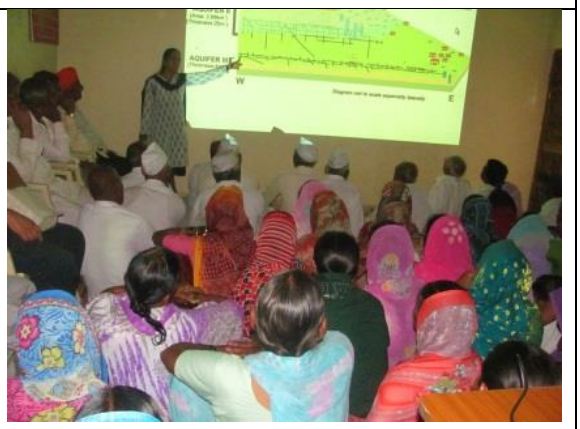
N33	**Maharashtra**
Title/ Name of work undertaken	Participatory groundwater management in Randullabad Village
Location	Randullabad Village,Koregaon block of Satara district, Maharashtra
Organisation/NGO/Persons responsible to undertake the work	Advanced Center for Water Resources Development and Management (ACWADAM) with the support from Arghyam Trust, Bengaluru and in collaboration with BAIF, Pune. The program was implemented through village water committee (VWSC) in partnership with gram panchayat and community.
Description	Randullabad village is one of the progressive villages from western Maharashtra which is totally dependent on groundwater for fulfilling all its needs. The participatory groundwater management project was implemented in Randullabad between January 2011 and December 2013. During these three years, a detailed hydrogeological study was conducted in Randullabad. A monitoring network, which included an automatic weather station for monitoring of weather parameters, 'V' notch for monitoring run off, monthly well monitoring for selected wells to understand the change in groundwater levels, water quality monitoring to understand the quality of water was set up in the village. The monitoring of these parameters was done for three years. The community was actively involved in the whole monitoring process. Based on the data collected in Randullabad, aquifers were delineated and the storage and transmission capacity of the aquifers was assessed. This helped in developing a water balance for Randullabad for two years. All this information was shared with the community. The following key activities were undertaken in the village. **Hydrogeological inputs for the watershed development activities:** ACWADAM team conducted hydrogeological study in the village and identified locations for construction of check dams and recharge structures. Additionally, sites were identified for recharge augmentation. BAIF and Village watershed committee implemented the watershed development program on the basis of the guidelines provided by ACWADAM. **Capacity building and sensitization of community:** ACWADAM team conducted a number of trainings

	and sensitization activities for generating awareness about groundwater management and other water related issues. **Aquifer based groundwater management plan:** There are 3 aquifer systems in Randullabad. ACWADAM team delineated the aquifer systems, calculated the transmissivity and storativity values, prepared the groundwater balance for the three aquifers for two years. On the basis of this data, a groundwater management plan was prepared which was shared with the community.
Outcome	The aquifer based groundwater management plan was prepared and shared with the community. The plan included 8 protocols for the equitable, efficient and sustainable use of groundwater. The village has a complete ban on bore well drilling. This ban is still in place after almost 18 years. The village is tanker free. No water intensive crops like sugarcane or banana are grown in the village. There is significant improvement in the income of farmers due to allied activities like dairy, horticulture. The entire horticulture is under drip irrigation. Randullabad village was awarded the 'Best water conservation practices award' by IBN Lokmat in May 2016. The award was presented by the Hon'ble Chief minister of Maharashtra, Mr. Devendra Phadanavis in Mumbai.
Photographs	

(A)

(B)

(C)



(D)

Photographs

A:Use of sprinklers is more than 60%
B: Construction of check dam on the basis of hydrogeolgoy
C: Monitoring of wells
D: Community sensitization workshop

N34	**Maharashtra**
Title/ Name of Work Undertaken	Water Resources Development Programme in Wardha District
Location	*542 Villages in Wardha District* - 46,302 families and 1,49,778 acres of land covered under Water Resource Development and Soil Conservation Programme
Organisation/NGO/Persons responsible to undertake the work	Kamalnayan Jamnalal Bajaj Foundation, Wardha (KJBF) in collaboration with • Rural Community of Wardha District. • Government of Maharashtra. • TATA Trusts • National Bank for Agriculture & Rural Development (NABARD).
Description	WATER RESOURCE DEVELOPMENT AND SOIL CONSERVATION STRUCTURES ❖ 224 Rivers/Streams of 556 kms area rejuvenated ❖ 96 Check Dams constructed ❖ 3036 Farm Ponds/Recharge Pits constructed ❖ 2128 Wells recharged ❖ 249 Group Wells constructed ❖ 1512 Lift Irrigation Devices installed ❖ 32 Percolation Tanks constructed ❖ 4038 Drip and Sprinkler Irrigation Systems installed ❖ 2230 Bori-Bundhs are installed ❖ 1267 Acres of Farm Bunds formed ❖ 2225 Gabion Structures formed
Outcome	46,302 Families and 1,49,778 Acres of land covered under Water Resource Development and Soil Conservation Programme in 542 Villages. Water availability in 3040 Wells has been increased. River flow increased from seasonal to 8-10 months. Water table increased up to 8 ft in surrounding areas of interventions. Availability of water for Rabi and Summer crops. Average yield increased from 4 qt to 10 qt. per acre in the Cotton crop.
	Photographs

A rejuvenated River at village Dighi in Wardha district under Yashoda River Basin Project.

A rejuvenated River at village Salod in Wardha districtunder Yashoda River Basin Project.

Construction of Recharge Pit

Boribandh

A percolation tank constructed at village Parsodi in Wardha district.

A check dam constructed in village Salai (K) in Wardha district

N35	**Maharashtra**
Title/ Name of Work Undertaken	Desilting of Khadakvasla dam
Location	Khadakvasla dam
Organisation/NGO/Persons responsible to undertake the work	Green Thumb
Description	The organization mobilized people and CSR funds for desilting of Khadakvasla dam. Almost 75 lakh cubic meteres of silt has been removed from the dam area which has been distributed free to farmers in the surrounding area. Approx. 5 lakh trees were planted to avoid further siltation into the dam, benefitting the over all growth in the 'Green Cover' in the region.
Outcome	This desilting has helped to increase water capacity of Khadakvasla dam by 0.20 TMC. Silt distributed free to farmers, has improved soil fertility and yield, resulting in greater income. There has been value addition in nature around the lake due to tree plantation. Large Social Contribution in terms of Efforts has been the main stay of the Project.
Photographs	

