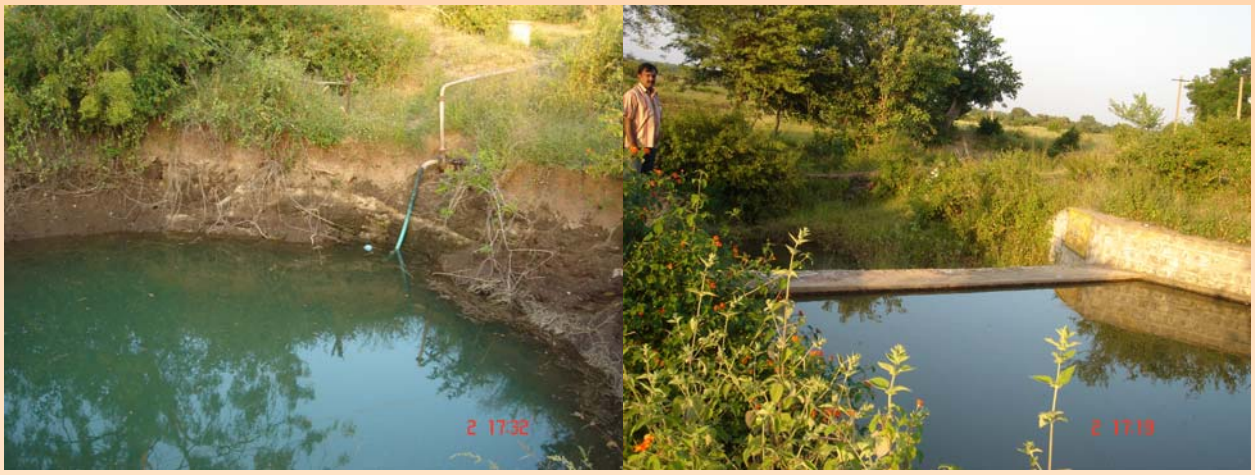
Impact Assessment Report

DROUGHT PRONE AREA PROGRAMME (DPAP)
BATCH IV
MEDAK DISTRICT, ANDHRA PRADESH



BY

RP: RESILIENT DRYLAND SYSTEMS

ICRISAT
Science with a human face

International Crops Research Institute
for the Semi-Arid Tropics

August 2011

Impact Assessment Report

DROUGHT PRONE AREA PROGRAMME (DPAP)
BATCH IV
MEDAK DISTRICT, ANDHRA PRADESH

BY
RP: RESILIENT DRYLAND SYSTEMS

ICRISAT
Science with a human face
International Crops Research Institute for the Semi-Arid Tropics

August 2011

Contents

ACKNOWLEDGEMENTS

We express our gratitude to the Department of Land Resources, Ministry of Rural Development, and Government of India New Delhi; for assigning the study of impact assessment of DPAP Batch IV watersheds in Medak district. We greatly acknowledge to the Commissioner, Department of Rural Development, the Government of Andhra Pradesh for providing co-ordination with Project Director, District Water Management Agency (DWMA), Medak; to guide us in selecting watersheds for complete representation of variability of watersheds for the study of impact assessment of DPAP Batch IV watersheds in Medak.

We sincerely acknowledge the support and guidance of Project Director, DWMA for providing all support with active participation and getting required support from his project staff. We record our profound thanks to Mr. Mangaiah Sarma, Additional Project Director, DWMA and Assistant Project Director of Narayankhed, Sangareddy and Zaheerabad mandals for their untiring support and help touring along with us every day and organizing *gram sabhas* and field visits in all watersheds, which was most crucial in our efforts.

We profusely thank Dr. William D. Dar, Director General of ICRISAT for his approval to undertake this study and encouragement for a good analysis of the study.

Dr. S P Wani
Principal Scientist (Watersheds) and Project Coordinator (IWMPs)
RP: Resilient Dryland Systems
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
Patancheru -502 324, Andhra Pradesh

ABBREVIATIONS

APD	Assistant Project Director
DRDA	District Rural Development Agency
DPAP	Drought Prone Area Programme
DWMA	District Water Management Agency
FGD	Focused Group Discussions
IWD	Integrated Watershed Development Programme
LBS	Loose boulder structures
MDT	Multi-disciplinary t eam
NGO	Non-governmental Organization
NRM	Natural Resources Management
NWDP	National Waste land development Board
PD	Project Director
PIA	Project Implementing Agency
PRA	Participatory Rural Appraisal
PT	Percolation Tank
RFDs	Rock Filled Dams
SF	Social Forestry
SHGs	Self-Help Groups
SMC	Soil Moisture Conservation
UGs	User Groups
WA	Watershed Association
WS	Watershed
WDC	Watershed Development Committee
WDF	Watershed Development Fund
WDT	Watershed Development Team

EXECUTIVE SUMMARY OF IMPACT ASSESSMENT

In Medak district, DPAP – batch IV received funding for development of 30 watersheds in six Mandal and the project was implemented from 1998-2003 to treat 15000 ha with watershed development.

1. One of the main objectives of DPAP IV was to minimize the adverse effects of drought on production of crops and livestock and productivity of land, water and human resources. In the inception stage 10 of the selected sixteen watershed villages for impact assessment took up Entry Point Activity (EPA) that ensured community participation and awareness about the watershed project by providing support of funds for drinking water facility, village approach roads, soak pits and school building and temple related activity were taken up in watershed villages where EPA was undertaken, villagers were satisfied and appreciative of the usefulness of the works.

2. Project expenditure pattern (Table 1) indicates that spending on community organizations development and training of beneficiaries was 7.3% as per the allocation of the budget.

3. Although, there was ample scope and opportunities to address the issues of women by forming self-help groups (SHGs) involving weaker sections of the society, this aspect was taken up moderately as was evidenced by moderate growth of total 194 SHGs in 16 watersheds assessed; and a many are functional at present in the selected 16 watershed communities. Every watershed was provided with Rs 50,000 as revolving fund to all SHG's formed in the watershed villages. In large scale activities which promote income generation like purchase goats, sheep, buffalo for milk production and running kirana shops buying agricultural inputs and raising nursery of horticultural and forest tree plants, weaker sections and women through SHGs should have been involved. SHGs development was not conspicuously seen in terms of successful and sustainability of rural livelihoods for income generation.

4. A total of 174 user groups (UGs) were formed in sixteen watersheds. Soil and water conservation works were undertaken by the WCs without much participation of people, and in some watersheds although farmers participated for works in their fields. User groups' participation in constructing SWC structures would have developed belongingness and prompted for timely management of these structures.

5. In 16 watersheds assessed, masonry structures constructed were generally of good quality and suitably located. However, in these watersheds, for lack of maintenance of the structures for a longer period, some structures were damaged, need immediate attention to repair these structures and remove siltation to improve efficiency of SWC structures.

6. Farmers in 16 watersheds assessed located in different mandals reported an increase in ground water levels ranging from as low as 0.5m to a maximum of 3-4 m in open wells due to SWC structures as well as field bunding. Water availability in the open wells increased up to March-April months for irrigation. In many watersheds, the number of successful bore wells increased to more than 150-200 in each watershed, as an indication of farmers' confidence on water availability and exploitation for higher income.

7. Period of water availability for irrigation extended from November-December months before the watershed development, to end of March-April after the watershed development.

8. Crop intensity increased from 100% to a range between 150%-200% as the number of bore well those support second crop were more than 200 per village in many villages in our study.

9. Although, variability exists in reported productivity enhancement, it varied from as low as 20 to more than 50% increase in case of grain crops like paddy, maize as well as second crop of groundnut and sunflower in some watersheds. Yields of paddy in the first season generally increased from 20 bags to a range between 25 to 30 bags per acre and in the second season average yield was up to 35 bags per acre.

10. Farmers were not exposed to best production technologies for dryland crops to achieve higher water use efficiency in these crops. This should have been possible as the farmers get exposed to advances in dryland technologies.

11. Under DPAP Batch-IV watersheds of Medak, afforestation activity received relatively less attention. However horticulture activity received considerable interest generated among farmers for mango cultivation on seeing the success of watershed farmers planted mango in earlier project.

12. Farmers had harvested mango with a net income ranging from Rs.15,000 to Rs.25,000 per acre based on growth and age of mango orchards. Farmers in various DPAP-IV watersheds indicated good income from mango based on the age and growth of the orchard.

13. Development of common property resources (CPRs) was done in few watersheds of the 16 selected watersheds in the project for the impact assessment study. In all other watersheds, there was no information on CPRs development during DPAP- Batch IV Project.

14. Our analysis of focused group discussions with village communities indicate that only in 35% of the watershed villages farmers expressed affirmatively for withstanding drought effects for one or two years and vulnerable for mainly fodder scarcity as there is no fodder security for large number of goat, sheep and cattle population.

15. Farmers and WC members in almost all watersheds mentioned that if the WDF was made available for repair and maintenance of watershed structures or for construction of much needed new structures, the impact would have been felt very much by the beneficiaries in the watershed.

BACKGROUND

The Drought Prone Areas Programme (DPAP) aims at mitigating the adverse effects of drought on the production of crops and livestock and productivity of land, water and human resources. The basic objective of the programme is to minimize the adverse effects of drought on production of crops and livestock and productivity of land, water and human resources ultimately leading to drought proofing of the affected areas. The programme also aims to promote overall economic development and improving the socio-economic conditions of the resource poor and disadvantaged sections inhabiting the programme areas. It strives to encourage restoration of ecological balance and seeks to improve the economic and social conditions of the poor and the disadvantaged sections of the rural community.

DPAP was a people's programme with Government assistance. Allocation is to be shared equally by the Centre and State Govt. on 50:50 bases. Watershed community is to contribute for maintenance of assets created. Funds are directly released to District Rural Development Agencies (DRDAs)/District Water Management Agency (DWMA) to sanction projects and release funds to Watershed Committees and Project Implementation Agencies.

Village communities, including self-help groups/user groups, undertake area development by planning and implementation of projects on watershed basis through Watershed Associations and Watershed Committees constituted from among themselves. The Government supplements their work by creating social awareness, imparting training and providing technical support through project implementation agencies.

The project encompassed treatment of 15,000 ha of cultivable land in 30 watersheds in 6 mandals of Medak district. The objectives of this project were: (1) To integrate land and water conservation and management into the village micro-watershed plans; and (2) To enhance people's participation in the integrated watershed development program at all stages. This project was sanctioned for implementation with a project budget outlay of Rs. 605.325 lakhs (Table 1) and to accomplish over a period of six years from 1997-98 to 2002-03. The Ministry of Rural Development (MoRD), Government of India and the Government of Andhra Pradesh. A total of Rs. 605.325 lakhs were sanctioned and released for DPAP IV in Medak between 1997 and 2002 (Table 1).

Table 1. Development activity component-wise approved targets and financial allocation in the project.

Components of Developmental activities	Total allocation (Rs. lakhs)	Total Expenditure (Rs. lakhs)	% of expenditure on different activity
On training and community organizations	43.975	43.975	7.3
NRM works	426.1	426.100	70.4
Administrative costs	45.25	45.250	7.4
Project Director 's expenditure	90.0	90.000	14.9
Total	**605.25**	**605.325**	**100**

District Rural Development Agency (DRDA) Medak, now designated as District Water Management Agency (DWMA) was assigned the responsibility of providing infrastructure for implementation, management of the project through project implementing agency and financial supervision of the project and received an amount of Rs.600 lakhs grant at 50% contribution each from GOI and government of AP.. DRDA-Medak selected government and non-governmental agencies for project implementation during 1998-99 to 2002-2003. The details of 30 selected watersheds in respective mandals for treatment is given in Table 2.

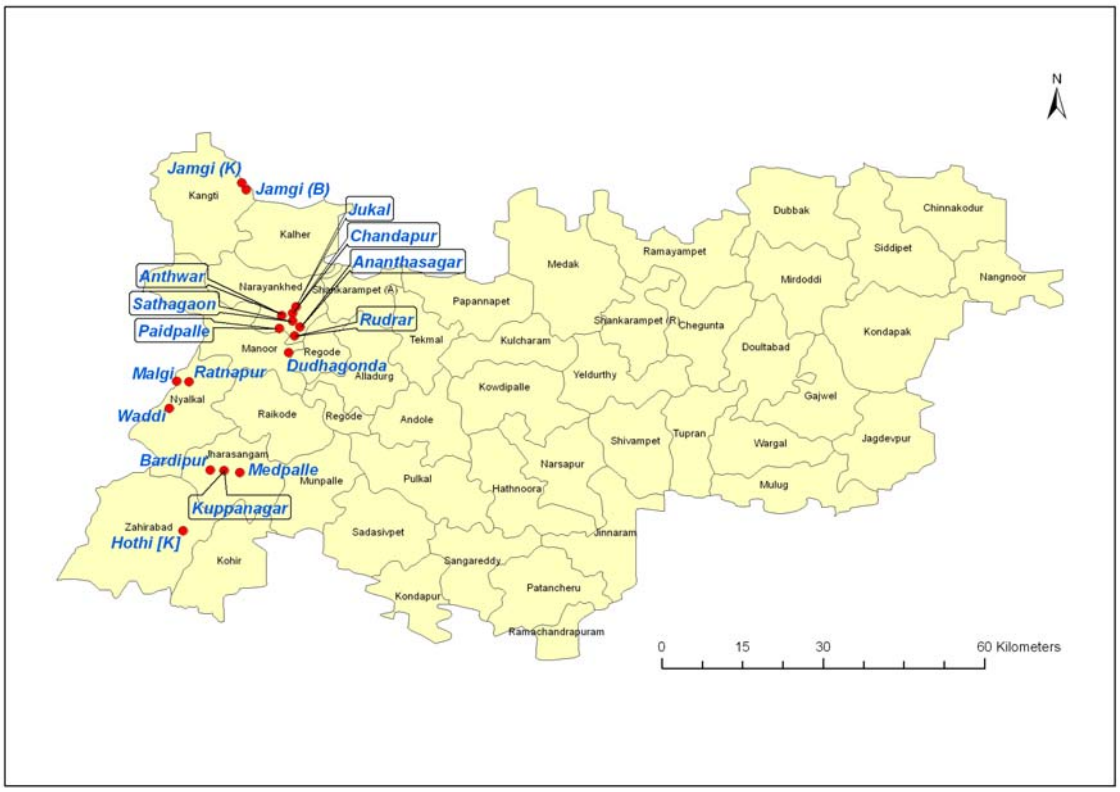
Table 2. Details of 30 watersheds covered by DPAP-IV project in 6 Mandals of Medak for treatment in these watersheds.

S. No.	Mandal	No. of watershed	S No.	Mandal	No. of watersheds
1	Kangti	9	4	Zaheerabad	5
2	Narayankhed	6	5	Nyalakal	3
3	Manoor	2	6	Jharasangam	5
	Total of 30 watersheds in 6 mandals				

Agricultural Situation in Medak

Soils and land use pattern

In Medak, sandy loams and red sandy loam soils are the major soil types and salt affected black soils are also present. In the total geographical area of Medak 60% are red sandy loams, 26% black soil area and remaining 13% are lateretic and alluvial soils and mixed soils. The district map of Medak with mandals and watersheds/villages assessed (Red dot) for impact were marked in Map 1.



Map 1. Name of villages marked with red circle which are taken for impact

Agricultural crops grown are paddy, sugarcane, maize, soybean, sorghum, pearl millet, groundnut, sunflower, cotton and green gram. Horticulture plantation of mango, sapota, guava and sweet lime is also seen and vegetables like potato, ginger, tomato and brinjal are grown extensively.

Rainfall

Medak district receives a total normal rainfall of 743 mm per annum with 78% of annual rainfall contributes to main cropping season during South-West Monsoon from June to September and North-East monsoon provides 13% of rainfall between October and

December months. During the month of Jan-may off season and summer months receive about 10% rainfall. Drought conditions generally prevail during south-west monsoon season determines the crop production in the season.

