

GLOSSARY OF TERMS USED

SR	Social Regulation
NRM	Natural Resource Management
PRI	Panchayat Raj Institutions
CWS	Centre for World Solidarity
CBO	Community Based Organisation
PRA	Participatory Rural Appraisal
NPM	Non-Pesticidal Management
NGO	Non-governmental organisation
SHG	Self-Help Group
CPR	Common Property Resources
VO	Village Organisation
MMS	Mandala Mahila Samakhya
MPP	Mandal Parishad President
MPDO	Mandal Parishad Development Officer
SC	Scheduled Caste
BC	Backward Caste
OC	Other Caste
PD	Project Director
APMIP	Andhra Pradesh Micro Irrigation Project
DWMA	District Water Management Agency
MLA	Member of Legislative Assembly
NREGS	National Rural Employment Guarantee Scheme
DRDA	District Rural Development Agency
IKP	Indira Kranthi Patham

FOREWORD



Balaram P. Our entire ecology - mankind, flora and fauna is dependent on water for its survival. Availability of and access to water is largely influenced by social, economic, cultural and political conditions. Changes in our physical environment and vested interests have raised concerns of inequity in access to water. The concept of privatisation of water has gained prominence in recent times. Poor farmers and backward sections of society are being denied access to safe drinking water and irrigation water. Livelihoods are being threatened. Efficient management of water resources has, therefore, gained prominence these days.

The intervention in Chinnaramannagaripalli is a small attempt to address this issue. Though its scope is limited to just one Panchayat, radical changes have come about in water use patterns. The outcome of the efforts made by the organisation has been quite significant but this is not enough. This exercise must be replicated in more villages. The governments must also join hands and set aside resources to facilitate this process. Support must be roped in from likeminded donors at the national and international levels. Communities must also make all possible efforts to conserve water. Agriculture can become profitable and the farmer will lead a contented life if this can be done.

We hope every community that is facing shortage of water will adopt similar measures. We dedicate this effort to the many farmers, communities and leaders that have spent their time and energies in improving the lot of their fellow beings.

In solidarity



Srinivasulu Reddy S.

ACKNOWLEDGEMENTS

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We would also like to put on record the ongoing support that we received from government quarters during the course of the project. Special thanks are due to Hon. District Collector Mr. Durga Das I.A.S., former District Collector Mr. Janardhan Reddy I.A.S., Asst. Director – Horticulture Mr. Haranath Reddy, PD – APMIP (Anantapur District) Mr. Neelakanta Reddy, PD – DRDA (Anantapur District) Mr. Rangaiah, PD – DWMA (Anantapur District) Mr. Murali, PO – NREGS (Anantapur District) Ms. Manjula, Tehsildar of Tanakallu Mr. G. Keshava Naidu, MPDO of Tanakallu Ms. S. Nirmala Devi, and Asst. Engineer – Electricity (Tanakallu) Mr. Srinivasulu, Member of Legislative Assembly Mr. Kandhikunta Venkata Prasad, Mandal Parishad President Ms. Nagalakshamma, Sarpanch of Chinnaramannagaripalli Mr. Ananda Reddy, Mr. Y. Uttam Reddy and other village elders have invested their valuable time and efforts to strengthen the intervention. Last but not the least, we are appreciative of the cooperation extended to us by the farmers, SHG members and other villagers of Chinnaramannagaripalli Panchayat, without whose backing we would not have been able to surmount the numerous obstacles to project implementation.

Jana Jaagriti team

AFTERWORD

India is a vast country with wide variations in occurrence and availability of water for wellbeing and agriculture of its population. Agriculture is the main stay for livelihood for the majority of people and livelihoods of many more indirectly depend on agriculture. Monsoon rains are the single most influential factor that has a bearing on agricultural production, rural livelihoods and hence thriving of urban industry and markets.



Rama Mohan RV

The hydrological cycle ensures circulation and distribution of finite freshwater resources both temporally and spatially. The amount of fresh water available for drinking and purposes of irrigation in any given area has a correlation with the immediately preceding monsoons. Failure of monsoons and droughts show their immediate impact in the form of dried up surface tanks, ponds and reduced inflows to reservoirs. Failure of monsoons also affects availability and yield of groundwater, though the aquifers are known to accumulate water for several years. Andhra Pradesh is one of the States in India wherein almost 50% of total land is irrigated by groundwater.

Depletion of shallow groundwater in weathered zones coupled with recurring drought conditions in Andhra Pradesh has long forced farmers to drill more and more agricultural bore wells to tap fractured zones of the aquifers. Unscientific drilling of bore wells at closer spacing is leading to failure of wells and huge financial losses to farmers. Jana Jaagriti has helped farmers understand the groundwater science and has facilitated collective approaches to evolving a set of local norms/regulations to manage this precious resource in CR Pally village of Tanakallu mandal. As a result, farmers have started sharing groundwater from existing wells and have stopped drilling new wells. They have adopted crop diversification and water-saving technologies like drippers and sprinklers. The project intervention over the last 8 years (2004-2012) has near completely changed the life and livelihoods of farmers in this village.

The project has not only expanded access to groundwater and has enhanced the incomes of farmers but has also reduced overuse of groundwater. This booklet, which documents such rich experience from a small village, provides valuable insights into the nuanced approach adopted by Jana Jaagriti and the various processes involved in empowering communities on groundwater management. I congratulate Jana Jaagriti for this big and rare achievement. I sincerely feel that every professional, staff working in NGOs and officials of line departments must read this booklet and adopt those elements that are relevant to their situation and interventions. I hope they keep up the good work and expand the scope of their activity to more villages over time.