N36	Maharashtra
Title/ Name of work undertaken	Watercup and watershed activities
Location	Maharashtra
Organisation/NGO/Persons responsible to undertake the work	Pani Foundation (Aamir Khan & Kiran Rao)
Description	The Foundation organized the first Satyamev Jayate Water Cup competition in 2016. The idea was tested in 3 talukas, with 116 villages in its first year. Subsequently, the competition expanded to include several talukas and thousands of villages in the state in the next two years. The foundation began modestly by selecting only 3 tehsils for the mission, but has scaled up to as many as 4,032 villages spread over 75 drought-hit tehsils in four regions of Maharashtra—Marathwada, Vidarbha, North Maharashtra, and Western Maharashtra in 2018. In 2016 and 2017, the participating villages created an aggregate storage capacity of 10,000 crore litres of water.
Outcome	it rained last year, the water stayed where it fell, the first time such a thing had happened in years. A total 1368 crore litres of water storage was created, equivalent to 13,68,000 water tankers and around Rs 272 crore worth of annually saved water –
Photographs	

N37	Maharashtra
Title/ Name of Work Undertaken	Water budgeting at Golegaon village, Aurangabad district in Maharashtra
Location	Golegaon village, Aurangabad district
Organisation/NGO/Persons responsible to undertake the work	Community
Description	Drought affected Golegaon village in Aurangabad district has learnt to work around the water situation in their village. They have come up with the novel idea of a water budget for each household..
Outcome	This effort was made to cope with the severe drought situation that was persisting in the village since 2012. The budget lists out how much water should ideally be used by each of the 453 households in the village. The aim is to make optimum use of the 755 mm rainfall it receives. Source: http://www.indiawaterportal.org/articles/budgeting-every-water-cup Images have been taken from above webpage.
	Photographs

सत्यमेव जयते वॉटर कप स्पर्धा - २०१७

ता. खुलताबाद जि. औरंगाबाद

पाण्याचा ताळेबंद

गोळेगांव

१.पाण्याच्या उपलब्धतेचा अदाज (जमा)

१.१.एकुण पडलेले पावसाचं पाणी

क्षेत्र (हेक्टर) × पाऊस (मी.मी.) / १०००
१०१९.५७ × ७५५ / १०००
= ७६९.७७ कोटी लिटर

१.२.पाणी विभाजन

वाहुन जाणारे पाणी
बाष्पीभवन
मातीतील ओलावा
भूजल

टक्केवारी		
३५ %	२६९.४२	कोटी लिटर
३० %	२३०.९३	कोटी लिटर
१५ %	११५.४६	कोटी लिटर
२० %	१५३.९५	कोटी लिटर

१.३.जमिनीवर अडवलेले पाणी

उपचार	संख्या	साठवण क्षमता	एकुन साठा
वहिंग	६६	०.०४५	०.०००४२
शेततळे	३	०.२२	०.६६००
सिमेंट नाला बांध	२	१.४०	२८०००
माती नाला बांध	३५	०.६०	२१००००
पाझर तलाव	६	१०	६०००००
नाला खोलीकरण	४३	०.०००१	०.००४२
जल संधारण प्रकल्प द्वारे एकुण उपलब्ध पाणी			८७.४३कोटी लिटर

१.४. स्पर्धेच्या कालावधीत जमिनीवर अडवलेले पाणी

१.५. उपलब्ध पाणी

= एकुण पडलेले पावसाच पाणी - वाहुन जाणारे पाणी-बाष्पीभवन+अडवलेले पाणी

७६९.७७-२६९.४२-२३०.९३+८७.४३=३५६.८५कोटी लिटर

२. पाण्याची गरज(खर्च)

२.१ लोकांकरीता पिण्यासाठी व वापरासाठी लागणारे पाणी

लोकसंख्या	X	४०	X	३६५ / १००००००
२४५९	X	४०	X	३६५ / १००००००
= ३.५९ कोटी लिटर				

२.२. जनावरांकरीता पिण्यासाठी व वापरासाठी लागणारे पाणी

जनावरांची संख्या	X	४०	X	३६५ / १००००००
२०५९	X	४०	X	३६५ / १००००००
= ३ कोटी लिटर				

२.३. शेतीसाठी लागणारे पाणी

पिके	क्षेत्र	प्रति हे. गरज	एकूण गरज
ज्वारी	५५	०.४	२२.०
बाजरी	२०	०.२५	५.०
तुर	२२	०.४	८.८
हरभरा	४९	०.२५	१२.२५
कापुस	२५४	०.७०	१७७.८
ऊस	१०	२.९	२९.०
भाजीपाला	३७	०.५	१८.५
फळबाग	३२	०.१७	५.४४
आले	३०	१.०	३०.०
मका	२१०	०.४	८४.०
गहु	१११	०.४	४४.४
एकूण पिकासाठी लागणारे पाणी			४२९ कोटी लिटर

२.४. उद्योग धंद्यासाठी लागणारे पाणी

बांधकाम	= २ कोटी लिटर
इतर उद्योग	= २ कोटी लिटर
	= ४ कोटी लिटर

२.५. पाण्याची एकुण गरज

मानवी	+ पशुधन	+ शेती	+ उद्योग
३.५९	३.००	४२९	४
= ४४० कोटी लिटर			

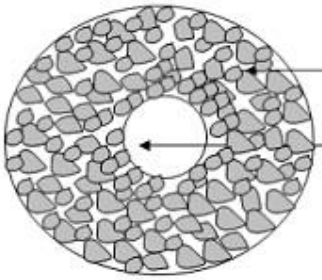
३. उपलब्ध पाण्याचा ताळेबंद

उपलब्ध पाणी (जमा) -	पाण्याची गरज (खर्च)
३५६.८५	४४०
= ८३.१५ कोटी लिटर पाण्याचा तुटवडा	