Rainfall in the district since crop season 1997-98 until 2002-03, i.e. during the watershed implementation period year 1998, 2000 and 2003 was above normal rainfall. During 1999, 2001 and 2002 season's rainfall was below normal in the district are presented in Table 3. Hence, farmers in some watersheds during focused group discussions mentioned about low rainfall that lead to less impact of watershed interventions/ development.

Table 3. Monthly and total rainfall during the year 1997-2003 for Medak district of Andhra Pradesh.

	Monthly Rainfall (mm) for the year 1997-2003 for Medak District, Andhra Pradesh								
Month/ Year	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**Average**	**% of total**
January	11.4	0.0	0.0	0.0	20.0	22.4	0.0	**7.7**	**0.9**
February	0.0	0.0	3.0	57.8	0.0	4.8	0.4	**9.4**	**1.1**
March	56.8	29.6	2.4	0.0	2.0	9.0	10.8	**15.8**	**1.8**
April	38.4	48.8	0.0	0.0	10.8	11.8	27.8	**19.7**	**2.2**
May	31.5	35.2	76.0	122.6	0.0	6.8	0.0	**38.9**	**4.4**
June	19.2	101.7	62.2	240.8	141.6	89.3	39.0	**99.1**	**11.2**
July	157.0	286.8	183.2	231.0	105.8	112.8	288.5	**195.0**	**22.0**
August	140.1	299.9	129.3	664.8	182.5	187.1	355.7	**279.9**	**31.5**
September	133.3	198.6	80.1	134.8	94.0	83.5	105.3	**118.5**	**13.3**
October	74.4	165.0	38.4	18.0	126.8	100.0	98.6	**88.7**	**10.0**
November	50.0	15.2	5.0	0.3	4.2	0.0	0.0	**10.7**	**1.2**
December	31.0	0.0	0.0	2.8	0.0	0.0	0.0	**4.8**	**0.5**
Year total	**743.1**	**1180.8**	**579.6**	**1472.9**	**687.7**	**627.4**	**926.1**	**888.2**	**100.0**

METHOD OF IMPACT ASSESSMENT

Multi-disciplinary impact assessment team

Dr. S. P. Wani, Principal Scientist (Watersheds), Project Coordinator (IWMPs), RP: Resilient Dryland Systems

Mr. V. Nageswara Rao, Lead Scientific Officer, Agronomy

Mr. L. S. Jangawad, Lead Scientific Officer, Agricultural Engineering

Mr. Ch. Srinivasa Rao, Sr. Scientific Officer, Soil Science

ICRISAT's RP: Resilient Dryland Systems, which was responsible for the impact assessment of the DPAP IV watershed projects in Medak, consists of scientists from various professional backgrounds: soil science, hydrology and agricultural engineering, and agronomy. To undertake the impact assessment of watershed projects, multi-disciplinary team was formed that consisted of (at least) three researchers with different areas of expertise and (at least) one scientific officer who was responsible for the technical inspection and evaluation of the constructed structures in the watershed. To assess the different aspects of watershed development projects, the scientists in each team had scientific expertise in Agronomy and soil science/hydrology, engineering / technical aspects and social aspects/ institutions.

As a first step, ICRISAT's RP: Resilient Dryland Systems discussed the "terms of references" from the Government of India and shared the experiences from previous impact and midterm assessments. The division of tasks was undertaken in a participatory manner depending on the professional expertise and the local knowledge of the scientists and scientific officers. We had divided tasks of the impact assessment in two parts, i) Focused Group discussions, with participation of the local population, a crucial factor of a successful impact assessment; and ii) Field visits, to ensure verification of watershed structures, their maintenance and assess their use.

DISCUSSIONS WITH DWMA OFFICIALS

ICRISAT undertook the assessment with an open and participatory approach with the staff of the DWMA and village level staff.

Table 4. List of selected DPAP IV watersheds for impact assessment and concerned PIAs.

S.No.	Name of the watershed	Mandal	Name of the PIA
1.	Ananthasagar-I	Narayankhed	READS
2.	Anthwar-Paidipalli	Narayankhed	READS
3	Bardipur	Jharasangam	DOVE
4	Doodgonda	Manoor	READS
5.	Govindapur	Zaheerabad	HELP
6	Hoti-B1	Zaheerabad	HELP
7.	Jambgi-B	Kangti	SCOPE
8.	Jambgi-K	Kangti	SCOPE
9	Kuppanagar	Jharasangam	DOVE
10.	Jukal	Narayankhed	READS
11.	Kuppanagar	Jharasangam	DOVE
11.	Maligi	Nyalakal	HELP
12.	Medapalli	Jharasangam	DOVE
13.	Ratnapur	Nyalakal	HELP
14.	Rudrar	Narayankhed	READS
15.	Satygaon-Chandapur	Narayankhed	READS
16.	Waddi	Nyalakal	HELP

The involvement of the program staff of the respective watershed projects at various stages of the assessment aimed at enhancing the ownership of the results among the extension personnel. Impact assessments in started with a meeting of the ICRISAT team with Additional Project Director and two of the Assistant Project Directors (APD) of DWMA and their staff under the instruction of Project Director of the District Water Management Agency, Medak.

Meeting with project staff helped us to finalize the list of watershed villages (Table 4) evenly spread across 6 mandals in Medak district (Map 1. Medak district) for impact assessment

and scheduled our visit. We also ensured accompanying and participation of concerned APDs at FGD in watersheds in their respective mandals, and their presence was quite helpful in calling the *gram sabha* and field visits to watershed structures.

FOCUSED GROUP DISCUSSIONS

The focused-group-discussions were held with members of the watershed development team, the watershed committee, farmers/beneficiaries and whenever possible with the Gram Panchyat president even. Focused-group-discussions enabled us to elicit valuable information in short time and to include the community in the process. It is important to check, however, the participation of a representative sample of the local population in order to extract meaningful information that helps to draw conclusions of the whole picture. We standardized a comprehensive version of focused group discussion format which is used for this assessment. ICRISAT ensured the participation of majority local language speakers in the multidisciplinary team and structured the focused-group-discussions according to the guidelines and the specific local context. The meetings focused on the community's knowledge of the watershed program, their personal benefits as well as their assessment of the impacts for the whole community. In villages where women Self-Help-Groups (SHG's) were formed under the watershed project, a special focus was laid on discussions with the SHG members and the impacts upon women's lives of the watershed project.

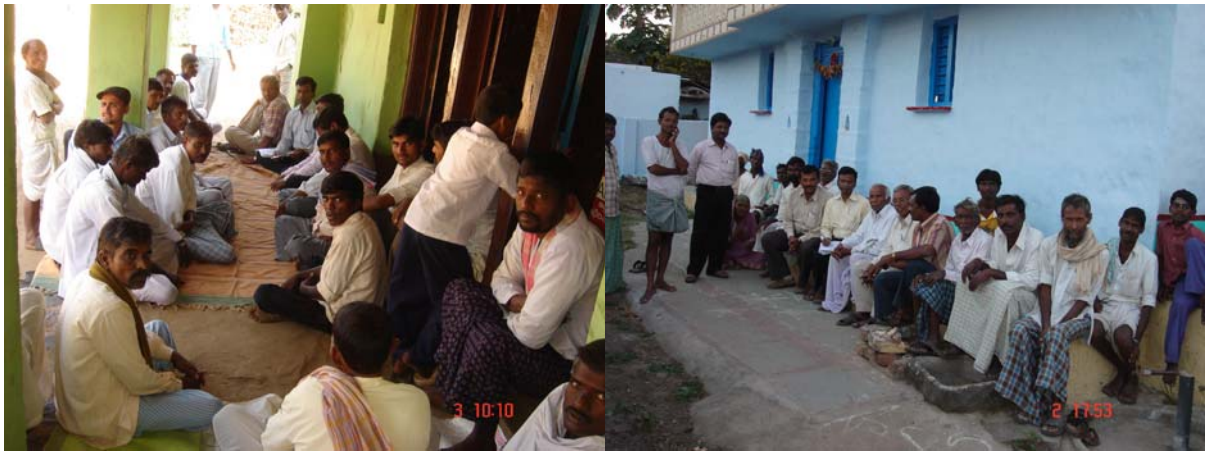


Fig: Focus group meeting during the watershed impact assessment at Jambgi-K and Anthwar-Paidipalli with watershed committee members and farmers.

The meetings also served as an opportunity to verify the records of the watershed development team where ever available and to discuss aspects such as maintenance of the structures, sustainability and other schemes implemented in the village.

FIELD VISITS

While the focused-group-discussions were held in the village, other member(s) of the team inspected a minimum of two structures considering them as samples of these physical structures such as check-dams, percolation tanks, CCTs, open wells and retaining walls, assessed their quality of construction and selection of location and measured structures on a random basis and assess their potential impacts for number beneficiaries and extent area and on the community well-being. Individual farmers were interviewed for their gains by watershed interventions when they were spotted in the fields nearby the structures wherever possible.

After completing the field visits, the observations were openly shared with the participating program staff. Their comments and feedback were also included in the assessment of the watersheds.

PERIOD OF EVALUATION

Impact assessment of watersheds in Medak was done from 17th to 20th September 2009 and also from 23rd to 27th November 2009, and the actual field visits took place for two weeks in Medak district with the help of project staff of DWMA, Medak.

WATERSHED-WISE IMPACT ASSESSMENT

The details of focused group discussions, assessment of watershed interventions including our observations of soil and water conservation structures (pictures) and watershed-wise impacts on watershed communities were provided here under in the suggested format for all 16 watersheds assessed during September and November 2009.

Impact Assessment Report
ANANTHASAGAR Watershed, DPAP – IV batch
NARAYANKHED Mandal, MEDAK district, Andhra Pradesh
Project activity during 1997-98 to 2002-03

1. Details of watershed:

i. Name of the Scheme:	DPAP – IV Batch
ii. Name of the watershed:	Ananthsagar –I
iii. Names of villages in the Watershed:	Ananthsagar
iv. Villages/Mandal/District:	Ananthsagar/Narayankhed/Medak
v. Name and Address of PIA:	READS [NGO]
vi. Total area of the watershed:	500 ha

2. Ownership pattern of land:

i. Community land (ha)	
ii. Government land (ha)	50 ha
iii. Private land (ha)	450
iv. Forest land (ha)	
v. Others	

3. Verification financial and other Records

i. Total cost:	Approved: Rs. 10,70,472	Spent: Rs. 10,69,000
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes, CDs: 2; PTs: 6; RFDs/LBS: 77; Field bunding: 450 acre; Sunken pits: nil,CCts-17 ha Nala bunding after widening "Mathadi vagu" Drinking water problems is there, water tank was constructed but it was not put to use up to now	
iv. Whether watershed committees exits	YES, Chairman: Ram Reddy, President: Yousuf Miah, Secretary: Ravindra Reddy	
v. if exists, activities of the committees	Formally exist for meeting of visitors	

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)
EPA: school building land was purchased taking Rs.50,000/-

5. Qualitative parameters of impacts

i. Functioning of village level institutions	No. of UGs		No of SHGs		WC members: 12
	Before	After	Before	After	Male:8
	10	-	10	10	Female:4
Describe					
ii. Records of meetings properly updated	WC: Yes WA: Yes				
iii. Liaison with scientific institutions established	ICRISAT visited one time for cropping technologies.				
iv. Watershed Development Fund collected?, and its utilization	Rs. Not known to chairman				
v. Self-Help Groups	No:		Revolving fund: Rs.50000		
V.O functioning:			Savings:		
Utilization of loans:	Neem seed business. Shops, Agri inputs, milch animals				
Bank linkages established:	SBI Narayankhed				
vi. Planned CPRs sustainable & equitable development	One PTs				
vii. Benefits to weaker sections (women, dalits and landless)	Labor wages during project period				

6. Quantitative parameters of impacts

i. Improvements in water table/water availability	Increase in ground water level(m) 2.5-3.0 No of well rejuvenated 25 and 50 new bore wells Water availability up to May month in good rainfall years
ii. Additional area under cultivation/horticulture/afforestation	Fifty acre area increased under cultivation with additional water.
iii. Changes in cropping pattern and intensity	Green gram, sorghum, pigeonpea, cotton, paddy
iv. Changes in agricultural productivity	Green gram: 3q/acre; Pigeonpea:3-4q/acre; paddy: 30 bags/acre
v. Changes in fodder & fuel wood availability	Due to increase in crop yields increase in fodder availability.
vi. Changes in size and character of livestock holdings	Increased 50 buffalo for milk purpose, increase in milk yield 150 liter per day
vii. Status of grazing land & their carrying capacity	Some plantation of forest crops 25% survival, grass for open grazing slightly improved
viii. Employment generated due to implementation of project	Labor got some wages due to project activity with additional agriculture, plantation and horticulture activity
ix. Change in household	25% improved income to families

category, total, & source-	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans are availed, linkage with bank SBI Narayankhed
xi. Reduction in out-migration (case studies)	Not much, still 10% going to Hyderabad
xii. Reduction in drought vulnerability of the watershed	Only 25% protection due to increased water in bore wells and wells for crop production.
xiii. Detailed case studies of specific farmers impacted by the project	1. PTs in a Gouraren Tanda was successful in storing water and recharge or bore wells 3-4 acres under paddy.
xiv. Photographs showing work + its impact	Enclosed

7. **Learnings and process documentation** (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- The bunding work and RFD's works are done well
- Reasonably good improvement in ground water recharge
- Repair of structure is required for leakage of check dams, gates etc
- Siltation in check dams needs to be desilted
- Productivity increased in paddy due to water availability.
- Plantation of house hold an border tree plants survival rate only 25%

8. **Observations and Comments by Evaluators:**

Check wall Masonry -> 20m*1m*30m = 400m^3 size -> leakage

- PT near Bandrampally village -> about 1000m^3 capacity
- Check wall is constructed to store and regulate irrigation water from tank to down stream fields of about 40 acres with about eight beneficiary farmers. Only one open well in the down side with two acres of paddy cultivation. Big leakage is found at one corner near stone and now it is not useful.
- PT is benefiting only one farmer with one bore well benefiting about three acres. Paddy is grown now. Mr.Manikyam is beneficiary farmer. Specific datasets on different impact parameters:

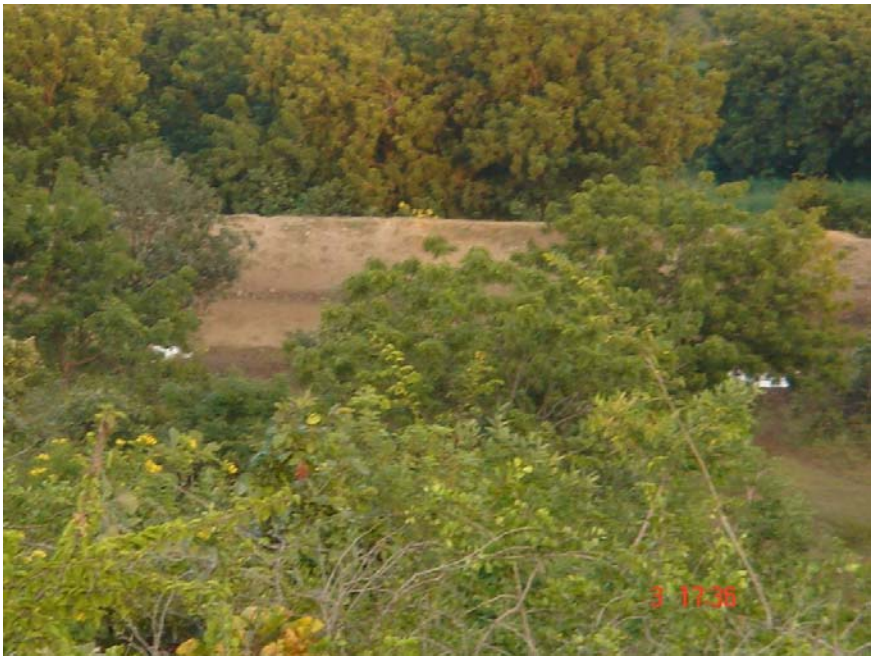


Fig: Perolation tank near Bandramapally village

Fig: Check dam benefitting 40 acre farmers' fields is silted up and a big hole at corner of CD having no storage of water needs repair.