TABLE 4 DETAILS OF WATER SHARING

Year	Bore wells under sharing	Farmers in sharing group	Acreage of crop under sharing	
			Kharif	Rabi
2003-04	-	-	-	-
2004-05	11	22	136	115
2005-06	17	36	212	176
2006-07	34	50	221	207
2007-08	34	56	305	260
2008-09	34	60	365	317
2009-10	34	60	369	171.50
2010-11	36	103	296	160
2011-12	36	128	334	184

TABLE 5 DETAILS OF LIVESTOCK

Year	Cows	Buffaloes	Goats	Sheep	Oxen	Total
2004-05	142	30	210	3010	105	3497
2005-06	138	32	180	3010	112	3472
2006-07	135	25	142	3079	100	3481
2007-08	142	27	153	3351	117	3790
2008-09	151	28	160	3981	120	4440
2009-10	201	32	225	4010	140	4608
2010-11	208	36	245	4275	152	4916
2011-12	215	36	260	4350	160	5021

CONTENTS

- Summary
- The Context
- Groundwork
- Institution Building
- Monitoring Water Usage
- Water for All
- Focus on Livestock Integration
- Networking
- Visitors
- Impact Analysis
- In Their Words
- Glossary of Terms Used

TABLES

- Table One Departmental Linkages
- Table Two Details of Visitors
- Table Three Changes in the Situation at the Ground Level
- Table Four Details of Water Sharing
- Table Five Details of Livestock

SUMMARY

More than 60% of our population is directly dependent on agriculture for its sustenance. Water is the backbone of the agricultural economy. Rural development is directly related to control over water resources. Access to water is, therefore, the key to sustainable rural livelihoods. It has been observed empirically that the economic status of farmers owning water resources is better than that of those lacking control over such resources. Our rural scenario is marked by inequitable access to water resources, which has resulted in unequal development.

The implications of unequal access to water in areas facing scarcity of water are wider. Efficient management of water resources is vital in such areas. Numerous attempts have been made in the recent past to address concerns of equity alongside focusing on groundwater management. Jana Jaagriti, in collaboration with CWS, launched one such community based intervention during 2004 under the banner of Social Regulations in Groundwater Management in Chinnaramannagaripalli (CR Palli) Panchayat of Tanakallu, one of Anantapur district's driest mandals.

The groundwater situation in the Panchayat at the time of the launch of the intervention was highly discouraging. Water was available at depths of more than 400 feet and rainfall levels were very low. At the same time, awareness on groundwater management was poor among farmers and they had drilled bore wells indiscriminately, which had compounded the problem. Tens of farmers had subsequently incurred huge debts on agriculture and had migrated in quest of livelihood opportunities.

Soon as it had launched the intervention, the organisation undertook a participatory exercise to map availability and usage of water resources in the Panchayat. The outcomes were shared with the farmers and they were oriented on various aspects of groundwater management, NRM and cropping patterns. An electrical motor was also provided in the Panchayat as an entry point activity.

The next stage in the intervention involved forming Village Development Committees and federating them at the Panchayat level. The members were given regular inputs on issues such as groundwater management, Water Budgeting, Crop Planning and monitoring water in bore wells and groundwater levels. Brainstorming sessions were also held to evolve a set of Social Regulation norms to guide the usage of scarce water resources.

I have benefited in more ways than one. My annual investment in agriculture has gone up to Rs. 40,000 - 50,000 but my income has correspondingly increased to Rs. 2 lakhs - 5 lakhs depending on the market rate. Earlier, I had to be physically present near the bore well and had to manage the water supply personally. This was a time intensive process and I used to spend 6-7 hours a day in the field. However, I now need to come to the fields once only in half an hour. I am also proud to state that I have been able to get my children enrolled in a residential school in Madanapalli

Sarpanch Ananda Reddy aged 47 years

+91-944 085 7178

FAMILY UNITES THROUGH WATER SHARING

R. Narayana Reddy and R. Siddharama Reddy, two brothers from Gopireddipalli had quit cultivating the 30 acres of land that they owned between them after they had a dispute over the ownership rights. They had left the land fallow for a long period of 7 years.



The situation changed with the launch of the intervention. Both the brothers were invited to a series of meetings that Jana Jaagriti had organised to promote the concept of water sharing. Narayana Reddy's son Srinath Reddy, who had been recruited as volunteer under the project, motivated them to resume cultivating the land. He spoke to them time and again and they finally agreed upon a basis for sharing the land and the trees.

However, they did not speak to each other. A sprinkler set was given to them in 2005 subject to the condition that they would share it between themselves. They agreed to do so and relations between them have improved since then.

I have invested Rs. 4 lakhs in 8 acres of land this year and have got an income of Rs. 6.5 lakhs from my papaya and banana plantations. I have reinvested a considerable part of my earnings in agriculture. I bought Drips at a cost of Rs. 44,000 and paid Rs. 2.5 lakhs for a second-hand tractor. I also fitted a capacitor to my electrical motor, after which I have had no fluctuations in power supply. I have constructed a house in addition at an expense of nearly Rs. 3 lakhs. I have been utilising all possible opportunities to advocate water sharing among my fellow villagers and I am happy that most of them subscribe to my way of thinking as well.