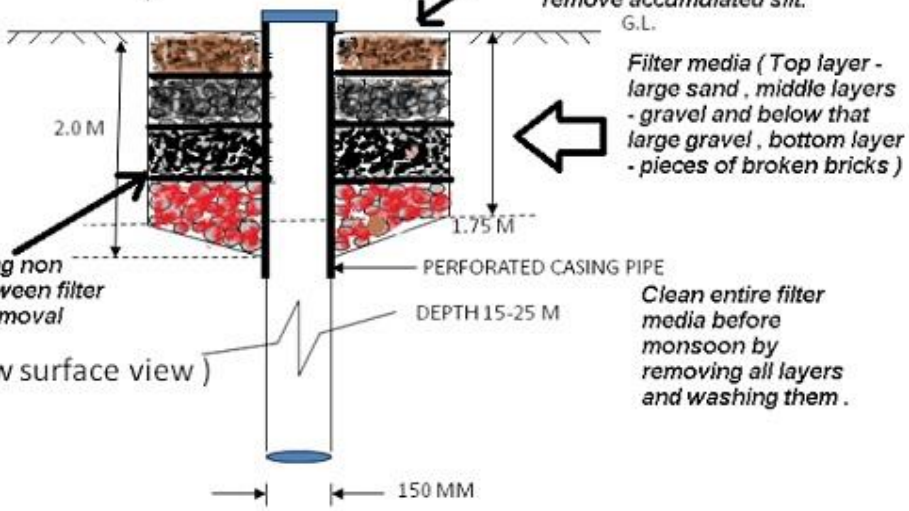
N38	Maharashtra
Title/ Name of Work Undertaken	Rainwater harvesting and recharge in Urban areas
Location	Pune
Organization/NGO/Persons responsible to undertake the work	Community
Description	Most of the residential complexes in Pune were dependent on bore wells. It was decided that they use rainwater to recharge these bore wells and raise the water table. The complexes are located in the foothills of the mountains, some bordering the hilltops while others are further down on the slopes. The mechanisms for catching, storing and diverting rainwater to recharge bore wells were planned depending on the location of the complexes. The flowing water from the hills was directed to the canals dug out to carry the water to the recharge pits for the bore wells through a window fitted with a wire mesh on the walls bordering the hill. Additionally, holes were made on the walls so it doesn't come in the way of water from the hills reaching the canals. The water collected on the rooftops and terraces was also channelized into the canals. Storm water lines within the premises were diverted into the bore well recharge pits.
Outcome	This has increased the sustainability of Tube Wells substantially.
Photographs	

Recharge Pit Structure for Recharging bore wells

A – PLAN (Surface view)



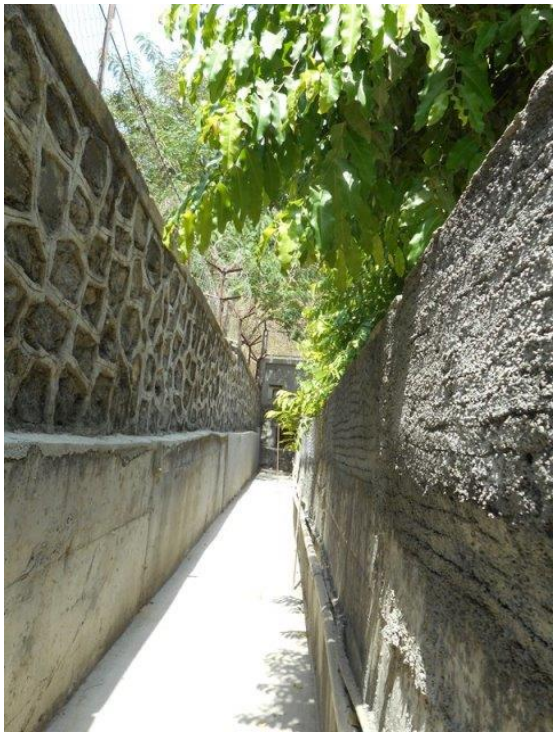
Discharge rain water into this pit , the bore well casing has to be perforated (small holes to be drilled and these holes covered with simple mesh to prevent clogging) . The water gets filtered by filter layers and enters the casing through these perforations .



B – SECTION (Below surface view)

Refer - https://gsda.maharashtra.gov.in/GWSpdf/RWH_GUIDE.pdf

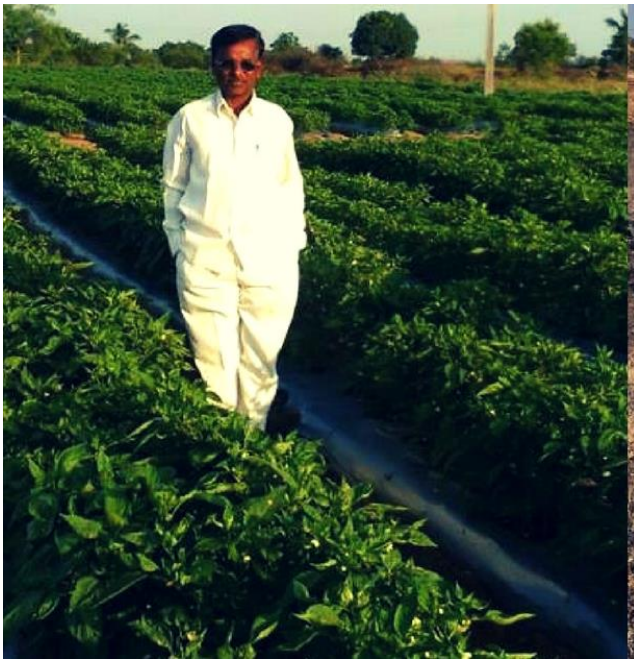
Note – Sketch is not to the scale



Dugout canals to divert the rain water flowing from the hills to recharge pits

Wall with holes to direct the rain water flowing from the hills to dig out canals

N39	Maharashtra
Title/ Name of Work Undertaken	Watershed development at Kadbanwadi village, Indapur taluka, Pune in Maharashtra
Location	Kadbanwadi village, Indapur taluka, Pune
Organisation/NGO/Persons responsible to undertake the work	Community
Description	The village of Kadbanwadi in the Indapur taluka of Pune in is an example of this self-sufficient village due to efforts of Mr Bhajandas Vitthal Pawar. Mr Pawar motivated the villagers to take up measures for water conservation. Kadbanwadi has now 100 farm ponds, 3 percolation tanks, 27 cement bunds and 110 earthen bunds.
Outcome	These water conservation systems have been utilising over 300 hectares of land in the village. Apart from soil and water conservation,villagers also took up efforts in conserving Kadbanwadi's 500 hectares of forestlands. Source: https://www.thebetterindia.com/123663/water-conservation-kadbanwadi/
Photographs	



N40	**Maharashtra**
Title/ Name of Work Undertaken	Desilting of reservoir at Yavatmal in Maharashtra
Location	Yavatmal
Organisation/NGO/Persons responsible to undertake the work	Community
Description	The ongoing efforts since last two years made by a few residents of Yavatmal and Prayas to desilt Nilona reservoir the primary drinking water source for them since 1972. It also helped bridging the gap between the govt departments and the people. The Mission Deep Nilona (MDN) initiative is inspiring the residents of the neighbouring districts to take their problems in their hands and work towards solving them
Outcome	With collective effort, Yavatmal keeps away water problem. Source: http://www.indiawaterportal.org/articles/water-worried-no-more Images have been taken from above webpage.
	Photographs