Impact Assessment Report

ANTHWAR, PAIDIPALLI Watershed, DPAP – IV batch
NARAYANKHED Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch
II.	Name of the watershed:	Anthwar-Paidipally
III.	Names of villages in the Watershed:	Anthwar-Paidipally
IV.	Villages/Mandal/District:	Paidipally-Narayankhed-Medak
V.	Name and Address of PIA:	SCOPE (NGO)
VI.	Total area of the watershed:	500

2. Ownership pattern of land:

I.	Community land (ha)	40
II.	Government land (ha)	
III.	Private land (ha)	460
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other Records

i.	Total cost:	Approved:	Spent:
ii.	Expenditure incurred as per guidelines	Yes	
iii.	Works executed as per Records	Yes, CDs: 2; PTs: 2; RFDs/LBS: 90; Earthern Bunding: 600 acres; CCT: 4-5 kms; CCT = was a major work that helped water improvement in the watershed.	
iv.	Whether watershed committees exits	YES, Chairman: D.Vittal Rao, President: M.Ganga Ram, Secretary: Md.Ammin	
v.	if exists, activities of the committees	No	

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

No EPA

5. Qualitative parameters of impacts

I.	Functioning of village level institutions	No. of UGs		No. of SHGs		WC members:12
		Before	After	Before	After	Male:8
		10	30	8	8	Female:4
II.	Records of meetings properly updated	Yes- regularly				
III.	Liaison with scientific institutions established	No				
IV.	Watershed Development Fund collected?, and its utilization	Rs.1,00,000				
V.	Self Help Groups	No		Revolving fund: Rs.50000		
VI.	V.O functioning:			Savings:		
VII.	Utilization of loans:	Agri inputs, buying milk animals, Shops etc				
VIII.	Bank linkages established:	APGVB Narayankhed				
IX.	Planned CPRs sustainable & equitable development	CCTs were formed for a length of 5km. Earthen bunding 100 acres				
X.	Benefits to weaker sections (women, dalits and landless)	Labor work during the project, more work in agriculture activity after improved water availability in wells and bore wells for cultivation.				

6. Quantitative Parameters of Impacts

I.	Improvements in water table/water availability	Open wells: 12; Bore wells: 10 (3m deep water) 10 yards deep wells. 2 m water increase in open wells. 3 - 5m Water depth by January now extending up to march.
II.	Additional area under cultivation/horticulture/af forestation	50 acre newly brought under cultivation. Pongamia, Sisu plantation, Horticulture plantation in 30 ha
III.	Changes in cropping pattern and intensity	Paddy and onions second crop which ends by February.(paddy & onion two crops) 200% as onion is adopted as short second season crop
IV.	Changes in agricultural productivity	Paddy, green gram, red gram, Bengal gram, sorghum, rabi
V.	Changes in fodder & fuel wood availability	Fodder is sufficient
VI.	Changes in size and character of livestock holdings	Increased in milk yield up to 100 liter per day
VII.	Status of grazing land & their carrying capacity	Open grazing improved
VIII.	Employment generated due to implementation of project	Increased area and intensity of agriculture and horticulture crops.

IX.	Change in household category, total, & source-	Improved in household income up to 40%
X.	Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans only, no debt availability
XI.	Reduction in out-migration (case studies)	Labor migration reduced (20%), but out migration of some labor to Hyderabad is continuing.
XII.	Reduction in drought vulnerability of the watershed	Vulnerability still continues hence migration continues to Hyderabad.
XIII.	Detailed case studies of specific farmers impacted by the project	Enclosed
XIV.	Photographs showing work + its impact	Enclosed

7. **Learnings and process documentation** (how the program could be implemented better; constraints, improvements possible, changes made etc.)

    1. Want bigger watershed structure and more area to be covered for full benefit.
    2. Silt removal and repair of structure to be undertaken with WDF or NREGA.
    2. Saturation of watershed activities in these two villages will help increase advantage or impact of activities.

8. **Observations and Comments by Evaluators:**

- Open well near check dam, GWL near to surface.
- Masonry check dam -> BWL-8m, ht-1m & ponding-50m = 200m^3
- Percolation tank with surplus weir @ Rs.1.25 Lakh – 60m long, 2m height *40m = 3000 m^3
- Open well near PT, GWL 1m down from surface.
- PT -> about 2500 m^3 and about 1000 m^3
- Good PT & good amount of water stored. Four wells, six farmers & area benefited is about 20 acres. Good improvement GWL. Cost Rs.95000.
- Check dam is with full of water and GWL is up to surface in nearby open well. Three wells, four farmers, 25 acres area, lot of improvement GWL.
- Percolation tank is big and good. Two wells, four farmers, eight acres under irrigation. Lot of improvement in GWL, earlier one acre under irrigation in nearby open well. Now four acres in rainy & two acres in ragi under irrigation. One of the beneficiary farmers Mr. S.Nagi Shetti is happy.

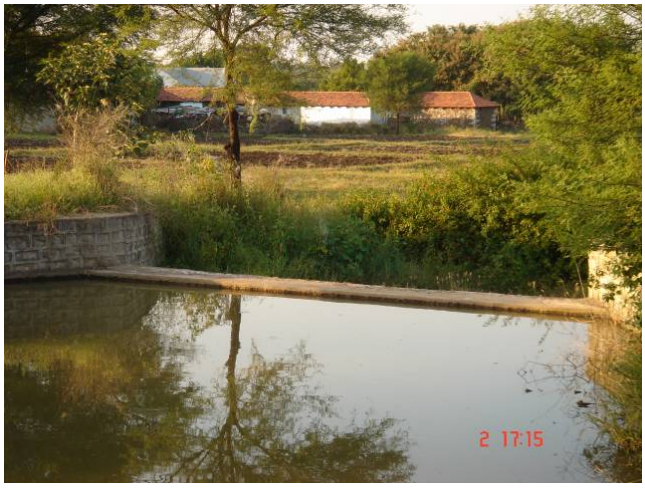
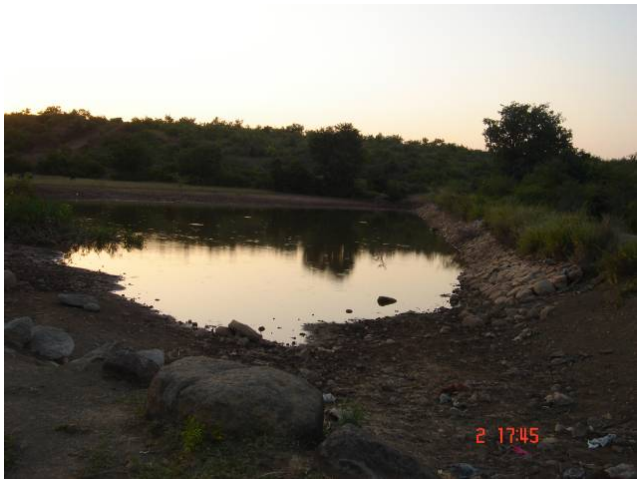



Fig: Check dam with full water stored and percolation tank with good water storage helped to recharge the ground water availability in wells and bore wells around the structure.

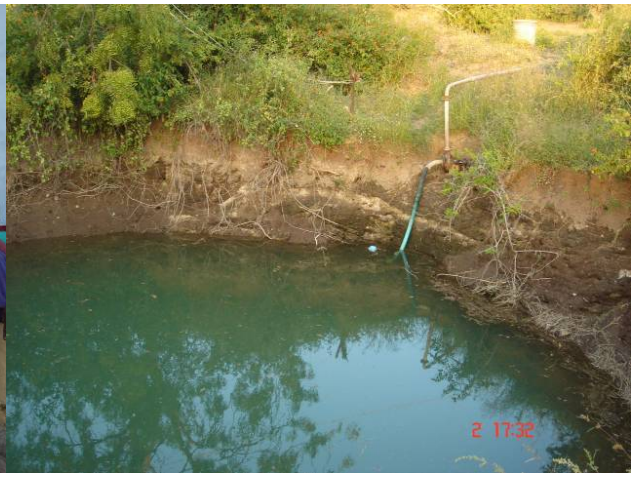



Fig: Meeting with farmers and watershed committee member during the focus group meeting. A good improved ground water availability seen in wells for growing various crops

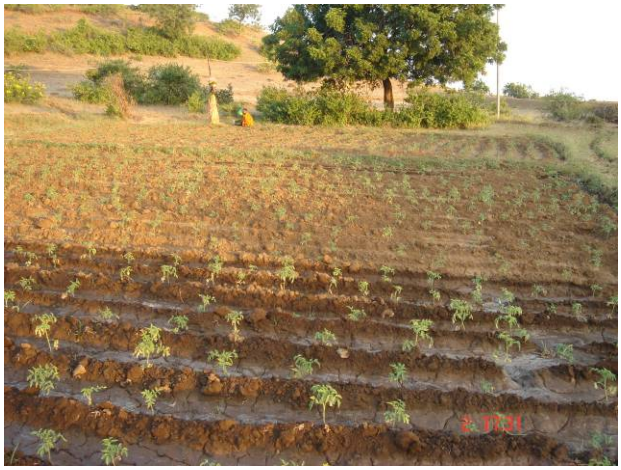


Fig: Recharged well supporting irrigation to a tomato crop grown during Rabi season.

Impact Assessment Report
BARDIPUR Watershed, DPAP – IV batch,
JHARASANGAM Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

i.	Name of the Scheme:	DPAP – IV Batch
ii.	Name of the watershed:	Bardipur
iii.	Names of villages in the Watershed:	Bardipur
iv.	Villages/Mandal/District:	Bardipur/Jharasangam/Medak
v.	Name and Address of PIA:	DOVE (NGO)
vi.	Total area of the watershed:	500ha

2. Ownership pattern of land:

i.	Community land (ha)	
ii.	Government land (ha)	100
iii.	Private land (ha)	400
iv.	Forest land (ha)	
v.	Others	

3. Verification financial and other Records

i.	Total cost:	Approved: Rs. 14.65 lakhs	Spent: Rs. 14.6 lakhs
ii.	Expenditure incurred as per guidelines	As per the approved guidelines	
iii.	Works executed as per Records	Yes, CDs: 7; Min PTs: 5; RFDs: 52; Field Bunding: 160 acres; CCT: 1000cubicmts; Check walls: 2	
iv.	Whether watershed committees exits	YES, Chairman: Sanganna Patil, President: T.Krishna, Secretary: Pentaiah Gandhi, 11 member committee	
v.	if exists, activities of the committees	Not active	

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

Part of village road approach with gravel spent Rs.50,000/-

5. Qualitative parameters of impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 11
	Before	After	Before	After	Male:8
	-	10	10	10	Female: 3
ii. Description					
iii. Records of meetings properly updated	Monthly meeting & WA or gram sabha once in 3 months				
iv. Liaison with scientific institutions established	Ralegan Siddhi; Anna Hajare visit as exposure on watershed works				
v. Watershed Development Fund collected?, and its utilization	Rs.90000/-				
vi. Self Help Groups	No:		Revolving fund: Rs.50000		
vii. V.O functioning:			Savings:		
viii. Utilization of loans:	Back yard poultry, Milch animals purchase, agri inputs				
ix. Bank linkages established:	Syndicate bank Jharasangam				
x. Planned CPRs sustainable & equitable development	5 acres of land development with plantation of forest trees				
xi. Benefits to weaker sections (women, dalits and landless)	Labor work in watershed activity, construction and bunding works and Plantation works				

6. Quantitative parameters of impacts

i. Improvements in water table/water availability	275 bores; up to April water will be available for 50 bores, 25 open wells rejuvenated, 2-3m increase in ground water level, 150 new bore wells dugged
ii. Additional area under cultivation/horticulture/ Afforestation	300 acres sugarcane, increase 100 acres of sugarcane area 25 acres mango developed and bearing fruits, forest species plantation pongamia, eucalyptus and sisu 1000 plants each as house hold and border plantation.
iii. Changes in cropping pattern and intensity	Charged from dry crop to sugarcane, horticulture and vegetable crops
iv. Changes in agricultural productivity	30% crop yield increase pigeon pea from 2 bags increased to 4-5 bags/acre
v. Changes in fodder & fuel wood availability	Sufficient fodder availability
vi. Changes in size and character of livestock holdings	Increased no of cattle's and milk yield improved additional 150litre per day.
vii. Status of grazing land & their carrying capacity	Slightly improved, open grazing
viii. Employment generated due to implementation of project	With improved irrigated crop, horticulture and vegetable crops and dairy activity work increased employment
ix. Change in household category,	Additional income increased up to 50%

total, & source-	
x. Freedom from Debt and reduction in degree for dependence of money lenders (case studies)	Bank loan only, no money lender
xi. Reduction in out-migration (case studies)	No migration
xii. Reduction in drought vulnerability of the watershed	Water availability increased and sugarcane area increased. Drought vulnerability protection is for one year
xiii. Detailed case studies of specific farmers impacted by the project	Sugarcane cultivation has become more enumerative due to water availability.
xiv. Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- Repair of CDs, Mini PT's and LBS structure needed to improve the efficiency of structure for higher benefit.
- Silt removal is needed to improve the water percolation and ground water recharge in CDs and PTs.
- Good ground water improvement 2-3m increases in water level in wells and bore wells.
- Additional 150 bore wells dugged and rejuvenated 25 old wells improved water availability for irrigating crops like sugarcane, horticulture and vegetables production.
- Milk availability increased and income from agriculture and animal husbandry improved family financial status.

8. Observations and Comments by Evaluators:

- Masonry Check dam (apron damaged)
- Masonry, size -> body wall 9m ht 1.3m, ->750m^3
- Sugarcane crop is seen just side by 4 wells, 4 beneficiaries – 5ft-20ac
- Apron wall is damaged due to more height of check dam

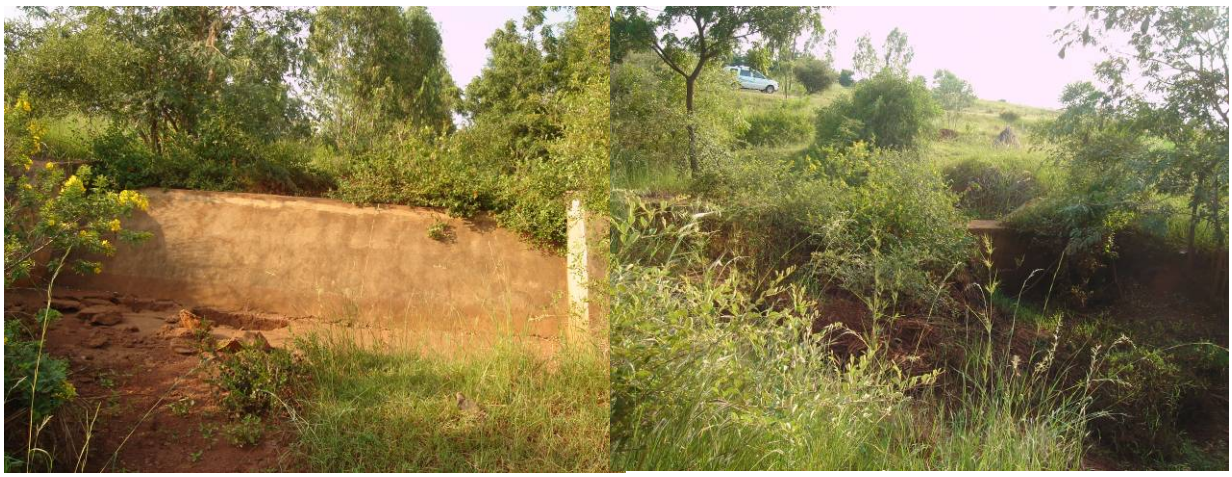


Fig: Masonry check dam apron damaged and full of silt plants and shrubs needs attention for better performance.