Sridhar Reddy CR Palli aged 42 years

+91-990 888 4710

IMPROVED QUALITY OF LIFE THROUGH WATER SHARING

I and my brother own 15 acres of land. We used to initially grow groundnut, red gram and horse gram in 12 acres of land. We used to cultivate paddy, tomato and brinjal in the remaining 3 acres under bore well. Our investment was quite low at Rs. 2,000-3,000 per acre but our income was also limited to Rs. 30,000 - 40,000 per acre a year. It was around the Kharif season in 2005 that I received a sprinkler set from Jana Jaagriti. I was asked to share it with the owner of a neighbouring farm Gangi Reddy, who had no sources of water.

The both of us were trained in the use of the set. I was initially not confident about the benefits of the sprinkler but was happy to note later that the water required for one acre of land earlier was now sufficient to irrigate 2 acres of land that I owned in addition to the one acre being cultivated by Gangi Reddy. I later attended a demo on the use of Drips that the PD APMIP had arranged in Cheekatimanipalli. I liked the concept a lot and promptly decided to go for the Drips. I spent Rs. 22,000 on two units. I now cultivate 6 acres of land during the monsoon and 3 acres during the remaining part of the year. I have quit growing paddy and am using the water to



cultivate groundnut, brinjal, tomato, onion, cucumber and water melon instead. I am using the Drips to water the vegetables and the sprinklers to water the groundnut and onion. At present, I am focusing on short-term crops. I am, however, planning to go for horticulture in a year or two.

Special emphasis was laid on promoting the concept of water sharing. Bore well owners were motivated to share water with neighbouring farmers that had no resources of their own. Most bore well owners were initially reluctant to part with the water but consented after being promised Sprinklers, Drips and other benefits through government schemes if they were willing to share water. Water User Groups were formed with the owners and the receivers and formal agreements signed by both groups to the effect that the receivers would share the costs of maintaining motors and other physical equipment. The idea of water sharing was also reinforced through regular meetings at different levels.

The functionaries of the organisation also regularly interacted with government departments such as APMIP, the SC Corporation, the Horticulture Department, the NREGA, the Agriculture Department, etc. and linked farmers to them for benefits under their schemes. Convergence meetings were used as a platform to share the progress of the intervention with government officials and to seek their involvement in the project.

The impact of the intervention has been largely positive and there have been significant changes at the ground level. Farmers have realised the ill effects of over-drilling bore wells and have not drilled even one bore well in the last 8 years. They have begun to appreciate the need to share water and have been religiously adhering to the Social Regulation norms that they have agreed upon. They have also been conserving water by growing irrigated dry crops in place of water intensive crops and by using Sprinklers and Drips. The acreage of land under cultivation has consequentially gone up by 81%.

Government officials have extended unstinted support to the intervention and farmers have benefited from government schemes of different departments to the tune of lakhs of rupees. The quality of life of most farmers, especially landless farmers and those from underprivileged sections of society, has improved significantly and they have a sense of self-esteem as evidenced by their testimonies. Last but not the least, there has been growing demand from both the community and the government for replicating the intervention in other Panchayats of the mandal. It is envisaged that this measure would help mitigate the effects of droughts in future.

1. THE CONTEXT

One of the most drought prone districts of Andhra Pradesh, Anantapur receives very scanty rainfall with a mean of 568.5 mm that is way below the average for the State. One of the driest mandals in the district, Tanakallu has a mean rainfall of 540 mm but receives only 300 mm a year on an average, as the mean level is recorded only once in 5 years. Agriculture is primarily rain fed but fluctuating monsoon and near-perennial drought had forced the villagers to rely on groundwater for their agricultural and personal needs. Bore wells had been drilled in large numbers to extract groundwater, as a result of which the water table had gone down to below 400 feet. This in turn had led to drying up of bore wells, open wells and other sources of water.

The situation in CR Palli Panchayat of the mandal was particularly severe in 2003. The Panchayat had been facing acute shortage of water and hardly 60% of the domestic and irrigation needs of the Panchayat were being met locally. Practically no water was available for livestock. The Panchayat had just one tank and 2 mini-tanks, all of which had breached. The villagers had to walk 2 kilometres to fetch water from a tank that had been constructed under the Satya Sai Drinking Water Project. Nearly 40 bore wells that had been drilled for agricultural use had failed in addition to 25 that had been drilled for drinking water. One Venga Reddy from Thotlivaripalli had drilled 5 bore wells at a cost of more than Rs. 2.5 lakhs but each one of them had failed.

Though they were aware of the gravity of the situation, farmers continued to drill bore wells in the absence of alternatives, aggravating the state of affairs. Water management was virtually unknown to them. They had been using scarce water resources injudiciously, aggravating the state of affairs. Water management was virtually unknown to them. They had been using water resources injudiciously and had been leaving water taps open for hours together, which had resulted in undue wastage of water. Defunct water harvesting structures were not being repaired in time. No platforms were available at bore wells and other public sources of drinking water. Water was literally unavailable for livestock.

The farmers also never saw water sharing and economy as a priority issue. Social exclusion was at a high and the Dalit community had no role in the collective decision making process. Their needs were also being neglected. The cistern in Thotlivaripalli Harijanwada that had been damaged had not been repaired though the issue had been represented repeatedly. Most of

I began sharing water with Venkata Narayana and Venkata Ramana, who cultivate $\frac{3}{4}$ and $\frac{1}{2}$ acres of land respectively. The both of them belong to higher castes. There had been longstanding disputes between my parents and the parents of Venkataram, another member of our community from our village. His parents had burnt down a cottage owned by my parents. He was in a very bad situation that year, as he had no source of water.

He approached me, requesting me to bail him out. I did not think twice and agreed to help him, as he had never created any sort of trouble for me. He had a bumper crop and has been ever grateful to me for my assistance. I am happy that I could save a farmer from distress.