Nilona dam

N41	**Maharashtra**
Title/ Name of Work Undertaken	Saguna Rice Technique at Saguna baug in Maharashtra
Location	Villages Wadhona, Vizora, Sunderwadi, Padmavati, Bhorkheda & Vadod Tangda in Jalna district
Organisation/NGO/Persons responsible to undertake the work	Mr Chandrashekhar Bhadsavle
Description	Saguna Rice Technique is a method of cultivation of rice and related rotation crops without ploughing, puddling and transplanting (rice), on permanent raised beds. As the technique involves using residual moisture, the farmer can easily cultivate two crops in a year. With zero tillage, roots of the older crop are retained in the post-harvest soil. The root network prevents the soil from cracking, creates aerobic pathways after it dries up, contributes organic carbon to the soil, helps retain soil moisture, and, thereby, lowers water consumption for the next crop by 40-50 per cent.
Outcome	It is found to have benefitted farmers by solving problem of labour shortage, reducing use of fertilizers and chemicals. It also reduces water required for cultivation, thus raising ground water level, increasing water holding capacity of soil and making soil more productive. Source: https://srt-zerotill.com/
Photographs	

N42	Maharashtra
Title/ Name of Work Undertaken	Water budgeting and conservation at Patoda village, Aurangabad district in Maharashtra
Location	Patoda village, Aurangabad district
Organisation/NGO/Persons responsible to undertake the work	Village community led by Village head
Description	Villagers regard water as more precious than money. They follow strict rules about usage and strictly carry the water audits. Water meters are installed in every households and entire village recycles each drop of waste water it generates. There are water ATMs from which water is drawn by villagers.
Outcome	Today no rain water flows out of the village. Percolation has recharged the aquifers and the water table has risen. Source: https://economictimes.indiatimes.com/articleshow/52061606.cms
Photographs	

N43	**Maharashtra**
Title/ Name of Work Undertaken	Crowd funding for desilting of nala at Horti village of Tuljapur Taluka, Osmanabad district in Maharashtra
Location	Horti village of Tuljapur Taluka, Osmanabad district
Organisation/NGO/Persons responsible to undertake the work	Village community
Description	farmers of Horti village of Tuljapur Taluka in drought stricken Osmanabad district have resorted to online crowd funding to de-silt and renovate a canal. Around 700 farmers have come together to widening, deepen and de-silt an 8km long canal that runs across their farms to increase its water holding capacity ahead of the monsoon. The cost of the work is approximately Rs 6 lakh, of which the villagers have collected approximately Rs 3 lakh for the work and the rest of which will be raised through an online crowd funding campaign that has been put together to help them raise the remaining amount. The crowd funding campaign has collected over Rs 1.9 Lakh in less than a week. The work started on May 17 and is almost completed.
Outcome	Villagers now are hopeful that this attempt to revive a water source and the prediction of a good monsoon will wash away all their woes.
Photographs	

N44	**Punjab**
Title/ Name of work undertaken	Beautification of the Holy Bein at Sultanpur Lodhi through the implementation of Seechewal Model
Location	village Seechwal,(31°09'36"N 75°17'57"E) Block Shahkot district Jalandhar (PB)
Organisation/NGO/Persons responsible to undertake the work	“Ek Onkar Charitable Trust” Nirmal Kuteya Seechewal , headed by Sant Balbir Singh Seechewal
Description	In Seechewal Model for pond cleaning, the water from the village sewerage system is collected in a pond. A filter-mesh is used to remove objects floating on the surface of water. Then the polluted water is taken into three separate wells. In the first well the silt from the sewerage is removed. In the second, oily substances are removed. The third well conveys the thus cleaned water in to the main pond. The water collected in the pond is aerated under sun rays. Trees are planted on the banks of the pond; a motor pump is installed to lift the treated water to send it to fields for irrigation through underground pipelines. For cleaning the rivers under Seechewal model, Industrial and domestic wastage is not thrown into rivers. Treatment plants (of Seechewal model) of sufficient capacity are installed in villages and towns. After treatment the water is used for irrigation through underground pipelines. Thick layers of silt are removed in order to promote water table recharge. Trees are planted along the banks of the rivers for enhancing beautification.
Outcome	Seechewal village (District Jalandhar), the first implementation site of Seechewal Model, treated water is being used in 17 acres of land. Sultanpur Lodhi (District Kapurthala) treated water of the town is being used for irrigation of more than 750 acres of land through a 13 KM long underground pipe line. Dasuya (District Hoshiarpur) the treated water is being used for irrigation of 400 acres of agricultural land through 5 Km long underground pipe line. Model is implemented in all 45 villages situated along the Holy Bein. The treated water is being used for irrigation. 50 villages of Doaba and Malwa regions of Punjab, which are situated even away from the Holy Bein,

	have adapted this model. Under the 'Ganga Mission', the national movement to clean the holy River Ganga, this model is being implemented in 1650 village in five states along the river. During the last two years about 800 village-Panchayats from five states - Uttrakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal have visited Seechewal and Sultanpur to see the working of this model and learn from it. In Hoshiarpur District nearly 6 thousand acres of land have been reclaimed from shallow water levels and agriculture getting boost and farmers are becoming prosperous. On the other hand, de-silting the bed of the river (BEIN) has restored the flow of surface and sub-surface water; thereby ground water recharge has become more efficient. As a result, ground water level has started rising along the course of Bein River in Kapurthala District. This has resulted in control of water level decline, reduction in consumption of electricity and reduction in application of fertilizers. Seechewal Model is a model of prosperity. It preserves natural sources, saves ground water, saves energy, decreases the spread of diseases, saves expenditure of farmers and brings more profit to them, promotes organic farming and is also very economical. More and more people are turning to it. It ensures safe natural resources and ecology of our earth if adopted properly.
Photographs	

N45	Punjab
Title/ Name of Work Undertaken	Soak pit project at Man Aspal village, Mansa in Punjab
Location	Man Aspal village, Mansa
Organisation/NGO/Persons responsible to undertake the work	Community-Farmers
Description	The soak pit project deals with waste water management to make the village drain free, and was started in 2015 as a pilot with support from a multinational company. Under the project, soak pits of 4 feet by 10 feet with a septic tank of 3 feet by 4 feet were constructed at cost of Rs 3.29 lakh Rs in all 65 houses. It solved the problem of flow of waste water to the pond. Most of the MGNREGA job card holders were employed in the project and total 113 days of employment were generated in the project. Apart from the soak pit project, the village also renovated the pond, bricklined a street and laid a drinking water pipeline, all under MGNREGS.
Outcome	In recognition of its efforts, the village won a national award by Union Ministry of Rural Development for year 2015-16. Source: https://timesofindia.indiatimes.com/city/chandigarh/mansa-village-chosen-for-national-award-for-water-conservation/articleshow/59078021.cms Images have been taken from above web page.
Photographs	