Impact Assessment Report
DOODGONDA Watershed, DPAP – IV batch
MANOOR Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

i. Name of the Scheme:	DPAP – IV Batch
ii. Name of the watershed:	Doodgonda
iii. Names of villages in the Watershed:	Doodgonda
iv. Villages/Mandal/District:	Doodgonda/Manoor/Medak
v. Name and Address of PIA:	READS (NGO)
vi. Total area of the watershed:	500 ha

2. Ownership pattern of land:

i. Community land (ha)	
ii. Government land (ha)	100
ii. Private land (ha)	380
v. Forest land (ha)	
v. Others	20

3. Verification financial and other Records

i. Total cost:	Approved: Rs. 14.35 lakhs	Spent: Rs. 14.24 lakhs
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes, CDs: Nil, PTs: 8, RFDs/LBS: 34, Field Bunding: 364ha, CCTs: 4.5 km, Sunken pits: 87	
iv. Whether watershed committees exits	Yes, Chairman: B.Mallappa, President: C.H. Bhoji Reddy, Secretary: Venkataram Reddy	
v. if exists, activities of the committees	Not active	

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA: Nil – Money / Fund was not allotted for the activity.

5. Qualitative parameters of impacts

i. Functioning of village level institutions	No. of UGs		No of SHGs		WC members:11
	Before	After	Before	After	Male:7
	8	8	10	10	Female:4
ii. Records of meetings properly updated	WC: Weekly as work progress and when required. WA: once in 2 to 3 months.				
iii. Liaison with scientific institutions established	ICRISAT, Ralegaon Siddi, one time once committee members also.				
iv. Watershed Development Fund collected?, and its utilization	10% Rs.1,25,000				
v. Self Help Groups	No:		Revolving fund: Rs.80000		
vi. V.O functioning:			Savings:		
vii. Utilization of loans:	Sheep rearing, Milk buffaloes, general merchant shops.				
viii. Bank linkages established:	SBI Narayankhed				
ix. Planned CPRs sustainable & equitable development	CPRs converted to pattas and field bunding and RFDs were done. Teak plantation, stylo was done.				
x. Benefits to weaker sections (women, dalits and landless)	Labor wages in project				

6. Quantitative parameters of impacts

i. Improvements in water table/water availability	Open wells operation: 20; Bore Wells: 55 (deep: 120-140 feet) Bore wells success is mostly due to WS and also due to manjeera river back water.
ii. Additional area under cultivation/horticulture/afforestation	200 acres additional area brought under cultivation. Teak plantation in farmers' fields to the extent of 5 acres, but no sustainable cultivation leading to failure.
iii. Changes in cropping pattern and intensity/ double cropping	GG, BG, PP, Sorghum, Rabi Sorghum, Chickpea, Safflower, Potato & Onion. Under bore wells
iv. Changes in agricultural productivity	30% yield increase in crops due to technology improvements & watershed.
v. Changes in fodder & fuel wood availability	More crop production increased availability of fodder and wood.
vi. Changes in size and character of livestock holdings	Increase livestock no increased milk production additionally about 100liter
vii. Status of grazing land & their carrying capacity	Improved-open grazing in CPR
viii. Employment generated due to implementation of project	Employment is sufficient labor were brought from surrounding village for operations.
ix. Change in household category, total, & source-	Improved in house hold income to 35-40%

x. Freedom from Debt and reduction in degree for dependence of money lenders (case studies)	Reduced completely and approaching SBI Narayankhed for loans.
xi. Reduction in out-migration (case studies)	25 to 30% due to drought this year only season 12% regular migration due to higher income in Hyderabad.
xii. Reduction in drought vulnerability of the watershed	Drought tolerance is there for agriculture production, but market problems are there for potato & onion.
xiii. Detailed case studies of specific farmers impacted by the project	1. Venkata Rami Reddy after PT was constructed; his bore supports 10 acres of commercial crops.
xiv. Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- Percolation tanks needs removal of silt needs removal to improve the percolation of water.
- Improved stored moisture conservation in soil due to field bunding and good crop yields.
- CCTs helped in recharging the ground water levels in wells and bore wells.
- Needs repair of RFDs for better performance.
- SHG's made good performance in utilizing the funds
- Plantation of forest species is good with 30% survival

8. Observations and comments by evaluators:

- Percolation tank in the valley near road & hillock size about 4000 m^3 and about water stored.

- Location of the PTs is good and good mount of water stored in it. It is in the valley. Downside plain lands are there. Four open wells, six farmers & area benefited about 15 acres. Paddy is grown under irrigation.

- Overall improvement in the water availability in wells and bore wells. Increased area under cultivation and improved crop production benefited farmers.

- No dependency on local money lenders and linkage to bank helped farmers in purchasing inputs and agriculture operations timely.

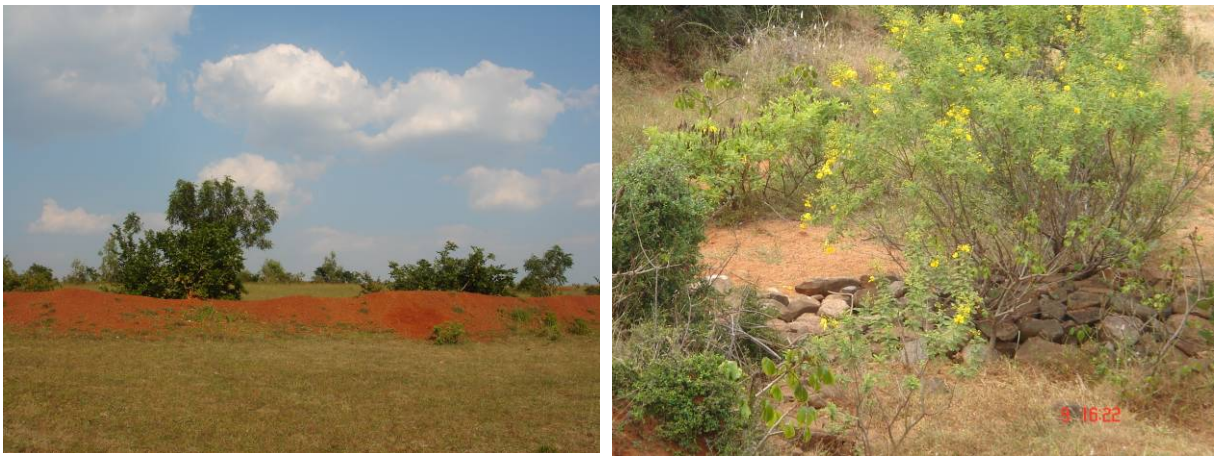


Fig: Bunding and CCT work helped in improved GW level and loose boulder structure needs

Fig: Meeting with farmers and committee members during impact assessment

Impact Assessment Report
GOVINDAPUR Watershed, DPAP – IV batch
ZAHEERABAD Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I. Name of the Scheme:	DPAP – IV Batch
II. Name of the watershed:	Govindapur
III. Names of villages in the Watershed:	Govindapur
IV. Villages/Mandal/District:	Govindapur/Zaheerabad/Medak
V. Name and Address of PIA:	HELP (NGO)
VI. Total area of the watershed:	500 ha

2. Ownership pattern of land:

i. Community land (ha)	
ii. Government land (ha)	50 ha
iii. Private land (ha)	450 ha
iv. Forest land (ha)	
v. Others	

3. Verification financial and other Records

i. Total cost:	Approved: 14.71 lakhs	Spent: 14.6 lakhs
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes, CDs: 3; Min PTs: 16; RFDs:48; Bunding: 300 acre; CCT:15ha; sunkenpits;60, Afforistation;65ha, Horticulture;28ha	
iv. Whether watershed committees exits	YES, Chairman: Sri Sitaram, President: Sri Manikyappa, Secretary: Sri Narayana	
v. if exists, activities of the committees	No	

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

Two percolation tanks at the cost of Rs. 50,000/- as an entry point activity was taken up.

1. **Qualitative parameters of impacts**	**5.**

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 12
	Before	After	Before	After	Male:8
	25	-	20	20	Female: 4
ii. Records of meetings properly updated	WC: once in a month WA: once in 3 months				
iii. Liaison with scientific institutions established	Ralegaon Siddhi; ICRISAT				
iv. Watershed Development Fund collected? and its utilization	Rs.60,000/-				
v. Self Help Groups	No:		Revolving fund: Rs.50000		
vi. V.O functioning:			Savings:		
vii. Utilization of loans:	Vegetable business, milk animals.				
viii. Bank linkages established:	Yes established – 15 active, APGVB Zaheerabad				
ix. Planned CPRs sustainable & equitable development	Bunding, teak plantation, gooseberry, mango				
x. Benefits to weaker sections (women, dalits and landless)	Labor work during project in bunding and construction, Nursery and Plantation work				

6. Quantitative parameters of impacts

i. Improvements in water table/water availability	Year round water availability with bore walls 2-3 m increase in water level.
ii. Additional area under cultivation/horticulture/afforestation	Five plants/ farmer (mango, coconut) Five acres mango total 28ha horticulture plantation 40% survival
iii. Changes in cropping pattern and intensity	Sugarcane in less area; 50% area increase under sugarcane due to increase water. Major sugarcane, ginger potato, pigeon pea, sorghum, bajra
iv. Changes in agricultural productivity	Increased from 30t/acre to 40t/acre along side increase area
v. Changes in fodder & fuel wood availability	Increased sufficient
vi. Changes in size and character of livestock holdings	150 milking animals increase and increased the milk yield of 300 liter additional per day
vii. Status of grazing land & their carrying capacity	Sufficient, open grazing
viii. Employment generated due to implementation of project	Increased employment due to many activity of horticulture, sugarcane and vegetable crop cultivation. Dairy activity
ix. Change in household	Improved 50% income to every household

category, total, & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	No dependency only through bank loans
xi. Reduction in out-migration (case studies)	Construction walls continue to go out for employment and no other migration
xii. Reduction in drought vulnerability of the watershed	Improved and withstand for an one year due to improved water source
xiii. Detailed case studies of specific farmers impacted by the project	Enclosed
xiv. Photographs showing work + its impact	Enclosed

7. **Learnings and process documentation** (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- Good ground water availability due to many structures and good moisture availability with field bunding increased crop yields and benefitted a lot to farmers. Sugarcane and ginger cultivation benefitted farmers with higher returns.
- Afforestation with teak, pongamia, eucalyptus, sisu plantation for common land and borders of fields and also stylo grass as a fodder helped a lot to improve common land
- Horticulture plantation with mango plants benefitted a farmer a lot
- Dairy activity with higher milk production has given increased income to family.
- Repair of check dams and percolation tank silt removal is required for improved ground water recharge.

8. **Observations and comments by evaluators:**

- Mango orchard good crop
- check dam -> BWL-12m, ht-1m, L-30m -> 350m^3 -> water -> 100m^3
- Check dam is good. About 100m^3 water is stored. 5 wells with 10 beneficiary farmers, area cultivated is about 40acres, GWL increase in about 10 feet. Lots of bushes in check dam.
- Open well. GWL is just about 2m below from surface good water and sugarcane crop under cultivation.

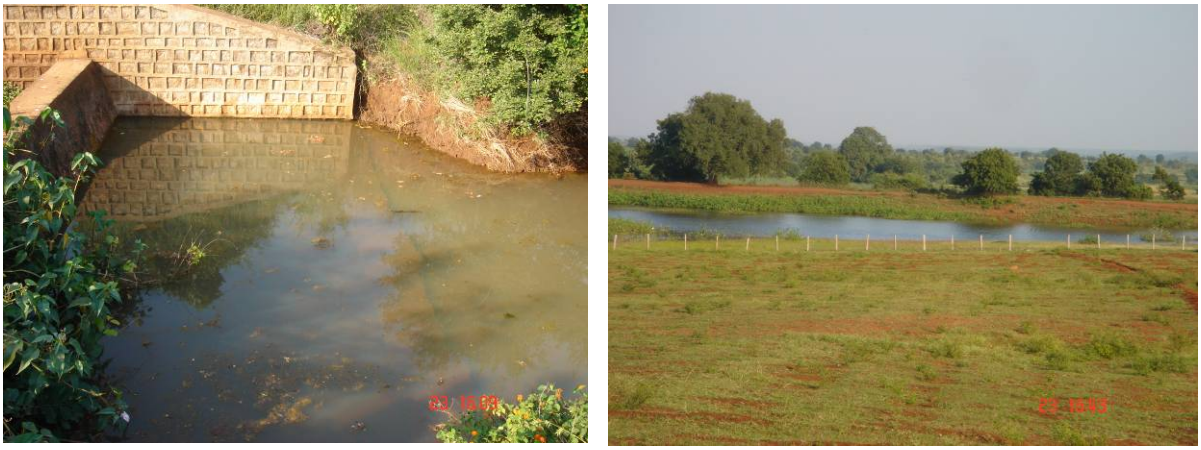


Fig: Check dam and percolation tank with good water stored for improved GWL in farmers wells and bore wells

Impact Assessment Report
HOTI B1 Watershed, DPAP – IV batch,
ZAHEERABAD Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

i. Name of the Scheme:	DPAP – IV Batch
ii. Name of the watershed:	Hoti-B-1
iii. Names of villages in the Watershed:	Hoti-B-I
iv. Villages/Mandal/District:	Hoti-B-I/Zaheerabad/Medak
v. Name and Address of PIA:	HELP (NGO)
vi. Total area of the watershed:	500 ha

2. Ownership pattern of land:

vi. Community land (ha)	
vii. Government land (ha)	100 ha
viii. Private land (ha)	400 ha
ix. Forest land (ha)	
x. Others	

3. Verification financial and other Records

vi. Total cost:	Approved: 14.66 lakh	Spent: 14.65 lakh
vii. Expenditure incurred as per guidelines	Yes	
viii. Works executed as per Records	Yes, CDs: 3; PTs: 20; RFDs:30; LBS: 45; Bunding: 300 acres; CCT: 4km, sunken pits ;45	
ix. Whether watershed committees exits	YES, Chairman: G.Tukka Reddy, President: Late Devji, Secretary: J Sayappa	
x. if exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA: Soak pits (25), percolation tank with Rs 50,000.

5. Qualitative parameters of impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 12
	Before	After	Before	After	Male:8
	17	17	20	27	Female: 4
ii. Description					
iii. Records of meetings properly updated	WC: once in a month WA: once in 3 months				
iv. Liaison with scientific institutions established	Ralegaon Siddhi; ICRISAT; Kamalapur Mulugu Forest research				
v. Watershed Development Fund collected?, and its utilization	Rs.40,000/-				
vi. Self Help Groups	No:		Revolving fund: Rs. 140000		
vii. V.O functioning:			Savings:		
viii. Utilization of loans:	Milch animals; implements				
ix. Bank linkages established:	APGVB Zaheerabad				
x. Planned CPRs sustainable & equitable development	Teak plantation, 10000 in two years to individual farmers; cashew – 5000, coconut, sisu, teak, eucalyptus				
xi. Benefits to weaker sections (women, dalits and landless)	Labor work in different activity, nursery, plantation				

5. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	3 to 5 m increased GWL, rejuvenated old wells Bore wells: 100m earlier; now after watershed 50-60m new bore wells 250 No.
ii. Additional area under cultivation/horticulture/afforestation	Mango plants 600acres additional area brought under cultivation
iii. Changes in cropping pattern and intensity	Bajra, sorghum, pigeon pea, green gram, black gram.
iv. Changes in agricultural productivity	60% increase in agricultural productivity
v. Changes in fodder & fuel wood availability	Improved
vi. Changes in size and character of livestock holdings	Increased milking animals 50 no and increased milk production of 150 liter per day
vii. Status of grazing land & their carrying capacity	Improved and open grazing in common land
viii. Employment generated due to implementation of project	Employment generated in many agriculture, horticulture and dairy activity
ix. Change in household	30-40% improved income in household for all

category, total, & source-	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans mostly depended. Reduced approaching money lenders
xi. Reduction in out-migration (case studies)	No migration
xii. Reduction in drought vulnerability of the watershed	Increased water availability enhanced support to agricultural productivity
xiii. Detailed case studies of specific farmers impacted by the project	All bore well supported farmers gained sustainability due to increase water availability
xiv. Photographs showing work + its impact	enclosed

6. **Learnings and process documentation** (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- Increased ground water availability in wells and bore wells supported farmer for growing good crops and get higher profits.
- Plantation of teak trees, mango and other forest species benefitted farmers a lot and grown near their house and boundaries of their fields 40% survival.
- Dairy activity improved the additional income of house hold.
- SHGs have done good financial management for improved lively hood activities.
- Need repair of CD and percolation tank silt removal for improving the storage and percolation rate.
- Earthen bunding improved soil moisture conservation for increased crop yields.
- Sunken pits and rock fill dams helped in improving ground water level and checking erosion.