Some landlords from the village had thought that I would sell off my land after all that I had undergone but I overcame my problems through my willpower. I repaid all my debts within two seasons. I am contesting for the post of Sarpanch during the next local body elections.

Lakshmi pathi SC farmer from CR Palli Dalitawada aged 36 +91-949 232 4739

LEADING BY EXAMPLE

I and my 3 brothers own 35 acres of land, 16 of which are jointly managed by me and my younger brother Giridhar Reddy. 4 acres of these are cultivated under bore well. We used to grow paddy, groundnut, bajra, maize and tomato in this land until 7 years ago. The remaining part of our land was rain fed. We had an investment of Rs. 10000 - 15000 but our income was also limited to Rs. 1,00,000 - 1,50,000 p.a. from the entire land.



I was made President of the Bhageeratha Neeti Yajamanya Committee and was invited to attend a series of meetings in this capacity. I was promised sprinklers if I agreed to share my water resources with other farmers. I hesitated initially but later saw wisdom in the argument that the extra water in the bore well would remain idle if I did not share it and accordingly agreed to the proposal. I am presently sharing the water with Kamamma, who cultivates 2 acres, and with Suresh and Narasimha Reddy, both of who cultivate half an acre each. Kamamma pays me some money for repairs and maintenance but I do not take anything from the others, as they assist me in the farms in times of need.



We were disappointed and all but decided to quit when luck favoured us and we heaved a sigh of relief. The organisation also supported us with an electrical motor and three pipes. We were later given 70-80 mango saplings per acre. They have grown well and stand 3-4 feet tall now. We dig trenches uphill from 7 a.m. 1 p.m. and water the saplings after that. We get paid only Rs. 100 a day now as against Rs. 150 in Bangalore but we are happier, as we are nearer home and have people to care for us.

TRULY EMPOWERED

I own 4.5 acres of land, 2 of which are cultivated under bore well. The monsoon had failed us for long, following which I decided to quit agriculture and migrated to work in the civil construction sector in around 2001. I had to put in a lot of physical labour and it took its toll on my health. I decided once and for all that I would return home and practice agriculture come what may. I subsequently began growing paddy in the land under the bore well and groundnut in the remaining 2.5 acres. I did not have enough capital with me and I invested heavily, borrowing more than Rs. 50000 to drill a bore well.



I also had to spend a lot of money on repairs, as power supply was highly erratic. I fitted a capacitor to the motor and the problem was resolved. I sustained losses for three consecutive years, contracting debts of Rs. 80,000 in the process. However, I could not do much. Even though the returns were satisfactory later on, I was forced to set aside a considerable proportion of my income as interest

The entry of Jana Jaagriti in 2004 marked a turning point in my life. There was better rainfall that year. The organisation constructed some Water Harvesting Structures and oriented us on the urgency of conserving water. We were advised not to dig new bore wells. The organisational staff motivated me and told me that there was no use in storing water in my bore well, as it would benefit none. In addition, the water level in my own bore well would go down if my neighbours dug bore wells. I was given a sprinkler set in 2005 subject to the condition that I would share the use of the equipment and my water with other farmers.

I replaced paddy with groundnut and sunflower in one acre each that year upon a suggestion by the Jana Jaagriti staff. I could save nearly 50% of water in this manner.

Lacking access to major sources of irrigation water or alternative employment, farmers invested heavily in agriculture, borrowing large amounts of money. One Pedda Venkata Rama Reddy of Turkavandlapalli had been forced to sell off 10 acres of land in a phased manner after having sustained losses in agriculture. Once the owner of 20 acres of land, Saddala Narayana Reddy is today in no position to even feed his family. More than one half of families from the Panchayat had been forced to regularly migrate in search of work, mostly to Bangalore.

It is against this backdrop that Jana Jaagriti launched an intervention entitled Drought Management Preparedness through SR of Water Management at Community Level by NRM Committee of PRI in the Panchayat with the below objectives:

Equip community towards better management skills by developing required regulations to utilise water by prioritising need-based activities in terms of access, equity and rights.

Develop capacities of people in understanding the dynamics and behaviour of different natural resources with special emphasis on utilization of water towards better management practices.

Strengthen local institutions and CBOs as a process of change agents in initiating the process of negotiations with appropriate linkages for promoting regulatory mechanisms to ensure basic minimum water for every household.

Crystallise the process towards effective management of water resources with a panoramic view of resource status for its wider replication and policy level changes

2. GROUNDWORK

2.1 Selection of Implementation Site

The organisational functionaries undertook preliminary visits to four villages of the mandal, namely CR Palli, Malreddi Palli, Bonthala Palli and Cheekatimani Palli as a first step in the intervention. They interacted with farmers and the Panchayat members on the water situation there. They finally shortlisted CR Palli Panchayat for the launch of the intervention, as it met all necessary preconditions for the project, namely:

The village would have been facing acute shortage of water
 The village would have a mixed social composition
 Marginal farmers would account for a majority of the population

2.2 Staff Recruitment and Orientation

Subsequent to the finalisation of the project site, the functionaries selected one Project Coordinator and Field Volunteer each to implement the project. Members of agricultural families with clear understanding of ground level issues and prior exposure of working with CBOs were chosen for these positions. The Project Director, the project staff, 3 volunteers and 10 farmers were taken on a project level exposure visit to Pani Panchayat in Ahmednagar district and Hevre Bazaar in Pune district of Maharashtra during February 2005. They interacted with the Gram Panchayat members and NGO functionaries on the water management interventions that they had been implementing there.