N46	**Rajasthan**
Title/ Name of work undertaken	Rain water harvesting and recharge structures at Kishori-Bhikampura in Rajasthan
Location	Kishori-Bhikampura
Organisation/NGO/Persons responsible to undertake the work	Tarun Bharat Sang, Rajasthan
Description	The first intervention by TBS was undertaken in Kishori village and subsequently the success story was repeated in other villages. The main objective of the intervention carried out was building and rejuvenation of Johads, which is a traditional rainwater storage tank in Rajasthan. They focused upon programs for community management and village swaraj. Till today, they have constructed over 10,000 johads in Rajasthan. Through community participation and management recharge structures and rain water storage structures were created. Supervisory groups were formed to look after proper operation and maintenance and desilting. The remarkable transformation wrought by the efforts of TBS is most apparent in Alwar district, particularly in the villages of Bhaonta-Kolyala.
Outcome	TBS has achieved remarkable improvements and progress in the interventions they carried out. Till date they have around constructed and restored 10,000+ water storage structures that serves thousands of people. About 750 villages spread over 6,500 sq kms have benefited from the water harvesting techniques introduced by the Tarun Bharat Sangh and have successfully mitigated their vulnerability to the severities of drought. In corporation to this collective actions were carried out through which measures were taken up for forest conservation thus giving rise to formation of a gram sabha as an institution for sustainability of the project. Farmers have also taken up several measures and changes in their agricultural practices thus making it more sustainable. For community upliftment work, TBS has attained several national recognitions and has set an example at global level. Source: http://tarunbharatsangh.in/wp-content/uploads/2013/06/25years.pdf
	Photographs

N47	**Rajasthan**
Title/ Name of work undertaken	Chauka System-Laporioya Model : Innovative Technique for Pastureland developmentand insitu soil and Water Conservation.
Location	Village Laporia, Block Dudu, District Jaipur, Rajasthan
Organisation/NGO/Persons responsible to undertake the work	Gram Vikas Navyuvak Mandal,Laporiya
Description	Chauka System- the technique is an improvement over compartmental bunding with provision of drainage. Rectangular Chaukas are constructed in a row keeping one long arm of Chauka open. Thus, the structure has one long, two short arms and two corners. A broad bund is made by putting earth from nearby small rectangular pits. These Chaukas are kept on slight upward gradient. When the Chaukas are filled to a depth of 9", the runoff overflows to the next compartment and then to next and finally to the drain which ultimately delivers in a pond. In the process adequate infiltration of water, conservation of moisture in pasture occurs and the excess is stored in the village pond
Outcome	About 760 hectares of agriculture land covered under moisture conservation, irrigation facility availed that benefitted 3200 families by enhanced productivity increase around 4 quintals per hectare of grain production, by creating irrigation facilities like gravity flow irrigation, well recharging and ensuring second crop by moisture conservation.
Photographs	


Chauka saturation
Legend
Google Earth

N48	**Rajasthan**
Title/ Name of work undertaken	Ground Water Conservation & Prospects To Ensure Sustainable Water Supply In Dargah Premises
Location	Dargah of Khwaja Moinuddin Hasan Chisty at Ajmer
Organization/NGO/Persons responsible to undertake the work	Dargah Committee- Khwaja Moinuddin Hasan Chisty
Description	Dargah premises is having a ground water reservoir popularly known as Jhalra, which is the main source of drinking water to the complex. It is fed by the drainage from the foothill of Taragarh. Due to poor maintenance for a number of years in the past, the Jhalra dried up in July, 2007. Dargah Committee took-up a reclamation project through community participation. The Committee decided to engage local traditional labourers having knowledge of restoration of wells, ponds and old Jhalaras. The work continued for a whole month and around 6000 sq.ft. area of Jhalra was scientifically excavated upto 22 feet depth. Garbage and debris were removed and the openings passes which were choked/closed for years were opened up and made pathway for ground water movement/flow. This resulted in restoring water level to a desired extent to resolve the drinking water problem of the township through community participation.
Outcome	By December 31 2008, water level in the Jhalra reached 40 feet making available 63 lakh litres of water per day. An average of 4.75 lakh litres of triple/double filtered water is supplied to the Dargah premises, meeting nearly 99 percent of the demand. In addition, three shallow tubewells have also been constructed, supplying pure water to pilgrims. Tests indicate that the water quality is very good.
Photographs	

Photograph of Dried Jhalra (Traditional Water Tank)

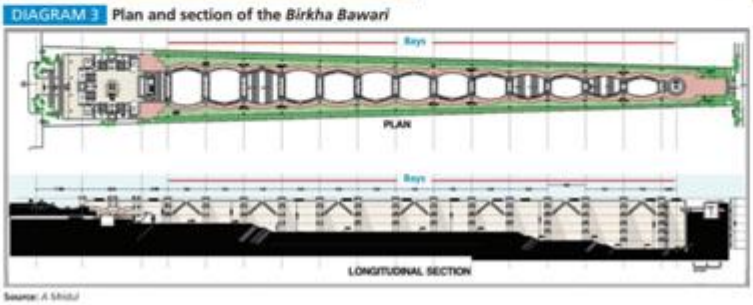
Photograph of Revived Jhalra (Traditional Water Tank)

N49	**Rajasthan**
Title/ Name of work undertaken	Jal Dal- Children's Institutions for Water Management at Barmer in Rajasthan
Location	Barmer
Organization/NGO/Persons responsible to undertake the work	Jal Bhagirathi Foundation (NGO)
Description	Due to lack of availability of drinking water, Government School in Godawas experienced poor enrolment and attendance rates. Children had to help their mothers fetch water from distant places and were at the suffering end of the problem of water access. The Gram Panchayat of the village constructed a 40,000 liter tank in school, enlargement of village pond and created a Jal Sabha in the village. To ensure maintenance of the newly constructed tank, a student body of 10 members called Jal Dal was constituted. The Jal Dal took the responsibility of cleaning the roof and ensuring clean water in the tank. They were also responsible for cleaning of silt chambers and meticulous functioning of the hand pump. The school children were also involved in environment conservation drives and in disseminating information about water stress to the villagers. This is an ongoing practice which is passed down to the younger students to maintain the tank. The students have also started a piggy bank in which students from higher classes contribute one rupee per month for maintenance of tank and purchased of water during times of scanty rainfall.
Outcome	This intervention has positively impacted education in the region and has yielded a growth in literacy rate. There has been a noticeable fall in the school dropout rate and attendance has become more consistent. Incidences of water borne diseases have reduced, clean water is available throughout the year for the village. The village has become self-reliant and is now no longer dependent on pricey water tanks run by mafia to fulfil their water requirements. Source: http://www.undp.org/content/dam/india/docs/good_practices_in_water_security_ideas_for_praxis.pdf
Photographs-yes	