7. Observations and Comments by Evaluators:

- Percolation tank -> 15 wells -> 25 farmers -> 30 acres -> GWL ->20ft. Outlet is left base and gully in deepening with run off flow and PT capacity is not effectively utilized. Less storage capacity due to non scientific construction and base outlet.

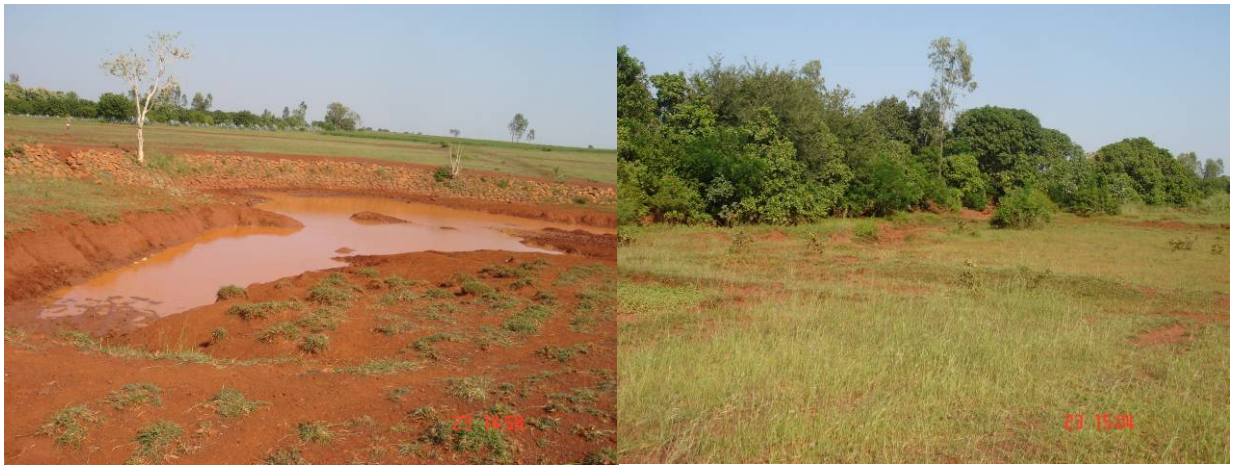


Fig: Percolation tank with siltation and plantation of teak and forest species in common land

Fig: Meeting with watershed committee and farmers during the focus group meeting at village

Impact Assessment Report
JAMBGI (B) Watershed, DPAP – IV batch
KANGTI Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

i. Name of the Scheme:	DPAP – IV Batch
ii. Name of the watershed:	Jambgi (B)
iii. Names of villages in the Watershed:	Jambgi (B)
iv. Villages/Mandal/District:	Jambgi(B)/Kangti/Medak
v. Name and Address of PIA:	SCOPE (NGO)
vi. Total area of the watershed:	500

2. Ownership pattern of land:

i. Community land (ha)	
ii. Government land (ha)	
iii. Private land (ha)	500 ha
iv. Forest land (ha)	
v. Others	

3. Verification financial and other Records

i. Total cost:	Approved: Rs. 14.65 lakhs	Spent: Rs. 14.65 lakhs
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes, CDs: 3; PTs: 5; RFDs/LBS: 56; Field Bunding: 50 acre; CCT: 9km length; Sunken pits: 52, forestry=14ha, horticulture;17ha	
iv. Whether watershed committees exits	YES, Chairman: G.Sailoo, President: Mogal Reddy, Secretary: Ch.Madava Reddy	
v. If exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA: Community hall used for nursery children was constructed. This is being used for regular SHG (Mahila) meetings also.

5. Qualitative parameters of impacts

i.	Functioning of village level institutions	No. of UGs		Nol of SHGs		WC members:
		Before	After	Before	After	Male:
		15	30	10	20	Female:
ii.	Describe					
iii.	Records of meetings properly updated	WC: Once in 15 days or as and when required. WA: once in 3 months.				
iv.	Liaison with scientific institutions established	Ralegaon Siddi; Maharashtra – Anna Hajare, ICRISAT, Zaheerabad model watershed Shekapur				
v.	Watershed Development Fund collected?, and its utilization	Rs.100000 plus				
vi.	Self Help Groups			Revolving fund: Rs.50000		
vii.	V.O functioning:			Savings:		
viii.	Utilization of loans:	Buffaloes for milk production, sheep rearing.				
ix.	Bank linkages established:	APGVB Kangti				
x.	Planned CPRs sustainable & equitable development	Mango, tamarind, shoobabul plantation. Further maintenance was not given to the committee as there were given to SC patta farmers				
xi.	Benefits to weaker sections (women, dalits and landless)	Labor work in different activities				

6. Quantitative parameters of impacts

i.	Improvements in water table/water availability	Open wells: nil; Bore wells: 5-8 before, 150-160 now after watershed. Bore water available until may except when rains were low & bad, after those season till April- may
ii.	Additional area under cultivation/horticulture/afforestation	Double crop: additional 20% area increase. Total area (1750 acres). Each farmer got 5 to 10 plants to sow on bunds.
iii.	Changes in cropping pattern and intensity	100% increase and 200% crop intensity. Sorghum, Pigeonpea, green gram, black gram
iv.	Changes in agricultural productivity	Paddy, Sugarcane, Maize, Soybean -> before watershed. Sprinkler used for cotton crop. 50% increase in crop yields with bore irrigation/ 10% increase in dry lands -> after watershed.
v.	Changes in fodder & fuel wood availability	good
vi.	Changes in size and character of livestock holdings	10% increase in livestock only, but because of fodder increase no grazing land hinders' growth of livestock.
vii.	Status of grazing land & their carrying capacity	Sufficient-open grazing

viii. Employment generated due to implementation of project	Employment increase due to works of agriculture, horticulture and dairy activity
ix. Change in household category, total, & source-	40% improvement in household income
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans defaulted, hence agricultural loans were not given, but 50% loans depend on money lenders.
xi. Reduction in out-migration (case studies)	Migration is only for skilled labor for higher income, but no migration of farm labor.
xii. Reduction in drought vulnerability of the watershed	Vulnerability is still continuing with stand for six months since last 3 yrs drought continues.
xiii. Detailed case studies of specific farmers impacted by the project	enclosed
xiv. Photographs showing work + its impact	enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

i. WDF may be utilized for repair & maintenance of existing structure.
ii. Good improvement in ground water level new bore wells for additional cropping benefitted farmers.
iii. Dairy activity benefitted for additional income and plantation of teak tree is benefitted farmers.

8. Observations and comments by evaluators:

- Masonry Check dam -> BWL-20m, ht-1m, length 40m= 500m^3.
- CCT near hillock.
- PT -> near hillock ->30m*3m*30m = about 1500m^3 -> 100m^3 water stored.
- Check dam -> 8 bores, 10 farmers, 30 acres benefited -> paddy & maize under irrigation. Good improvement in Groundwater.
- CCT seen near hillocks. Still they are serving the purpose.
- PT -> located near hillock. Good depth & effective in conserving soil and water. There are no wells near by but there are bore wells about 200m away.

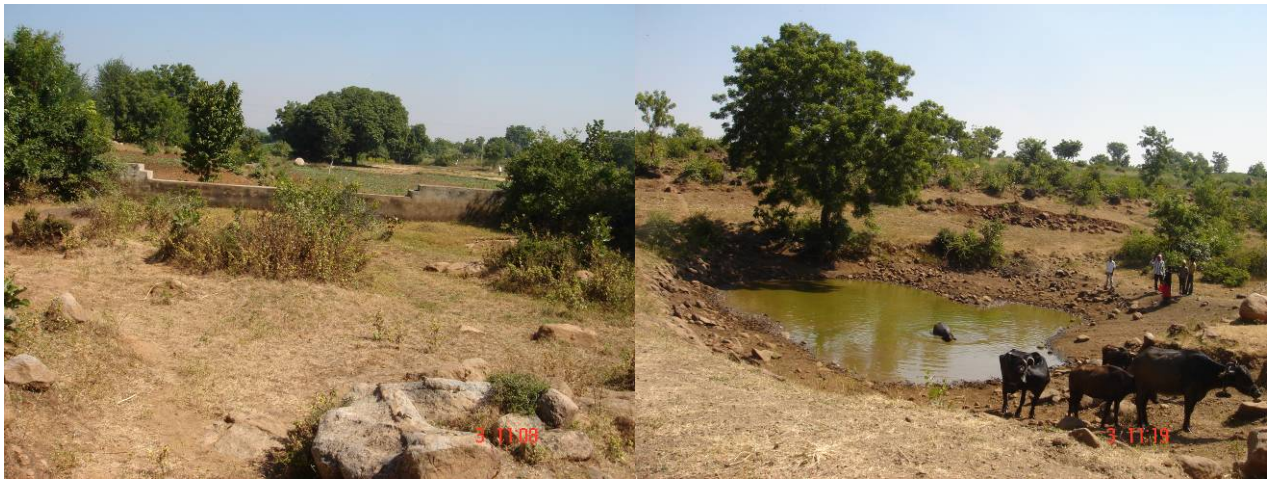


Fig: Percolation tank and check dam with good water availability for ground water recharge.

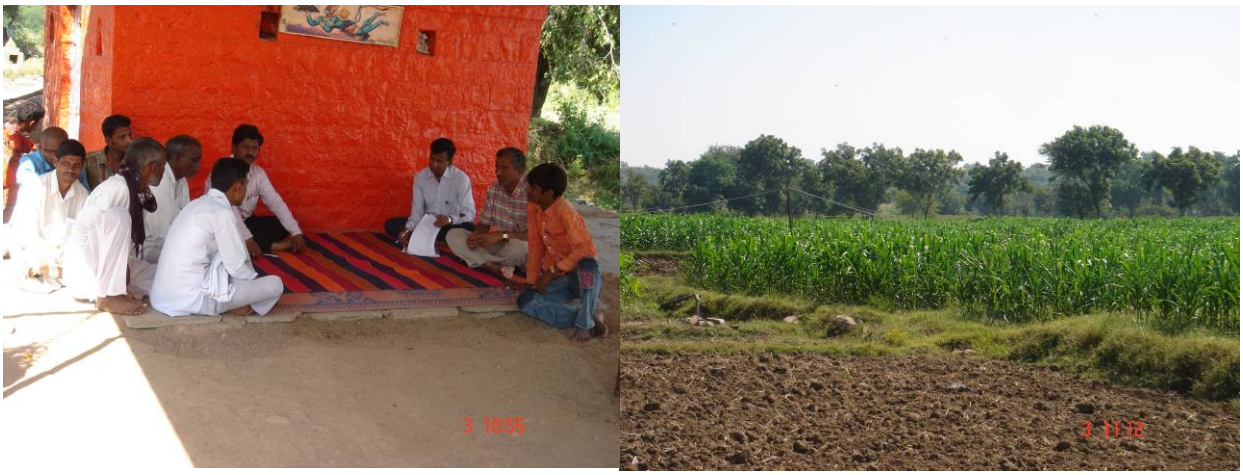


Fig: Focus group meeting with farmers and watershed committee and good crop of maize with bore well water

Impact Assessment Report
JAMBGI (K) Watershed, DPAP – IV batch
KANGTI Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

i. Name of the Scheme:	DPAP – IV Batch
ii. Name of the watershed:	Jambgi-K
iii. Names of villages in the Watershed:	Jambgi-K
iv. Villages/Mandal/District:	Jambgi-K/Kangti/Medak
v. Name and Address of PIA:	SCOPE (NGO)
vi. Total area of the watershed:	500

2. Ownership pattern of land:

i. Community land (ha)	
ii. Government land (ha)	
iii. Private land (ha)	500 ha
iv. Forest land (ha)	
v. Others	

3. Verification financial and other Records

i. Total cost:	Approved:14.65 lakhs	Spent:14.6 lakhs
ii. Expenditure incurred as per guidelines		
iii. Works executed as per Records	Yes, CDs: 4; PTs: 11; RFDs/LBS: 77; Field Bunding: 550 acre; CCT: 8500mts; Sunken pits: 156	
iv. Whether watershed committees exits	YES, Chairman: D.Vittal Rao, President: M.Ganga Ram, Secretary: Md.Ammin	
v. if exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA: Bus shelter for villagers, 0.5 km away from the village after donating place by villager (Vittal Rao) for construction of building.

5. Qualitative parameters of impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 11
	Before	After	Before	After	Male:9
	-	5	-	10	Female: 2
ii. Describe					
iii. Records of meetings properly updated	WC: monthly once WA: once in 3 months to decide the works.				
iv. Liaison with scientific institutions established	Ralegaon Siddi; Maharashtra , ICRISAT Hyderabad				
v. Watershed Development Fund collected?, and its utilization	Rs.97000				
vi. Self Help Groups	No:		Revolving fund: Rs.5000		
vii. V.O functioning:			Savings:		
viii. Utilization of loans:	Buffaloes for milk, goat rearing.				
ix. Bank linkages established:	APGVB Kangti				
x. Planned CPRs sustainable & equitable development	PTs and bunding was done to conserve water, plantation of teak and eucalyptus plants				
xi. Benefits to weaker sections (women, dalits and landless)	Labor work in various watershed works				

6. Quantitative parameters of impacts

i. Improvements in water table/water availability	No open wells; Borewells: 200 Bore failure rate earlier 75%; after watershed failure rate is 50%; failure of bore only in May or June, otherwise zero failure. Bore water improvement only helped, no water tanks or no open wells, only after watershed paddy or sugarcane and second crop of dry land crops helped the farmer.
ii. Additional area under cultivation/horticulture/ afforestation	Additional 50 acres brought to cultivation. Horticulture plantation (5 to 10 plants/farmer) Mango plantation/ teak/ agave/ eucalyptus. Mango and teak survived better CCI in farmers' fields.
iii. Changes in cropping pattern and intensity	Paddy, sugarcane, sunflower, maize, cotton, greengram, black gram, pigeonpea.
iv. Changes in agricultural productivity	P: 20-30 Q/acre; Sunflower:6-8 Q/acre; M:25-30 Q/acre; cotton:7-8 Q/ha
v. Changes in fodder & fuel wood availability	Better
vi. Changes in size and character of livestock holdings	Increased no of 50 new dairy animals with additional milk yield of 100 liter per day
vii. Status of grazing land & their carrying capacity	Improved and sufficient with open grazing

viii. Employment generated due to implementation of project	Employment increase for four years of project activities.
ix. Change in household category, total, & source-	40% improved household income
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	APGV Bank, Kangti facilities available but delayed disbursement due to pressure from 33 village and farmers depend on money lenders 36% interest.
xi. Reduction in out-migration (case studies)	55 out migration for short periods later reduced from 50 % to 60% migration.
xii. Reduction in drought vulnerability of the watershed	Can withstand for one crop season due to improved bore well irrigation.
xiii. Detailed case studies of specific farmers impacted by the project	a. Kishan Rao, before watershed no water availability, after watershed bores have been good and 9 acres developed paddy crop. b. Balagouda, S/o perugouda, near percolation tank has helped his bore with good water and two crops of paddy and sunflower.
xiv. Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

i. Farmers and committee are requesting for repair of watershed structures which can help the effectiveness of structure for another five yrs.

ii. Enhance number of check dams 4 PTs, to enhance water conservation in the village in the absence of any big tanks.