The Project Director, the Project Coordinator and the Field Volunteer attended a centralised training session organised by CWS in Hyderabad in April 2005 on the below issues:

- ⇒ Principles of groundwater management
- ⇒ Monitoring availability of water in bore wells
- ⇒ Measuring rainfall levels
- ⇒ Formation and strengthening of CBOs
- ⇒ NRM
- ⇒ PRA

2.3 Baseline Survey

After their return from the training session, the staff members undertook a three-day PRA exercise to gather the below data:

- ⇒ Demographic profile
- ⇒ Availability of land
- ⇒ Water sources
- ⇒ Crops grown
- ⇒ Agricultural loans
- ⇒ Availability of livestock
- ⇒ Water utilisation patterns
- ⇒ Trends in water levels

TABLE 3 Changes in the situation at the ground level

Parameter	Situation in 2004	Situation in 2012	Changes
Land under cultivation	136 acres of Kharif 115 acres of Rabi	296 acres of Kharif 160 acres of Rabi	Increase of more than 81% of land under cultivation
No. of bore wells	36 – 11 of them were being shared	36 – all of them have been brought under sharing	No new bore well has been drilled in the village due to the SR norm
Failure of bore wells	40 bore wells had failed	No new bore well has been drilled due to SR	Water in existing bore wells is being shared
SR	Injudicious use of water and over drilling of bore wells	Water is being shared by owners and non-owners alike due to the SR Norm	Water is being shared Semi-arid and dry crops are being grown in place of paddy and water intensive crops Irrigation is being done through drips and sprinklers rather than through flood irrigation mode
Recharge Structures	3 breached tanks 10 bore wells dried up	All 3 tanks repaired 10 bore wells recharged MPTs constructed 1 check dam repaired MPT and PT dug Trenches dug	Increased availability of water for irrigation and drinking purposes Increase in acreage of land under irrigation
Cropping Pattern	Preference to paddy, maize and vegetables	Preference to ID crops such as banana, papaya, vegetables	Better returns Optimal use of water
Water Use Pattern	No micro-irrigation was being practiced	404 acres have been brought under micro irrigation	Economical use of water Higher yield and profit margins

10. IN THEIR WORDS

A NEW RAY OF HOPE

Water scarcity was a key issue of concern in our village. 18 families from the Madiga sub-caste of the SC community that owned 8 acres of land were badly affected. We used to grow horse gram and groundnut but the yield was very poor and we used to get a maximum of 2-3 bags per acre. We used to supplement our wages with unskilled labour. Paucity of livelihood opportunities forced us to seek employment in Bangalore for 2-3 years, where we worked for 4-5 months a year at a daily wage of Rs. 150.



This continued until Jana Jaagriti made its presence in our Panchayat. They motivated us to stay behind in the village, promising to provide financial assistance to us. We agreed to this and they linked us to the NREGS for contours and trenches. A bore well was also dug at a cost of Rs. 60,000. Digging the bore well was not an easy task and no water was struck until a depth of 500 feet.

According to Ms. S. Nirmala Devi MPDO of Tanakallu mandal, "The water level in the whole of the mandal is very low but conditions in CR Palli are very different due to the initiatives of Jana Jaagriti. The functionaries have successfully promoted the concept of groundwater management. Very importantly, water levels are not going down in CR Palli. In stark contrast, the situation in neighbouring Eethodu is so bad that the villagers have to fetch water from outside. More people must be trained on Water Budgeting and the deleterious effects of digging new bore wells must be



highlighted. I hope this effort is extended to more villages. I am willing to extend all possible support from my side".

CWS Programme Officer Dr. P. Laxminarayana opines: Communities have strongly come forward to support the agenda of Water for All. They have realised the seriousness of the issue. They have also internalised the Social Regulations that they have put in place. The government had recently offered to dig bore wells in the Panchayat but they vehemently opposed this idea and made it clear to the officials that more bore wells only meant greater shortage of water.

The efforts made by CWS over the last 8 years have enabled in building their capacities to sustain the intervention in the long run. The local administration has acknowledged the efficacy of the programme and has been trying to replicate the same at the policy level. The mandal officials organise convergence meetings in the Panchayat every year. Mass media have played an instrumental role in publicising the successes achieved. The Minister has also been encouraging farmers from the district to visit the village. All this has been possible due to the dedication of the staff members, especially Mr. Balaram and Srinivasulu Reddy, who have put their heart and soul to improve the lot of the farmers.



The greatest change has come about possibly in terms of social equity. Discrimination on grounds of caste has been done away with. Collective action and decision making by community have enabled 30 poorest of the poor families to gain access to water and live dignified lives on par with their fellow villagers. They have also become ambassadors of the programme and are spreading the message of water conservation far and wide.

A team of 6 staff members from Jana Jaagriti including the Project Director participated in this effort. A public meeting was convened in CR Palli on the first day to introduce the agenda to community and to apprise them of the survey methodology. The staff members and 30-35 villagers took part in a Transect Walk on the second day to identify water sources and other landmarks. A Resource Map was drawn on the third day, at the end of which a Grama Sabha was held to share the outcomes of the exercise.



A number of people initially felt that the government had commissioned the survey and expected some kind of benefit from it. Some well to do villagers concealed information relating to bore wells and livestock and also denied owning houses. The investigators doubted that they were lying and cross checked the data with the village elders and their neighbours during Grama Sabhas. They told the villagers that the aim of the survey was to identify problems being faced in the village and solve them. They added that there was no point in withholding information, as they would stand to lose at the end. The Sarpanch and the village elders also counseled them in this regard, after which they came out with the information. A few villagers, especially those having no bore wells of their own, were skeptical about the benefits of the project and refused to share any details but later cooperated after being assured that they would have access to livelihoods through the intervention.