N50	Rajasthan
Title/ Name of work undertaken	Adaptive Water Management at Mandli in Rajasthan
Location	Mandli
Organization/NGO/Persons responsible to undertake the work	Jal Bhagirathi Foundation (NGO)
Description	The villagers of Mandli, inspired by success of Jal Sabha's in Rajasthan came together and formed a Jal Sabha with active women participation in their own village to deal with crisis of drinking water. The members undertook a participatory planning exercise and decided to increase the area of pond which would allow it to capacitate more water. The main source of water for the village was a pond called the Gawai Talaab which has the capacity of 2,869 cubic meter. Owing it to its small catchment area and improper construction, the pond would become dry and women had to collect water from afar. The government was supplying limited water which was very saline and it was causing health hazards to the community. The members of the Jal Sabha then undertook a participatory planning exercise and generated funds through contribution of every household in the village. The money was then pooled into a Jal Kosh and to ensure maximum accountability. Once the pond was sufficiently enlarged, the villagers decided to help neighboring village communities to obtain water from it using a 'coupon system' at a charge of INR 100 for a 4000 liter tanker. This money is used for regular maintenance of the catchment by renovation of water channels and tree plantation to improve water inflow. The pond has since been able to provide water even in drought years and has greatly solved drinking water crisis in the area.
Outcome	Availability of sweet drinking water round-the-year and water security ensured even in a severe drought year. Expansion of capacity of Gawai Talab from 2869 to 5218 CuM and that of Narsingh Nasa from 2308 to 26601 CuM. Further, 13 villages benefited through this intervention by sourcing water through tankers. The Jal Sabha has achieved a sustainable financial source for regular maintenance of the talaab through coupon system. The village, has been able to adapt to changing climatic patterns and recurring droughts. Source: http://www.undp.org/content/dam/india/docs/good_practices_in_water_security_ideas_for_praxis.pdf
Photographs-yes	

N51	**Rajasthan**
Title/ Name of work undertaken	Birkha Bawri at Jodhpur in Rajasthan
Location	Jodhpur
Organization/NGO/Persons responsible to undertake the work	Umaid Heritage Real Estate
Description	The Umaid Heritage Site is a private township located in southeast of the Umaid Bhawan Palace in Jodhpur, Rajasthan and was faced with acute water shortage. To overcome this problem, a Rain Water Harvesting (RWH) system was developed inside the housing complex. The Birkha Bawri as the structure draws inspiration from traditional step wells in the region and is used to catch rainwater from the site catchment area. Apart from storage and conservation of rainwater, the project also highlights sustainable storm water management in the housing complex, as it collects runoff and minimizes water logging in the area. The rainwater is collected from open areas through natural slopes as well as from the roof top of the house connected through drainage conduits. The water enters from both sides of the underground longitudinal storage structure (Bawri) and holds 17.5 million liters of harvested rainwater annually and serves as a reliable source of water for meeting landscape requirements. The steep depth of the tank (18 meters) provides shade to water and reduces evaporation losses. The water stored in the structure is used to supply water to the residents during lean periods and also to meet horticulture needs.
Outcome	The RWH system has greatly reduced dependence on municipal water supply and groundwater extraction by 50%. Economic benefits such as reduction in use of water tankers have led to savings of Rs. 2.36 crore annually. The structure has increased property value of the complex by demonstrating perfect combination of good architectural design and well maintained green spaces in scanty rainfall region. Overall dependence on municipal storm water structure has lessened and water logging controlled. The project provides green landscaped area to the site, which is hugely sustainable. Source : SELECTED BEST PRACTICES IN WATER MANAGEMENT by Niti Aayog August 2017, with support of TERI university
	Photographs-yes

DIAGRAM 3 Plan and section of the *Birkha Bawari*



Source: A Mistri

N52	Tamil Nadu
Title/ Name of work undertaken	Desilting of canal at Cuddalore district in Tamil Nadu
Location	Cuddalore district
Organisation/NGO/Persons responsible to undertake the work	Ms S Ranganayaki
Description	In 2001, when Ranganayaki took over her farmlands in Vadamur village near the Veeranam lake in Tamil Nadu's Cuddalore district, she realised that water supply for farming could be improved by desilting the Raja canal. This 10-km long canal is the primary source for irrigating 1,300 acres of farm land, spanning 13 villages.
Outcome	Encouraging story of a woman who ensured, through her own initiative that a canal was desilted and water flow to the village that was blocked for decades was restarted in Cuddalore district. Source : https://www.firstpost.com/living/tamil-nadus-water-warrior-how-s-ranganayaki-brought-water-to-an-entire-village-3314406.html
Photographs -yes	

N53	**Tamil Nadu**
Title/ Name of work undertaken	Desilting of tank at Madurai district in Tamil Nadu
Location	Madurai district
Organisation/NGO/Persons responsible to undertake the work	Community
Description	A group of 30 youths from Pottal near Palayamkottai, all working with private firms and still continuing farming operations in their ranches, have contributed ₹30,000 for desilting one of the four irrigation tanks close to their village.
Outcome	Residents of Pottal near Palayamkottai in Madurai district mobilised fund to complete desilting of an irrigation tank. Source : https://www.thehindu.com/news/cities/Madurai/residents-contribution/article18560849.ece
Photographs -yes	

N54	Tamil Nadu
Title/ Name of work undertaken	Rain Water Harvesting Structures in Coimbatore city, Tamil Nadu
Location	Coimbatore city
Organisation/NGO/Persons responsible to undertake the work	Sirithuli(NGO) with District administration
Description	Recharge pit with Recharge wells. (215 Nos) on Road side and open spaces
Outcome	Rise of water levels, has been observed. Groundwater levels of Coimbatore District have been raised by 13.92 meters
Photographs	

Rectangular Structure-

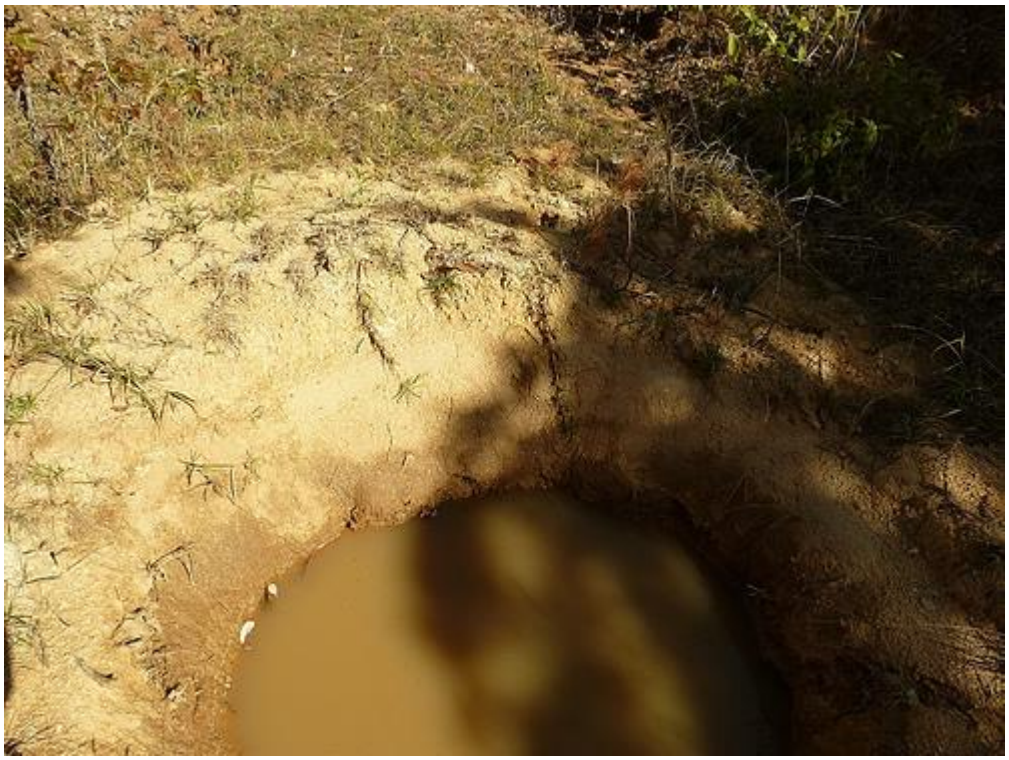
Rainwater harvesting structure in Coimbatore city, Coimbatore Block, Dist. Coimbatore, Tamil Nadu