8. Observations and Comments by Evaluators:

- PT -> about 1500 m3 size, 500 m^3 water stored.
- Masonry check dam -> 10m, 1.5m, 40m = 400 m^3
- PT -> about 2000 m^3 capacity, about 50 m^3 water stored.
- PT -> good PT, good amount of water stored -> three bore wells, three farmers and 11 acres are benefited. Sugarcane, maize & paddy are grown under irrigation. GWL->improved.
- Check dam -> no water in it, three bores, three farmers & about nine acres benefited. Quantity of work is not good. Final finishing of body wall and apron is not good. Apron wall is slightly damaged.PT -> located near small hillock. Three bores, three farmers and six acres benefited.

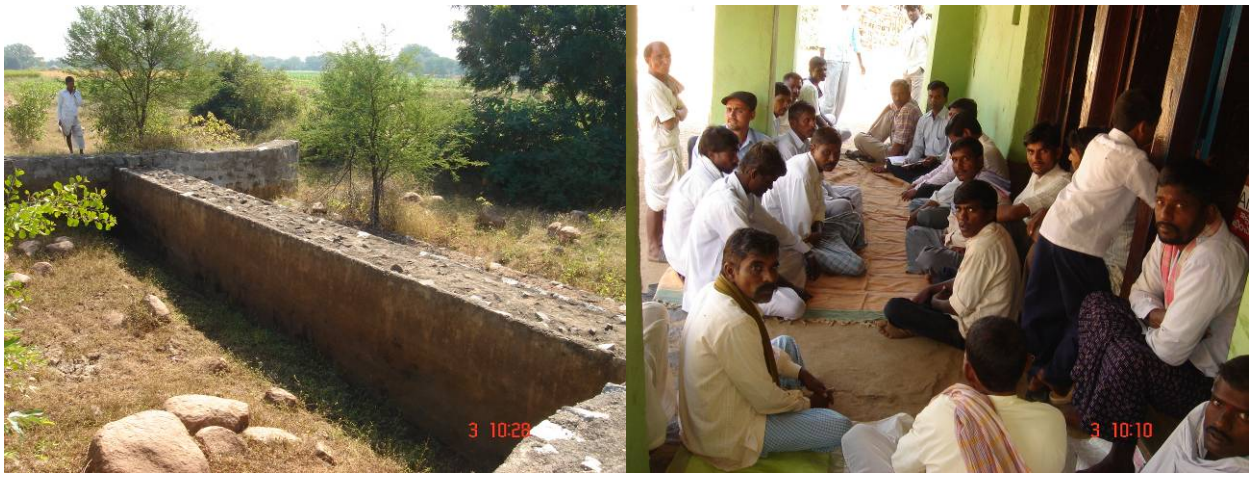


Fig: check dam with improper head wall height and meeting with farmers and watershed committee

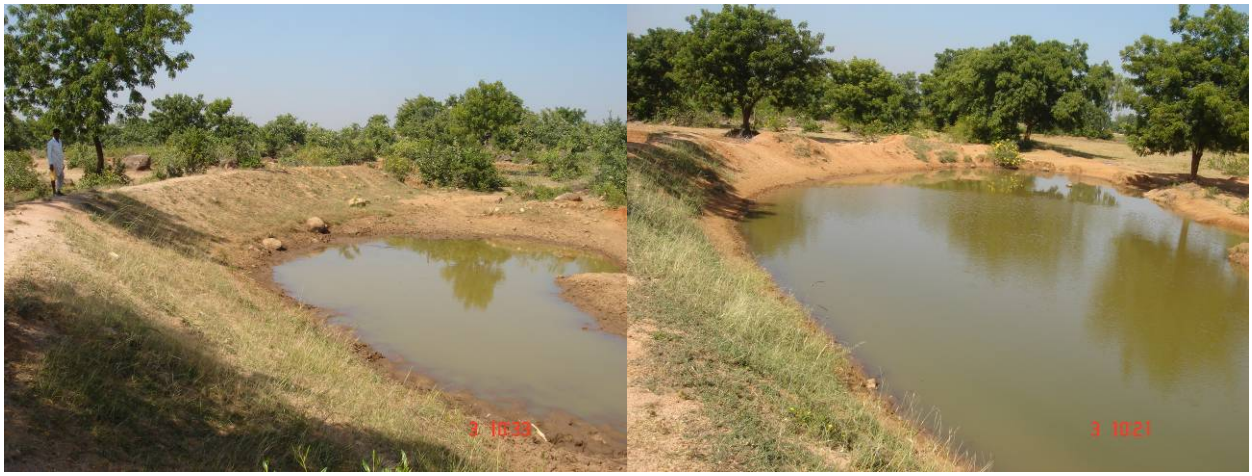


Fig: Percolation tanks with good water availability for ground water recharge

Impact Assessment Report
JUKAL Watershed, DPAP – IV batch
NARAYANKHED Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

i. Name of the Scheme:	DPAP – IV Batch
ii. Name of the watershed:	Jukal
iii. Names of villages in the Watershed:	Jukal
iv. Villages/Mandal/District:	Jukal/Narayankhed/Medak
v. Name and Address of PIA:	READS (NGO)
vi. Total area of the watershed:	500 ha

2. Ownership pattern of land:

i. Community land (ha)	
ii. Government land (ha)	
iii. Private land (ha)	500 ha
iv. Forest land (ha)	
v. Others	

3. Verification financial and other Records

i. Total cost:	Approved:10.83lakhs	Spent:10.8lakhs
ii. Expenditure incurred as per guidelines		
iii. Works executed as per Records	Yes, CDs: Nil; Mini PTs: 13; RFDs/LBS: 15; Field Bunding: 650 acre; Sunken pits; 8 Politically active village.	
iv. Whether watershed committees exits	Yes, Chairman: P.Manohar Rao, President: Shamaiah, Secretary: Hanumaiah	
v. If exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)
EPA: Nil

5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 12
	Before	After	Before	After	Male:8
	10	10	10	13	Female: 4
ii. Describe					
iii. Records of meetings properly updated	WC: monthly once WA: once in six months				
iv. Liaison with scientific institutions established	Ralegan Siddhi, ICRISAT				
v. Watershed Development Fund	Rs.58,000 (55,000/- drawn) for repair works which is removed without any proper guidance.				

	collected?, and its utilization		
vi.	Self-Help Groups	No:	Revolving fund: Rs.50000 (10)
vii.	V.O functioning:		Savings:
viii.	Utilization of loans:	Used for domestic purpose	
ix.	Bank linkages established:	APGVB Narayankhed	
x.	Planned CPRs sustainable & equitable development	No works taken up	
xi.	Benefits to weaker sections (women, dalits and landless)	Labor work in watershed activities	

6. Quantitative Parameters of Impacts

a) Improvements in water table/water availability	Open wells: nil; Bore wells: 50-60 (depth is 65-70') Bore delivery of 0.5inch has increased to 1 inch water available up to march- April Poor maintenance and breach of all structures & works
b) Additional area under cultivation/horticulture/af forestation	4 acres additional area 10000 teak plantations were given to individual farmer.10 acre horticulture mango plantation
c) Changes in cropping pattern and intensity	Sugarcane, paddy, cotton, green gram, b.gram, and pigeon pea/ double cropping - intercropping
d) Changes in agricultural productivity	Paddy-10 to 25 Q/acre; cotton-10Q/acre; Sugarcane-35-40t/acre; 100% increase
e) Changes in fodder & fuel wood availability	Improved
f) Changes in size and character of livestock holdings	Additional cattle's for milk production increased 100 liter per day additional milk production
g) Status of grazing land & their carrying capacity	Sufficient
h) Employment generated due to implementation of project	Watershed works helped to private employment during four years of work
i) Change in household category, total, & source-	35% of house hold income improved
j) Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans are getting delayed hence we are also depending on money lenders.
k) Reduction in out-migration (case studies)	Out migration is continuing for higher income (10% out migration, 50/500)
l) Reduction in drought vulnerability of the	It cannot be paid as direct effect however, yields increased hence we can get managed for one season.

watershed	
m) Detailed case studies of specific farmers impacted by the project	1.Auti Krishnaiah-2 acres paddy, he is cultivating after percolation tank 2.Jangam Bhadraiah-having PT which helped to improve water in dried bore wells (10) 3.Kandagan Dattaiah- PTs- supported dried bore wells.
n) Photographs showing work + its impact	enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

i. WDF maintenance of damaged watershed structures is required.

ii. Most of structures are breached needs repair.

iii. Silt removal is very much essential.

iv. Teak plantation given a good benefit to farmers

v. Crops yields are improved with improved soil moisture status in fields due to bunding.

8. Observations and Comments by Evaluators:

- PT -> in Jangam Badraiah land - about 2000 m3 size
- PT -> in Ramaiah field – small size, about 200 m^3.
- PT -> surrounding area is having scrub bushes. There are bore wells little away from structure. Five bores, eight farmers, about 15acres benefited siltation and dried algae seen. Sugarcane and paddy are grown.
- PT -> small structures. Three bore wells, three farmers, eight acres under cultivation. Sugarcane & paddy crops are grown.

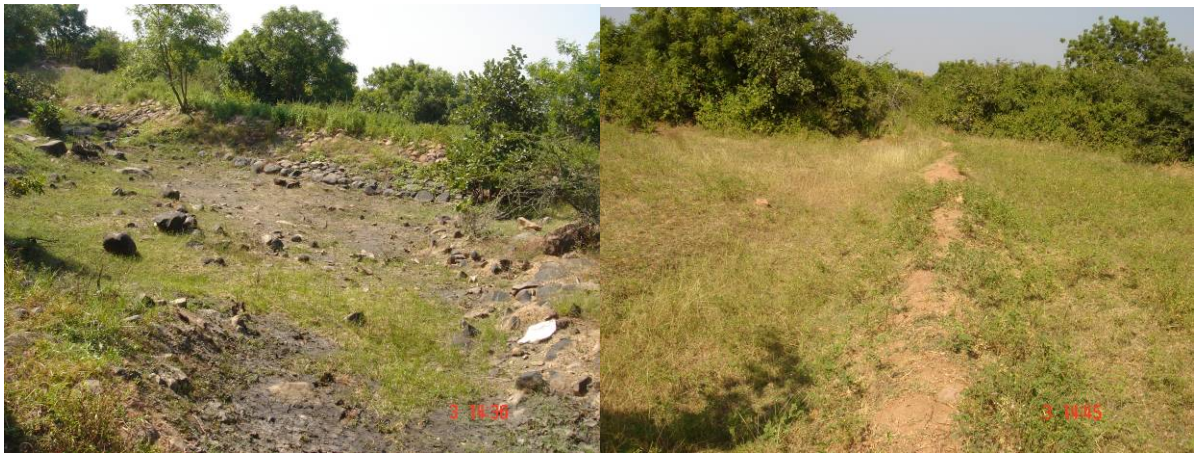


Fig: Percolation tank and field bunding helped in moisture conservation and ground water recharge

Impact Assessment Report
KUPPANAGAR Watershed, DPAP – IV batch
JHARASANGAM Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch 1997-98 to 2002-03
II.	Name of the watershed:	Kuppanagar
III.	Names of villages in the Watershed:	Kuppanagar
IV.	Villages/Mandal/District:	Kuppanagar/Jharasangham/Medak
V.	Name and Address of PIA:	DOVE(NGO)
VI.	Total area of the watershed:	500 ha

2. Ownership pattern of land:

I.	Community land (ha)	
II.	Government land (ha)	100 ha
III.	Private land (ha)	400 ha
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other Records

I.	Total cost:	Approved:Rs.14.75 Lakhs	Spent:14.65 Lakhs
II.	Expenditure incurred as per guidelines	yes	
III.	Works executed as per Records	Yes, CDs: 5; PTs: 5; RFDs: 40; bunding: 125 acres, sunken pits-140, CCTs-5.8ha Desilting of drainage channels – 1500mts	
IV.	Whether watershed committees exits	Yes, Chairman: S.Manaiah, President: S.Sankar, Secretary: G Narsimhulu	
V.	if exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

Temple slab was put to with an expenditure of Rs.50,000/- as an entry point activity.

5. Qualitative parameters of impacts

I.	Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 11
		Before	After	Before	After	Male:7
		15	12	20	23	Female: 4
	Describe					
II.	Records of meetings properly updated	Once in a month and when required basing on issues to be discussed.				
III.	Liaison with scientific institutions established	Ralegaon Siddhi, ICRISAT, SAV, KVK				
IV.	Watershed Development Fund collected?, and its utilization	Rs.80000/-				
V.	Self Help Groups	No:10		Revolving fund: Rs.50000		
VI.	V.O functioning:	Non-functioning		Savings:		
VII.	Utilization of loans:	Poultry development, Backyard vegetable cultivation				
VIII.	Bank linkages established:	Syndicate bank Jharasangam				
IX.	Planned CPRs sustainable & equitable development	Planted with sisu and eucalyptus and stylo grass helped to improve grazing status of the area.				
X.	Benefits to weaker sections (women, dalits and landless)	Labor work in all activity				

6. Quantitative Parameters of Impacts

I.	Improvements in water table/water availability	2-3m increase in water level,
II.	Additional area under cultivation/horticulture/afforestation	50 acres, mango; 20 acres yielding & teak 5000 plants survived- 110 acres Teak plantation Rs2000 per plant. 110 acre teak plantation newly cultivated.
III.	Changes in cropping pattern and intensity	Sugarcane, sorghum, pigeon pea, chickpea, green gram, black gram.
IV.	Changes in agricultural productivity	Sugarcane yield increase 30-40 average & 50 highest per acre
V.	Changes in fodder & fuel wood availability	Improved
VI.	Changes in size and character of livestock holdings	Increased in 100 no of dairy animals and additional milk yield of 150 liter per day
VII.	Status of grazing land & their carrying capacity	Sufficient availability and open grazing is improved
VIII.	Employment generated due to implementation of project	Employment created due to additional area of agriculture, plantation of teak and mango activity. dairy activity and SHGs lively hood activities supported additional

	employment.
IX. Change in household category, total, & source-	50% house hold income improved to all family
X. Freedom from Debt and reduction in degree for dependence of money lenders (case studies)	Yes-depend on bank
XI. Reduction in out-migration (case studies)	No migration at all
XII. Reduction in drought vulnerability of the watershed	Reduced to considerably one year protection is possible
XIII. Detailed case studies of specific farmers impacted by the project	Mr. Narasimha increased cultivated area of 12 acres and growing sugarcane. Yadaiah teak plantations 4000 plants
XIV. Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

i. Farmers are interested in teak and mango plantation if given they are interested to take care of development.

ii. Check dams' have been breached needs repair and removal of silt is required for proper functioning of CDs.

iii. Percolation tanks needs to desilting for improving the percolation for better ground water recharge.

iv. Plantation of teak and mango benefitted farmers a lot and good income with these activity.