2.5 Cultural Campaign

An intensive cultural campaign was launched to reach out to community on the issues of groundwater management, integrating livestock with agriculture, NRM, NPM and the benefits of semi-arid crops. The cultural team went around the villages an hour before the conduct of the event and invited all villagers to witness the performances, which would be held from 8-11 p.m. The team members and the agenda were introduced to the participants at the commencement of the programme. The skits were interspersed with message-oriented songs. The concept of mutual cooperation was highlighted through these activities.

The organisational functionaries addressed the members on the aims and objectives of the intervention at the end of the performances and also told them what was expected of them. Feedback was also gathered from them at the end of the event.

They opined that they had realised the importance of groundwater management and that they had understood the losses associated with burning of forests. They also promised to extend a helping hand to the organisation and to replace inorganic pesticide with NPM techniques.

2.6 Entry Point Activity

A Panchayat level meeting was held under the jurisdiction of the Sarpanch with the participation of women, village elders, ward members and the Panchayat Secretary to identify problem issues and seek solutions to them.

At the end of the meeting, the Sarpanch passed a resolution requesting the organisation to provide a 7.5 Horse Power electrical motor so that water could be supplied even to livestock in the village. The organisation agreed to bear the cost of the motor subject to the clause that the Gram Panchayat would undertake maintenance. This marked the entry point



of the project. This event was well timed, as the village had been facing acute shortage of water that year and it had not been possible to divert any of the available water for use by livestock.

3. INSTITUTION BUILDING

The next stage of the project focused on the formation of three community based institutions, namely Village Development Committees, Bhageeratha Neeti Yajamanya Committee and Water User Groups, to strengthen the intervention.

3.1 Village Development Committees

Village Development Committees were formed in all 7 villages with 7-9 members each, one-half of who were women. One representative of the organisation was included in the Committee, which consisted of one Panchayat member and SHG group member each. Meetings were earlier held in the villages to discuss the organisational agenda with the villagers and shortlist members through consensus by the entire village. Care was taken to ensure that no social grouping was excluded. One goatherd/shepherd and landless individual each were also included in the Committee.



9. IMPACT ANALYSIS

The overall impact of the intervention has been quite positive and many significant changes have been brought about at the ground level, especially in the context of groundwater management. Not even a single individual bore well has been drilled in the Panchayat during the project lifetime. Awareness on the importance of conserving water among farmers has gone up and they have adapted to the situation by using Drips and sprinklers to bring about economy in the use of scarce water resources.

There has also been a distinct change in cropping patterns and farmers have begun to accord priority to semi-arid and dry crops over paddy and other water intensive crops. Sharing of water has been recognised as a social norm and water is accessible to every single family of the Panchayat. Water Budgeting is being done every year to plan the efficient use of water. Rainfall data are being collected and are being displayed on walls at public locations. Both mandal and district level officials are quite appreciative of the intervention.



In the words of Mr. G. Keshava Naidu Tehsildar of Tanakallu mandal, "The concept of water sharing is unique and is possible only when there is unity between givers and sharers. Jana Jaagriti has achieved this. The functionaries have done a good job by linking community to government schemes. Their strategy of taking the village as the unit of operation has been very effective. I suggest that whenever they expand, they must promote high-yield varieties of crop that consume less water. I appreciate them for having ably demonstrated that water sharing is a viable alternative to the situation at hand."



7.4 Involving the Gram Panchayat

The participation of the Gram Panchayat was encouraged at all stages of the project since its inception. They mobilised community and played an instrumental role in strengthening all institutions formed under the project. They also passed official resolutions in the context of the project and permitted the use of the Panchayat office for review meetings. In addition, they came up with valuable suggestions during review meeting to enhance the effectiveness of the project.

8. VISITORS

A number of government officials, farmers, community members and NGO representatives have visited CR Palli for firsthand exposure to the innovative strategies being adopted there.

TABLE 2 Details of Visitors

Profile	Visitors
Officials	23
Farmers	225
NGO representatives	300
Study Teams	5
Others	20
Total	573



The members were informed that they were responsible for identifying and resolving problem issues at the village level.



They were also called upon to make optimal use of scarce water resources. The Sarpanch informed that he would impose fees on those guilty of wasting water and also promised to undertake repairs to taps. The members assembled regularly to review the progress of the project and passed resolutions. They also discussed steps to protect CPR in the village. Monthly VO meetings were used as a platform to

address issues that arose during the review meetings. MMS members later took the issues to the notice of district level government officials.

3.2 Bhageeratha Neeti Yajamanya Committee

During the course of their work, the functionaries noted that the Village Development Committee members had not been able to effectively address some issues locally. They accordingly federated the Committees at the Panchayat level under the banner of Bhageeratha Neeti Yajamanya Committee. The Committee had the representation of one male and female member each from all 7 Village Development Committees. They were chosen by consensus during Grama Sabhas. The Volunteer was one of the members.



A number of names such as Social Regulation Committee, CR Palli Development Committee and Water Users' Association were initially proposed but village elder Uttam Reddy suggested that it could be named Bhageeratha Neeti Yajamanya Committee after the mythological character Bhageeratha, who had brought the Ganga down from the heavens.