Circular Structure

N55	Telangana
Title/ Name of work undertaken	Rooftop rainwater harvesting at Hyderabad in Telangana
Location	Hyderabad city
Organisation/NGO/Persons responsible to undertake the work	Mr Murli Sharma
Description	Retired scientist(ICRISAT) Mr Murli Sharma has been using rainwater for all his water needs the past two decades. Mr Murli built himself a house in Hyderabad in 1995, and modelled to harvest rain water. Instead of an open courtyard, he built a tank below the house. The roof gives nearly 1.25 lakh litres rain water every year with the average rainfall. The house is designed in such a way that the rain water from the roof comes down by a PVC pipe and it passes through a filter and goes into a big underground tank, which has a capacity to hold over one lakh litre of water. Mr Murli and his family use the same water for drinking, cooking, their daily use and even maintain a small kitchen garden out front. He conducts workshops on a regular basis and is changing the landscape of his neighbourhood, where people are actively taking up his idea.
Outcome	Mr Murli and his family use the same water for drinking, cooking, their daily use and even maintain a small kitchen garden out front. He conducts workshops on a regular basis and is changing the landscape of his neighbourhood, where people are actively taking up his idea. Source : https://yourstory.com/2017/04/murli-sharma
Photographs -yes	

N56	**Telangana**
Title/ Name of work undertaken	Root Zone Watering by SWAR (System of Water for Agriculture Rejuvenation) at Hyderabad in Telangana
Location	Hyderabad
Organisation/NGO/Persons responsible to undertake the work	Centre for Environment Concerns
Description	The intervention was carried out by the Hyderabad-based Centre for Environment Concerns (CEC). The intervention discovered a unique irrigation technology called System of Water for Agriculture Rejuvenation (SWAR). The innovative SWAR system attained a global recognitions and awards. SWAR shifts irrigation from surface to measure moisture at plant root zone. Soil moisture content in the root-zone is an important variable in modelling hydrological and biophysical processes and agricultural applications and SWAR works on these parameters. The root zone also serves as an ecosystem to foster soil micro-organisms besides rationing plant water requirements. The system involves storing of water in overhead tanks and sending it through a small diameter pipe to a customised locally-made clay pot that is buried near the root area. The clay pot contains micro-tubes that transmit water through a sand pouch, to prevent the roots from invading the pipes and the pot. The slow oozing of water provides moisture for a prolonged period, the level of which is calculated based on soil type, plant species and its age. SWAR uses a very less amount of water and there is zero wastage of water.
Outcome	The innovation has been highly recognised by the Andhra Pradesh government. The government has placed orders for implementation of the system in an extent of 400 acres in Anantapur, Kurnool and Chittoor. The system is suitable for the massive tree plantation programme. In 2015, this technique was also used to grow vegetables and flowers. This helped show immediate results in terms of both soil and plant health and farmers' incomes. In vegetables and fruits, where close planting is done, it was discovered that one eighth of the water suffices, compared to drip irrigation. It was due to these promising early results that SWAR received the Global Champion Innovation Prize for Water and Forestry at the 2015 Paris International Agricultural Show. SWAR, desires to bring more low rainfall areas under irrigation. Source: https://www.cechyd.org/
Photographs	Available

N57	**Uttarakhand**
Title/ Name of work undertaken	Revival of stream-Chal Khal method
Location	Ufrenkhal village, Pauri district
Organisation/NGO/Persons responsible to undertake the work	Mr Sacchidanand Bharti
Description	In Ufrenkhal village, Mr Sacchidanand Bharti has created a lush, green mountain covered with deodar, banj and utees trees over few decades. The forest has replaced a formerly barren land. The man along with villagers has also revived a local stream with the help of the Chal-Khal method. Under this system small percolation pits on every bit of available land on the slopes of stream were dug by villages. Grass and trees were planted around and in the pits to secure the edge and prevent the soil from being washed away. Once grown, they helped in retaining soil and water.
Outcome	The pits and the trees developed a mutually beneficial relationship, which rejuvenated an entire system. Today, more than 40 villages have adopted chal-khal system. Earlier, this work was carried out by the villagers through shramadaan drives. Today, it is done in the monsoons, for wages of Rs. 50/- per pit. This is an on-going process, having continued for over 30 years now. Source: http://www.indiawaterportal.org/articles/village-creates-magicand-river
Photographs	Available



N58	**Uttar Pradesh**
Title/ Name of work undertaken	Water Management through Farm Pond (*Khet Talab*).
Location	Mainly implemented across Mahoba District
Organisation/NGO/Persons responsible to undertake the work	Apna Talab Abhiyan Samiti; Coordinator: Mr Pushpendra Singh
Description	• Apna Talab Abhiyan was started during Drought Year 2013 from district Mahoba. Farmers constructed around 600 farm ponds. • During 2008 and 2013 large gatherings and meetings were arranged across Bundelkhand, UP including Mahoba district to sensitize and encourage around 50000 farmers to take up Rain Water Conservation, Pond Construction and Community Pond Conservation. • Farmers in Mahoba district took up construction of farm ponds in their fields. • A 9m deep pond was created by digging of 1 ha land to supply soil for construction of Arjun Sagar Canal Project. • In order to instill sense of pride and to encourage others to take up such initiatives, practice of '*Kisan Jaladhikari Samman*' by district administration started to honour farmers who made exceptional efforts in this direction.
Outcome	• Dried up dug wells in the field of many farmers in Mahoba and Banda districts were revived by adopting Apna Talab. • Apna Talabs have proved to be able to sustain crops during drought years. • The pond created by supplying soil for Arjun Sagar Canal Project sustained water for 25 Acre land and cattle during 3 consecutive drought years.
Photographs	