8. Observations and Comments by Evaluators:

i. Teak plantations 5 acre, mango plantation 5ac, CCT 500 RM
ii. Check wall (masonry) -> Body wall – 11m, ht-1m, wid-0.6m -> 600 m^3
iii. Check dam (masonry) -> Body wall – 12m, ht-1.2m, wide-> 1000 m^3
iv. Four beneficiaries -> 4 wells -> 3ft GWL increased -> 25ac benefited
v. Five beneficiaries -> 5 wells -> 5ft GWL increased -> 20ac benefited

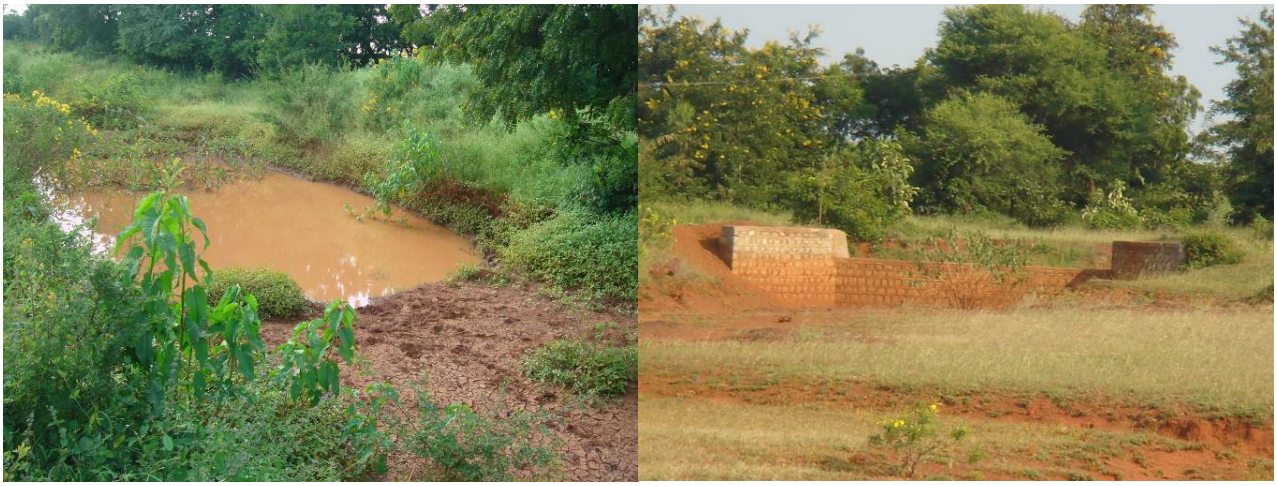


Fig: Sunken pit and check dam is supporting improvement in availability of water in wells and bore wells

Fig: Teak and mango plantation benefited a lot to many farmers with

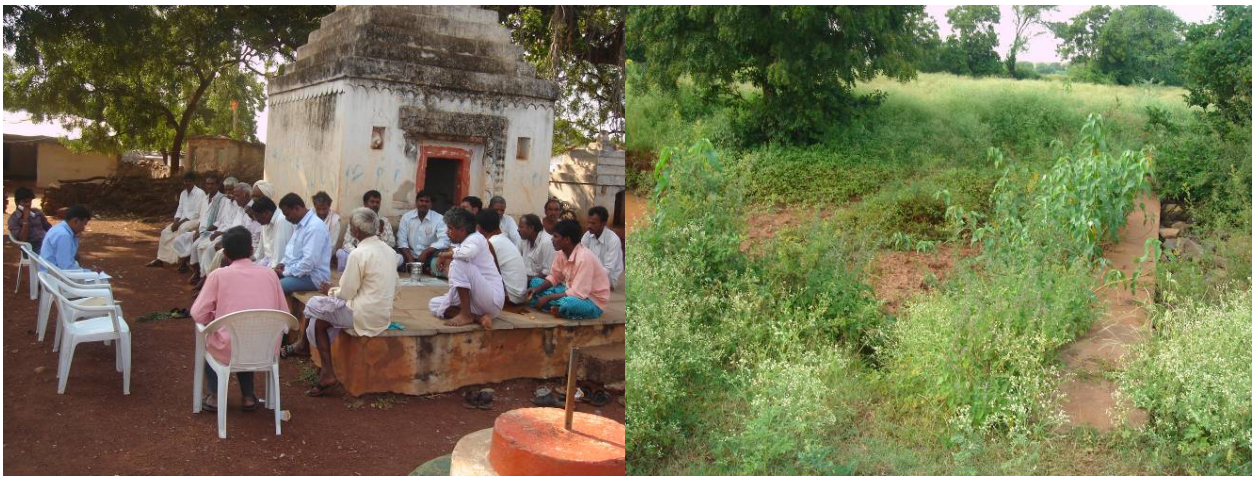


Fig: Focus group meeting with watershed committee and farmers. Cleaning and desilting of CDs is essential

Impact Assessment Report
MALIGI Watershed, DPAP – IV batch,
NYALKAL Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch
II.	Name of the watershed:	Maligi
III.	Names of villages in the Watershed:	Maligi
IV.	Villages/Mandal/District:	Maligi/Nyalkal/Medak
V.	Name and Address of PIA:	HELP(NGO)
VI.	Total area of the watershed:	500

2. Ownership pattern of land:

I.	Community land (ha)	
II.	Government land (ha)	
III.	Private land (ha)	500 ha
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other Records

I.	Total cost:	Approved:10.7 lakhs	Spent:10.65 lakhs
II.	Expenditure incurred as per guidelines	Yes	
III.	Works executed as per Records	YES, CDs: 8, RFD: 12., PTs;15, Sunken pits;20, field bunding=300 acre	
IV.	Whether watershed committees exits	YES, Chairman: Vittal Reddy A, Secretary: Late Vittal	
V.	if exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)
No, EPA

5. Qualitative parameters of impacts

I.	Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 12
		Before	After	Before	After	Male: 8
		10	10	10	12	Female: 4
II.	Records of meetings properly updated	Every month WC meeting will be held; once in 3 months WA meeting regularly records are updated				
III.	Liaison with scientific institutions established	Visited ICRISAT, Ralegaon Siddi				
IV.	Watershed Development Fund collected?, and its utilization	Yes; not known				
V.	Self-Help Groups	No:		Revolving fund: Rs.50000		
VI.	V.O functioning:			Savings:		
VII.	Utilization of loans:	Dairy animals, shops and agriculture inputs etc				
VIII.	Bank linkages established:	APGVB Narayankhed				
IX.	Planned CPRs sustainable & equitable development	Agave, Teak, Eucalyptus, Seethafal, not established properly				
X.	Benefits to weaker sections (women, dalits and landless)	Labor work of water shed activity				

6. Quantitative parameters of impacts

I.	Improvements in water table/water availability	Open wells: 40-50; Bore wells: Nil; 10-15 Bore wells established. Drinking water availability increased 2 months extra water availability June – December -> increased to march
II.	Additional area under cultivation/horticulture/afforestation	No additional increase in area.
III.	Changes in cropping pattern and intensity	No change. Green gram , groundnut, chickpea, sorghum, rabi;
IV.	Changes in agricultural productivity	Sorghum 4-5 bags.
V.	Changes in fodder & fuel wood availability	Not much
VI.	Changes in size and character of livestock holdings	Additional 50 dairy animals for milk production increased additional100liter every day
VII.	Status of grazing land & their carrying capacity	Improved
VIII.	Employment generated	Generated due to additional cropping and plantation and dairy activity.

	due to implementation of project	
IX.	Change in household category, total, & source-	30% of house hold income improved
X.	Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Reduced dependence and bank linkage is established
XI.	Reduction in out-migration (case studies)	Migration is there even now at the same level
XII.	Reduction in drought vulnerability of the watershed	Reduced 30% due to increased water availability for crop production
XIII.	Detailed case studies of specific farmers impacted by the project	enclosed
XIV.	Photographs showing work + its impact	enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

i. Big check dams are required; there is no use of smaller check dams.

ii. Enrich top soil by addition of day/slit from tanks nearby.

8. Observations and Comments by Evaluators:

- Masonry check dam with gate -> BWL-12m, ht-1.3m & 100m.
- Three PTs on a drain along the road.
- Masonry check dam -> 8m*1m*50m ->about 250 m3.
- Check dam is constructed with gate and serving no purpose. There is gap between basement and gate.
- PTs are constructed on a drain along the road. Outlets are deepened / eroded and storage capacity has come down drastically. No maintenance and storage capacity are negligible because of no maintenance.

Small check dam with full of water and serving the purpose. Good structure and sufficient water is stored and villagers are washing clothes in it.

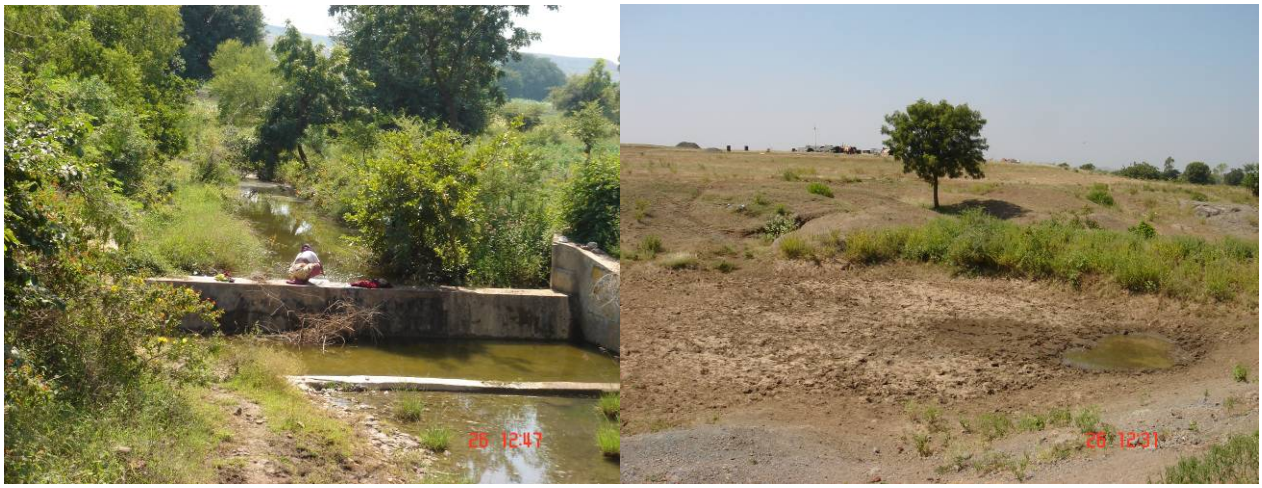


Fig: Check dam with full of water and percolation tank with deposition of silt and very little water.

Fig: Focus group meeting with farmers and watershed committee members and a check dam with sluice gate which needs repair as leakage is there from bottom of the gate.

Impact Assessment Report
MEDAPALLI Watershed, DPAP – IV batch
JHARASANGAM Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch
II.	Name of the watershed:	Medapalli
III.	Names of villages in the Watershed:	Medapalli
IV.	Villages/Mandal/District:	Medapalli/Jharasangam/Medak
V.	Name and Address of PIA:	DOVE(NGO)
VI.	Total area of the watershed:	500 ha

2. Ownership pattern of land:

I.	Community land (ha)	
II.	Government land (ha)	100 ha
III.	Private land (ha)	400 ha
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other Records

I.	Total cost:	Approved: Rs. 14.62 lakhs	Spent: Rs. 14.6 lakhs
II.	Expenditure incurred as per guidelines	Yes	
III.	Works executed as per Records	Yes, CDs: 7; PTs: 2; Field Bunding: 200 acre; CCT: 1500mts; RFDs;70	
IV.	Whether watershed committees exits	YES, Chairman: Ismail Sherif, President: G.sayanna, Secretary: B.Manaiah	
V.	If exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA: also a check dam construction with expenses of Rs.50,000/-

5. Qualitative parameters of impacts

I. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 12
	Before	After	Before	After	Male:8
	15	5	10	17	Female: 4
II. Description					
III. Records of meetings properly updated	WC: once in a month WA: once in 3 months				
IV. Liaison with scientific institutions established	Ralegan Siddhi; ICRISAT; ANGRAU				
V. Watershed Development Fund collected?, and its utilization	Rs.70,000/-				
VI. Self Help Groups	No:		Revolving fund: Rs.50,000/-		
VII. V.O functioning:			Savings:		
VIII. Utilization of loans:	Milk cattle, buffaloes				
IX. Bank linkages established:	Yes-Syndicate bank Jharasangam				
X. Planned CPRs sustainable & equitable development	Plantation of pongamia and development of grass				
XI. Benefits to weaker sections (women, dalits and landless)	Labor work in watershed activities in constructions				

6. Quantitative Parameters of Impacts

I. Improvements in water table/water availability	Drinking water problem solved ; 2m increase in water level. 3-5m
II. Additional area under cultivation/horticulture/afforestation	Five acre Mango
III. Changes in cropping pattern and intensity	New crop introduced potato, Green gram, black gram.
IV. Changes in agricultural productivity	Increased in area up to 200 acres of potato area.
V. Changes in fodder & fuel wood availability	Sufficient
VI. Changes in size and character of livestock holdings	Increase in cattle for milking
VII. Status of grazing land & their carrying capacity	Improved
VIII. Employment generated due to implementation of project	Increased agriculture, horticulture and vegetable crop increased labor work
IX. Change in household	40% improvement in household income

category, total, & source-	
X. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans and money lender both are there.
XI. Reduction in out-migration (case studies)	Since 4-5 yrs no migration
XII. Reduction in drought vulnerability of the watershed	a. Yellabontu Veeraiah after check dam he could cultivate 2 acres potato and increased income. b. B. Mallaiah – 4 acres Rs20-25 thousand acre.
XIII. Detailed case studies of specific farmers impacted by the project	Enclosed
XIV. Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- Deposition of silt to be removed from check dams increase percolation and ground water recharge.
- Improved cropping with improved water availability in wells.
- Plantation of teak, pongamia and mango plantation benefitted farmers.
- Milk production increased with additional dairy animals and availability of sufficient fodder

8. Observations and Comments by Evaluators:

- Open well full of water near to surface
- Masonry check dam near village on a live drain.
- Very good check dam full of water and lot of water is overflowing from structure -> three well (open) -> eight beneficiary farmers – about 25 acres benefited. Cotton, potato etc are grown under irrigation, no sugarcane is grown. GWL is increased by about 5 feet – water is available throughout the year.
- Open well is with full of water near this check dam and GWL is near to surface because of lot of water inflow in drain.