The members were entrusted with the below responsibilities:

- ❖ Conduct review meetings in the first week of every month to discuss issues that had remained unresolved locally
- ❖ Pass resolutions and refer pending issues to line departments
- ❖ Regularly monitor groundwater levels and water levels in bore wells
- ❖ Play an active role in village development
- ❖ Promote the concept of water sharing
- ❖ Facilitate regular farmers' meetings

- ❖ Identify eligible beneficiaries for all government schemes
- ❖ Ensure adherence by farmers to SR norms
- ❖ Undertake recharge of water sources
- ❖ Share the progress of the project with key stakeholders

Brainstorming sessions were held with members of the Committee to discuss a set of Social Regulation Norms that would enable optimised use of water resources. The following measures were mutually agreed upon by the members at the end of these sessions:

Collective decision and action

No further drilling of bore wells

Introduction of efficient irrigation methods-drip, Sprinklers

Sharing of water in existing bore wells

Construction of water harvesting structures

Protection of vegetation in common land

No cutting of tamarind, custard apple, pongamia and neem trees

Promotion of irrigated dry crops

It was agreed upon by consensus that anyone that did not adhere to these norms would forfeit benefits under any government scheme that was launched in the village.

3.3 Water User Groups

The concept of Water User Groups was promoted in all villages of the Panchayat with the objectives of educating community on the need to conserve water and to promote the concept of water sharing. These groups



consisted of bore well owners and owners of farms receiving water from the bore well. The former were oriented on the need to share water with other farmers. They were reminded that water scarcity was already an issue of concern in the district and were further informed that water levels in their bore wells would go down if newer bore wells were dug in their neighbouring farms.

The better option would be to part with some of their water so that more farmers could be benefited.



He convened a Grama Sabha and interacted with the villagers. He also personally monitored the water level in the bore well and was surprised to note that water was available at a depth of 22 feet. He congratulated the villagers for their efforts and asked them to keep up the good work.

7.2 Convergence Meetings

The organisational functionaries shared the progress of the intervention during district and mandal level convergence meetings every year. Impressed with the efforts made under the intervention, the PD-APMIP provided Drips to both bore well owners as well



as water receivers though water receivers were not eligible for this facility under any scheme of the department.



7.3 Departmental linkages for farm inputs

The functionaries maintained regular contacts with authorities of various departments for benefits under different schemes.

TABLE 1	Departmental Linkages
Department	Benefit (s)
APMIP	34 Sprinkler Sets, 34 Drips
Agricultural Dept.	K6 Groundnut Seed – 10 farmers, pesticide – 10 farmers, Markers, Weeders and Pipeline – 2 farmers each
Electricity Dept.	1 Transformer, Electrical Poles – 3 farmers
Animal Husbandry	De-worming and Vaccination – Rs. 27,000
SC Corporation	Loans of Rs. 1 lakh – 3 farmers
DRDA	Loans of Rs. 1 lakh – 3 farmers
Rajiv Yuvashakti	Loans of Rs. 1 lakh – children of 2 farmers
NREGS	Horticulture linkages – 42 farmers, Drips – 6 farmers, Trench Works, Land Development
DWMA	Saplings – 42 farmers
ICDS	Balika Samrakshana Yojana – Rs. 3 lakhs
IKP	NPM in 7 villages since 2006 – 1 Coordinator and 5 Volunteers in place

unwilling to let the pipeline pass through his land. Srinivasulu Reddy Sir contacted his relatives and managed to convince him, after which he agreed.



Today we are not only a happy lot but are also glad that we are also able to lead dignified lives on par with farmers. We are also proud that we have been able to give life to so many plants. We have sown some groundnut this year and also going for intercropping. Narsamma got Rs. 200 of income from coriander. We propose to apply to the government for livestock so we can have additional income.

Adinarayana, Venkataramana, Peddavenkata Ramu, Narsamma, Yamanna, Graceamma Gopireddipalli Dalitawada

6. FOCUS ON LIVESTOCK INTEGRATION

Extensive discussions were held with members of the Village Level Committee on the importance of integrating agriculture with livestock so that their incomes were enhanced. They were informed that they could use the common lands available to them for grazing livestock. They could also use these lands as a source of fuel wood and raw material for agricultural implements. They were urged to protect these lands from encroachment by fixing boundaries. More than 400 acres of land were covered in this manner. One ram each was also given away to the Committees in 5 villages with the objective of enhancing livestock. Goatherds/shepherds were given intensive inputs on common diseases afflicting sheep and goats, de-worming and immunisation of livestock.



7. NETWORKING

7.1 World Water Day

Photo exhibition stalls were put up in Anantapur during the World Water Day celebrations organised by Ananta Paryavarana Parirakshana Samithi at the district level in 2010 and 2011 on 22nd March. District Collector Mr. Janardhan Reddy was impressed with the exhibits and spoke to the villagers at fair length on the SR intervention. He turned up at CR Palli a few days later unannounced.

Many farmers were initially unwilling to share water, as they would not be benefited in any way by doing so. The organisational functionaries told them that sprinklers were being given to them at 66% subsidy and that the water receivers and the organisation would jointly invest the remaining 34% if they agreed to part with some of their water. 7 farmers duly came forward to sign Memoranda of Understanding. The other farmers were convinced with the agenda over time and there are 34 givers and 60 receivers in the Panchayat today.

4. MONITORING WATER USAGE

Training sessions on Water Budgeting were organised for 100-150 farmers and each year in March from 2006 onwards to build their capacities to make optimal use of water. They were given extensive inputs on the preparation of Water Budgets. Data were collected on rainfall levels, land cover, crops, livestock and population. Water needs of



households, livestock and crops were assessed and compared with the actual usage of water. They were informed that utilisation of 70% or lesser of existing water resources implied that they were in the Safe Zone. The information in the Budget could be used as a basis to plan for the next agricultural year. The Agricultural Officer, the MPP, the Tehsildar and the MPDO took part in the session held during

March 2011. The Budget was also shared with district and mandal level officials.