Photographs – Apna Talab Abhiyan, Bundelkhand, UP

Crops grown in 30 Acre in Banda through Apna Talab

5 decade old dried up well revived in Barbai, Mahoba

9m deep pond created in 1 ha by digging up sand for supply for Arjun Sagar Canal Project - sustained water for 25 Acre land and cattle for 3 consecutive drought years

9m deep pond created in 1 ha by digging up sand for supply for Arjun Sagar Canal Project - sustained water for 25 Acre land and cattle for 3 consecutive drought years

N59	**Uttar Pradesh**
Title/ Name of work undertaken	Sarvodaya Aadarsh Jal Gram Swaraj Abhiyan in Jal Gram, Jakhni
Location	Village Jakhni, Block Mahua, Tehsil Atarra, District Banda, Bundelkhand, Uttar Pradesh
Organisation/NGO/Persons responsible to undertake the work	Sarvoday Aadarsh Jal Gram Swarajya Samiti, Jakhni; Coordinator: Dr Uma Shankar Pandey
Description	• Water conservation in thousands of *Bigha* land through *Med-bandi* – large and high (1m) *medh* raised by farmers around the fields with their own resources. • Growing fruit-trees on *medh*. • Growing vegetables from irrigation through waste water coming out from households. Surplus is channelized through drains. • Diverting surplus water in fields after irrigation to ponds. • Diverting used water from hand pumps to ponds/ pits.
Outcome	• Ensuring the objective of '*gaon ka paani gaon mein*' and '*khet ka paani khet mein*' through all-round public participation with overall aim to improve and maintain water levels. • Presently, even during this summer, ponds still have water. • Water levels are stable at around 3-4m in comparison to last year's 5-6m and 6-7m year before. • There are around 40 dug wells, 10 ponds and 2 large drains (Nalas) in Jal Gram – Jakhni. Water conservation in and around this village is solely through participation of farmers and villagers using traditional methods and their own resources without any Government aid.
Photographs	

	
Drain water used for Irrigation purpose	**A water filled Pond in Jhakhni village**
	
Drain water used for Irrigation purpose	**Local people measuring water level of Dug well**

N60	**Uttar Pradesh**
Title/ Name of work undertaken	Project Bhujal(Watershed rejuvenation) at Jhansi in Uttar Pradesh
Location	District- Jhansi
Organisation/NGO/Persons responsible to undertake the work	Anandana
Description	The Bundelkhand region of central India is the hotspot of water scarcity. Degraded lands, poverty stricken area along with inefficient institutional structures for health and education have just worsen the situation. This has led to a poor socio economic condition of the whole region. The region of intervention, Parasai-Sindh watershed of Jhansi district, comprises of three villages and covers nearly 1,250ha land. From 2012, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) along with local community has successfully implemented watershed interventions in this area. The steps taken up were the construction of 6 check dams and 15 farm ponds, renovation of 60 existing structures, recharging of 100 wells along with contouring in 8 locations.
Outcome	Project Bhujal along with project Jalnidhi and project Unnati has created a remarkable impact in areas of Bundelkhand. Project Bhujal specifically aimed in rejuvenating the watershed and it created a storage capacity of 100 million liters of water. After this intervention the cropping intensity increased up to 30% and there was a significant increase the ground water recorded up to 2 to 5 meters. Around 100 acres of land was made cultivable resulting in extra source of income up to Rs.20,000 per acre for the farmers of the area. The framework included development of essential infrastructure, the labor was mostly generated from within the community thus gave a huge scope of employment. The community was also encouraged for effective utilization of resources. Regular public interaction platform was developed in which there was equal representation of women, men and all the stakeholder groups which provided a platform for discussion and suggestions and gave a fare and transparent evaluation of the intervention. Source : http://www.anandana.org/Project-bhujal.html
Photographs-yes	

N61	**Karnataka**
Title/ Name of work undertaken	Bore Well Recharging
Location	Karnataka
Organisation/NGO/Persons responsible to undertake the work	Sankalpa Rural Development Society
Description	The Process Single Ring Method: A 10×10 feet percolation pit is dug around the bore well – and an adjoining catchment area (pond) is excavated (this pond does not need to take up a large area) Stone pitching is done around the walls of the percolation pit. A 3-inch layer of sand is made at the bottom of the pit. Holes or slits are made in the bore well casing pipe and we then cover it with mesh – to ensure nothing but water goes into the bore well. Cement rings are placed around the bore well pipe and that area is left open. The cement rings are concreted together. The remaining area of the pit outside the cement rings is filled with sand, stone and gravel. Rain water from the catchment area (pond) gets transferred to the percolation pit. This then seeps in through the sand and gravel outside of the Cement rings. This water filters up through the sand in the base of the cement rings and fills the area around the pipe casing. And then enters into the bore well through the protective mesh and the holes thereby recharging the underlying aquifer with clean, filtered rainwater. Twin Ring Method (see diagram above): The method is simple, works well and is cost effective. In brief the process is as follows: 1. A pond – approx 20 feet x 15 feet and 8 feet deep – is constructed nearby the borewell site – in a position to gather the run off water from the monsoonal rains. 2. A pit is dug around the actual borewell casing – 6 feet x 4 feet size and 8 feet deep. This work is done with JCB. 3. The bottom of this pit is lined with filtration material to a depth of 2 feet – layers of 40 mm stones, 20 mm and 6 mm size. 4. Next slits are cut into the borewell casing using a cutting machine, and the casing is then wrapped with nylon mesh so solids cannot enter the casing pipe. 5. At this stage, 6 x 3 foot diameter cement rings are placed around the borewell casing and the spaces between them are filled with cement to seal them. This 'false well' is then filled with 20mm stones. 6. A second 'false well' constructed of 6 x 3 foot diameter cement rings are placed next to the first 'false well' and the gaps between are filled with cement. This well is left empty. And a cement cover is placed on it to stop rubbish falling in. 7. A 3 inch feeder pipe is fitted coming from the pond to a hole in the first cement ring of this empty well. This brings the water from the pond. 8. During rainy season the water flows from the pond into the first empty well where it percolates down through the filtration material and subsequently up into the second well around the borewell casing. It then enters through the slits and filters down into the underlying aquifer where it is stored for the following dry season.
Outcome	Bore-wells are recharged using our technique have resulted into increased water-level in the bore wells. Even completely dried bore-wells can also be revived by proper management and

	utilization of rain water. Reserving of naturally filtered rainwater into the groundwater tables results in a decrease in the proportion of impurities in the water. The bore-well's water thus loses its hardness with time and toxic minerals such as fluoride are diminished.
Photographs