Rainfall and groundwater levels in selected bore wells designated as Observation Wells were monitored regularly and the outcomes of this exercise shared with villagers during public meetings with the objective of bringing about behavioural changes among them in the context of water usage. They were involved in participatory exercises to make use of a Rain Gauge to measure rainfall levels. The water level in the gauge was recorded every morning at 8 a.m. during the monsoon. The results were updated regularly and displayed on a notice board in the Panchayat headquarters.



5. WATER FOR ALL

Most cisterns in villages of the Panchayat were not easily accessible, as they were located on the outskirts. Quite a few of the taps were also dysfunctional and were leaking, due to which a lot of water was being wasted. The organisation identified such pipelines and taps and got them repaired. 5 bore wells and 3 open wells were also recharged.



Ongoing meetings were held in all villages to bring about a sense of urgency among farmers in the context of conserving water. They were cautioned that over-extraction of groundwater could not only severely impact the water table but also increase their investments manifold. This situation could be avoided if they made efficient use of the available water by sharing water, which would result in a win-

win situation.

There was not much positive response from most bore well owners and they were unwilling to share scarce water resources with others. Very few people turned up at the meeting held in Kottuvaripalli. Participation by farmers that did not own bore wells was particularly poor, as they were skeptical of a positive outcome. They were not only unsupportive of this agenda

but actually began discouraging the other farmers. Special meetings were held with these farmers to educate them on the importance of cooperation amongst them and well owners.

Grama Sabhas were convened twice a year at the Panchayat level with the participation of all sections of community to discuss the progress of the intervention, identify problem issues, find solutions to them and chalk out action plans for the future. Troughs were provided for cattle and the village taps repaired. The electrical motor was also repaired through the Panchayat. Eventually, seven farmers came forward to support the agenda at the end of one year.



94 families of the Panchayat had been receiving water from 34 bore wells and an additional 150 families had been receiving water from the village tank as in 2010. However, 59 families had no access to water. This issue was raised during meetings of the Village Level Committees and was also discussed with the Bhageeratha Neeti Yajamanya Committee. The Sarpanch and the

Panchayat members passed a resolution linking 9 families from the SC community, 4 from the BC community and 1 from the OC community to an unused bore well in Turkavandlapalli.

The Sarpanch and the organisational functionaries later sought the support of the District Collector in the matter but he was not very responsive. They tried to meet the PD APMIP on 2-3 occasions but he was unavailable. They finally involved a senior leader of the ruling party D. Ravishankar Reddy in the issue and succeeded in reaching out to the PD. They invited him and the Asst. Director Horticulture to attend a Grama Sabha, after which the PD agreed to provide subsidy for 1300 metres of pipeline. The Asst. Director also came forward to sanction a horticulture project for 26 acres. The functionaries approached the PD-DWMA with a request for saplings but he did not cooperate with them, as they had not involved him in the issue from the beginning. They met the MLA and the MPP, who convinced the PD to sponsor mango saplings under the NREGS. The farmers were duly given 1820 saplings.



We had not had a successful crop for 7-8 years until 2010. Whenever we planted a crop, wild animals from the nearby forest used to destroy it. 18-20 families from our village had been migrating regularly to Bangalore from 2004 on, where we used to spend nearly 6 months a year. We were paid Rs. 150 a day each and could save just Rs. 50 a day after all our expenses. We had a daily wage of just Rs. 5 10 in the village and had been forced to migrate for want of alternatives.



Our lives have changed after the entry of Jana Jaagriti. Srinivasulu Reddy Sir came to our village one day and spoke to us on the importance of unity. He kept interacting with us for 6 months and formed a group with us. He encouraged us to go for horticulture. Our men folk did not listen to him initially but he was persistent and met us again and again. Finally, they agreed and he convinced the officials to provide a pipeline through the village. However, one of the

landlords Gopireddi Uttam Reddy was

Jana Jaagriti has been addressing a wide range of social issues with focus on empowering marginalised sections of society in Anantapur district for two and a half decades now. The organisation launched an intervention in 2004 in collaboration with Hyderabad based Centre for World Solidarity to promote the concept of Social Regulations in Water Management in Chinnaramannagaripalli Panchayat of Tanakallu, one of the most drought prone mandals of the district. What follows is a report on the activities implemented under this intervention during the period 2004-2012.

JANA JAAGRITI

Near Weekly Market, PO Tanakallu 515 571
Anantapur (dist), Andhra Pradesh, India
Tel: +91-8498-23 23 73, +91 - 944 022 4274.
email: janajaagriti@gmail.com

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By

G. PADMANABHAN

Documentation Consultant

Hyderabad, India

+91-9490 057 490 document.professional@gmail.com

Project Implemented by :

JANA JAAGRITI

Near Weekly Market, PO Tanakallu 515 571

Anantapur (dist), Andhra Pradesh, India

Tel: +91-8498-23 23 73, +91 - 944 022 4274.

E-mail: janajaagrity@gmail.com

Financial Support extended by :

CENTRE FOR WORLD SOLIDARITY

House No. 12-13-438, Street No. 1, Tarnaka

Secunderabad 500 007, Andhra Pradesh

CONTRIBUTORS :

D. P. BALARAM,

S. SRINIVASULU REDDY

V. LAKSHMIDEVAMMA

R. SRINATH REDDY

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