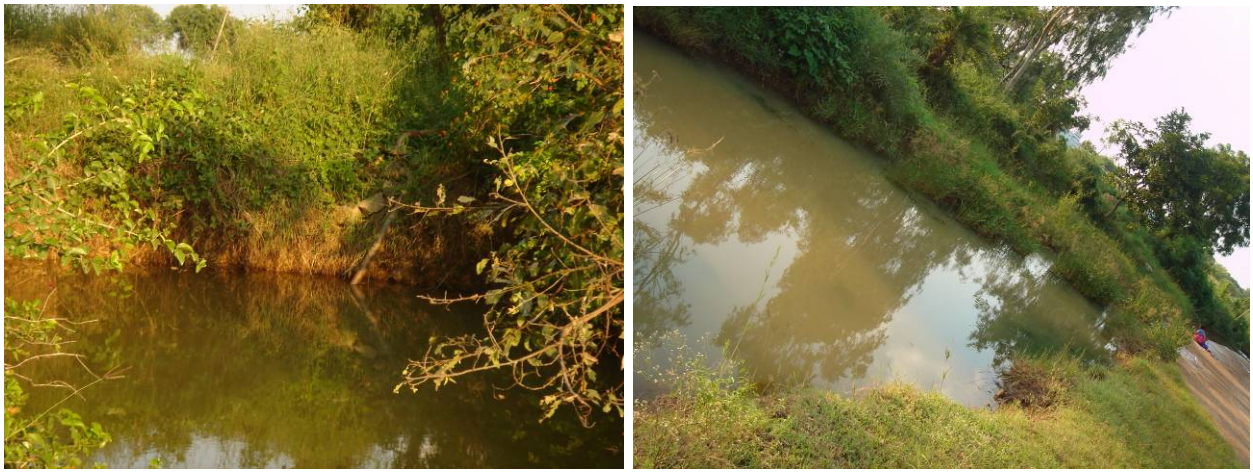


Fig: Check dam with full of water and picture of backwater storage along the side of road

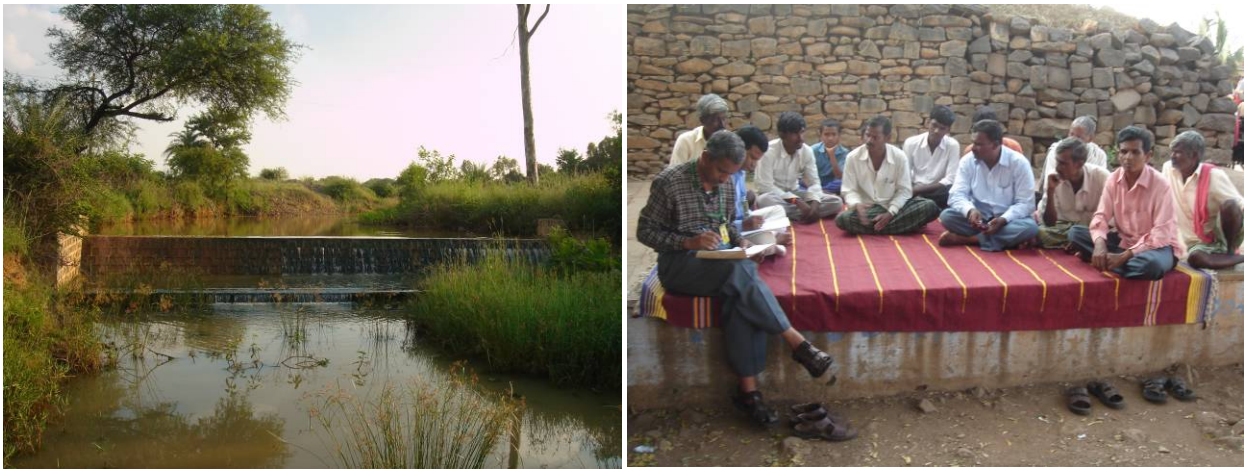


Fig: Recharged well with full of water and focus group meeting with farmers and committee members

Impact Assessment Report
RATNAPUR Watershed, DPAP – IV batch
JARASANGAM Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch
II.	Name of the watershed:	Ratnapur
III.	Names of villages in the Watershed:	Ratnapur
IV.	Villages/Mandal/District:	Ratnapur/Jharasangam/Medak
V.	Name and Address of PIA:	HELP(NGO)
VI.	Total area of the watershed:	500ha

2. Ownership pattern of land:

I.	Community land (ha)	
II.	Government land (ha)	20 ha
III.	Private land (ha)	480 ha
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other records

I.	Total cost:	Approved: Rs. 11.83lakhs	Spent: Rs. 11.7 lakhs
II.	Expenditure incurred as per guidelines	Yes	
III.	Works executed as per Records	Yes;Bunding;100 ha,RFD,s;35, Sunken pits; 20,CD;3, PT;18, Afforestation 50ha, Horticulture;20ha	
IV.	Whether watershed committees exits	Chairman: Sri Kashinath, President: Sri Basavareddy, Secretary: Sri Siddappa	
V.	If exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA; RFDs 10 no was constructed with a cost of Rs 70,000/-

5. Qualitative parameters of impacts

I.	Functioning of village level institutions	WC: Meets once in a month WC=12 member Men=8 WA: Meets once in 3 months Women=4,SHGs;12, UGs=20	
II.	Records of meetings properly updated	Updated regularly by secretary	
III.	Liaison with scientific institutions established	Visited Ralegaon siddi, CLRC villages of Sangareddy	
IV.	Watershed Development Fund collected?, and its utilization	Yes	
V.	Self Help Groups	No:	Revolving fund: Rs.50000
VI.	V.O functioning:		Savings:
VII.	Utilization of loans:	For buying dairy animals, inputs of agri, shops etc.	
VIII.	Bank linkages established:	APGVB Chalki	
IX.	Planned CPRs sustainable & equitable development	Plantation of tree species of sisu and teak and grasses	
X.	Benefits to weaker sections (women, dalits and landless)	Labor work during the project activity	

6. Quantitative Parameters of Impacts

a. Improvements in water table/water availability	Increased ground water level of 1-2m and new bore wells 20, old wells rejuvenated;10 no
b. Additional area under cultivation/horticulture/afforestation	Horticulture Mango plantation in 20ha and afforestation in 50 ha
c. Changes in cropping pattern and intensity	Pulses and vegetables
d. Changes in agricultural productivity	Increased productivity 20-30%
e. Changes in fodder & fuel wood availability	Not much
f. Changes in size and character of livestock holdings	Increased additional 50 animals and 150 liter additional milk production
g. Status of grazing land & their carrying capacity	Improved
h. Employment generated due to implementation of project	Employment in all agriculture, vegetable growing and horticulture cultivation. Dairy activity with additional animals for milking created work
i. Change in household category, total, & source-	Improved 405 house hold income
j. Freedom from Debt and reduction in degree of dependence of money	Reduced totally only depend on bank loans

lenders (case studies)	
k. Reduction in out-migration (case studies)	Reduced to 10% still continuing
l. Reduction in drought vulnerability of the watershed	Reduced to protect for 8-10 months period with additional area under cultivation supported
m. Detailed case studies of specific farmers impacted by the project	Enclosed
n. Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, Changes made etc.)

- Improved water availability in wells and bore wells with check dams and percolation tanks needs removal of silt for proper functioning effectively to be done with NREGA.
- Plantation of teak and mango helpful to farmer for good return.
- Due to increased no of milking animals additional income to families.
- SHG's utilized the funds effectively for purchase of poultry birds, buffalo and running shops.
- Percolation tanks and check dams needs to be repaired for leakages.

8. Observations

- One of the check dam near Ramanna's field helped in increased yields crops with support of well and bore well water and area of 10 acre with 3 farmers also benefitted.
- Percolation tank increased water availability below the tank wells and bore wells and Mr. Siddappa one of the beneficiary area increased for cultivation and higher returns was obtained similarly benefitted 4 families with 15 acre additional cultivation for crops.

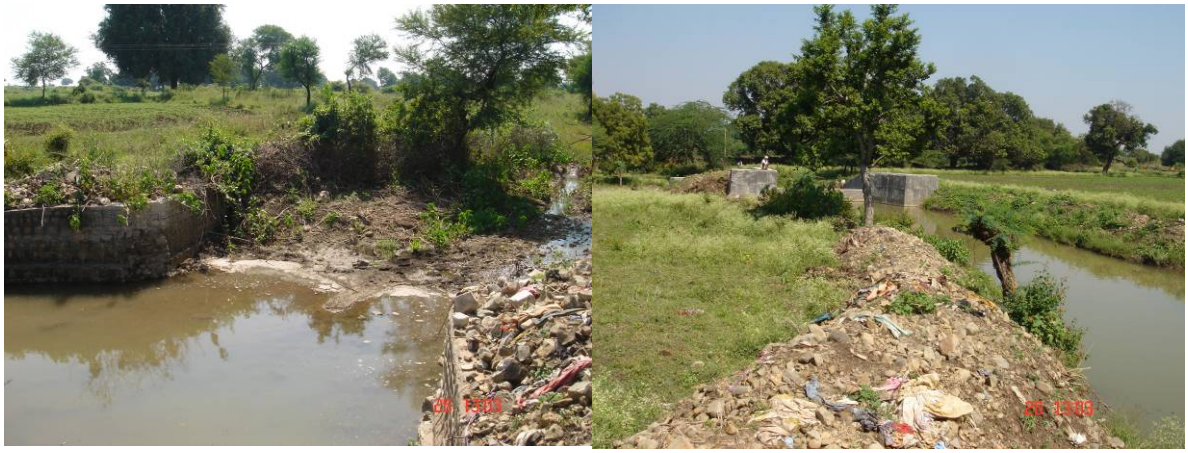


Fig: Check dam with full of water for ground water recharge and cattle drinking use

Impact Assessment Report
RUDRAR Watershed, DPAP – IV batch
NARAYANKHED Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I. Name of the Scheme:	DPAP – IV Batch
II. Name of the watershed:	Rudrar
III. Names of villages in the Watershed:	Rudrar
IV. Villages/Mandal/District:	Rudrar/Narayankhed/Medak
V. Name and Address of PIA:	READS (NGO)
VI. Total area of the watershed:	500 ha

2. Ownership pattern of land:

I. Community land (ha)	
II. Government land (ha)	50 ha
III. Private land (ha)	450 ha
IV. Forest land (ha)	
V. Others	

3. Verification financial and other Records

I.	Total cost:	Approved:	Spent:
II.	Expenditure incurred as per guidelines	Yes	
III.	Works executed as per Records	Yes, CDs: 1, PTs: 13,Bunding 50ha, CCTs successful	
IV.	Whether watershed committees exits	Yes, Chairman: S.Siddappa, President: Sai Reddy K, Secretary: G.Sanga Reddy	
V.	if exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA: not done (firstly done other NGO worked)

5. Qualitative parameters of impacts

I.	Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 11
		Before	After	Before	After	Male:9
II.	Describe	-	-	-	11	Female: 2
III.	Records of meetings properly updated	Regularly updated with monthly WC meeting and every 3 month with WA				
IV.	Liaison with scientific institutions established	Visited Ralegaon siddi and ICRISAT				
V.	Watershed Development Fund collected?, and its utilization	Rs.92,000/-				
VI.	Self Help Groups	No:		Revolving fund: Rs.50,000/-		
VII.	V.O functioning:			Savings:		
VIII.	Utilization of loans:	Agriculture inputs, dairy animals, Shops				
IX.	Bank linkages established:	APGVB Narayankhed				
X.	Planned CPRs sustainable & equitable development	More PTs were located in CPRs. All CPRs were allotted to individual farmers(SCs)				
XI.	Benefits to weaker sections (women, dalits and landless)	Labor work in all activities				

6. Quantitative parameters of impacts

I.	Improvements in water table/water availability	Open wells:15; Bore wells are generally failure Well deep: 10mts; water depth: 3m to 1m Water dries up by December. Now after watershed march all wells have water only in April. Some wells dries up.
II.	Additional area under cultivation/horticulture/ afforestation	100 acres additional area brought under cultivation. Horticulture plantation implemented but not successfully established.
III.	Changes in cropping pattern and intensity	Sorghum, Pigeon pea, green gram, black gram, chickpea, sunflower, safflower, soybean. 50 bags/1.5 acres
IV.	Changes in agricultural productivity	Sorghum: 10Q/acre; sunflower: 4 to 5 Q/acre; Chickpea: 5 to 6 Q/ha; onion: 10 tons/acre; who claims is a new achievement.
V.	Changes in fodder & fuel wood availability	Better
VI.	Changes in size and character of livestock holdings	Increased 50 animals and 150 liter milk yield daily.
VII.	Status of grazing land & their carrying capacity	improved

VIII. Employment generated due to implementation of project	Lot of employment with additional area under cultivation, plantation and horticulture activity, Dairy activity etc
IX. Change in household category, total, & source-	50% household income increased
X. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	All people took bank loan and once they could not repay, hence they are approaching the money lenders.
XI. Reduction in out-migration (case studies)	Out migration up to 60% population from the village.
XII. Reduction in drought vulnerability of the watershed	Still not appreciated.
XIII. Detailed case studies of specific farmers impacted by the project	a. Assaiah.P: Have two open lotion tanks and he has one open well, Paddy and onion are his main two crop systems. b. M.Navayava: Have 10 to 15 wells and he has PT nearby which is helping his all 15 wells with good water availability. Onion, green gram, pigoenpea, paddy
Photographs showing work + its impact	Enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, changes made etc.)

- Good water improvement with all CDs and PTs needs maintenance for silt removal.
- PTs repairs and new PTs to other locations.
- Bunding in untreated area to be continued.
- NREGA to take up repair works of all watershed structures

8. Observations and Comments by Evaluators:

- Masonry Check dam -> about 250 m^3 capacity with full of water.
- Open wells 2 No's near check dam are with improved water availability
- Teak plants in a row grown with root steps.
- Lot of bushes grown in check dam to be removed.
- Good check dam with overflowing water. Two open wells seen nearby. Onion is transplanted under irrigation. Good recharging of open wells seen. Seepage going in the drain diverted in to open wells.
- Lot of teak plants are grown on bund in a row. About 10m height & about 20 cm diameter are observed.
- About 13 PTs are made & they are good in recharging GWL.

Fig: Meeting with farmers and watershed committee during impact assessment of watershed

Impact Assessment Report
SATYAGAON-CHANDAPUR Watershed, DPAP – IV batch
NARAYANKHED Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch
II.	Name of the watershed:	Satyagaon -Chandapur
III.	Names of villages in the Watershed:	Satyagaon -Chandapur
IV.	Villages/Mandal/District:	Satyagaon -Chandapur/Narayankhed/Medak
V.	Name and Address of PIA:	READS(NGO)
VI.	Total area of the watershed:	500 ha

2. Ownership pattern of land:

I.	Community land (ha)	
II.	Government land (ha)	50
III.	Private land (ha)	450
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other Records

I.	Total cost:	Approved:	Spent:14.7 lakhs
II.	Expenditure incurred as per guidelines	yes	
III.	Works executed as per Records	Yes, Bunding: 450acres; PTs: 8; RFDs/LBS: 20; Recharge of wells: 30; Widening of bank of Nallabunda->to a major drain	
IV.	Whether watershed committees exits	YES, Chairman: Ashok Reddy, President: Lakshmanna, Secretary: Naganadh Reddy	
V.	if exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

EPA- nil

5. Qualitative parameters of impacts

a. Functioning of village level institutions	No. of UGs		No of SHGs		WC members: 12
	Before	After	Before	After	Male:10
	-	-	-	-	Female: 2
b. Describe					
c. Records of meetings properly updated	WC: as and when required, once in a month WA: once in a year				
d. Liaison with scientific institutions established	ICRISAT, Ralegaon Siddi				
e. Watershed Development Fund collected?, and its utilization	Rs. One Lakh plus				
f. Self Help Groups	No:		Revolving fund: Rs.50000		
g. V.O functioning:			Savings:		
h. Utilization of loans:	For Agri inputs, Cattle for dairy and Poultry birds purchase etc				
i. Bank linkages established:	APGVB Narayankhed				
j. Planned CPRs sustainable & equitable development	150 acres field bunding in CPRs.				
k. Benefits to weaker sections (women, dalits and landless)	Labor work in all watershed works.				

6. Quantitative parameters of impacts

a. Improvements in water table /water availability	Open wells: 50; Bore wells: 100; Depth of bore wells: 100 feet deep water available. Bore wells water available up to April month. Two crops are possible.
b. Additional area under cultivation/horticulture/affo restation	100 acre additional areas brought under cultivation. Mango plantation to an extent of 30 acres to 30 farmers
c. Changes in cropping pattern and intensity	200% under bore well irrigation. Single crop under Vertisols.
d. Changes in agricultural productivity	Paddy, onion, potato, pigeon pea, sorghum, groundnut, chickpea.
e. Changes in fodder & fuel wood availability	
f. Changes in size and character of livestock holdings	10 to 20% increase in milk cattle.
g. Status of grazing land & their carrying capacity	Sufficient
h. Employment generated due to implementation of project	More employment due to lot agriculture, horticulture and plantation works

i. Change in household category, total, & source-	40% increase in income of family
j. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Outside money lender, because bank loans are not given in time.
k. Reduction in out-migration (case studies)	50% out migration as land is less and agriculture labor is more.
l. Reduction in drought vulnerability of the watershed	Small holder farmers have difficulty 1/4th of the area will be under cultivation
m. Detailed case studies of specific farmers impacted by the project	Anji Reddy Mahaboob Saheb Both got benefited due to cleaning & widening of Nallabunda (vague) as they got good crops.
n. Photographs showing work + its impact	enclosed

7. Learnings and process documentation (how the program could be implemented better; constraints, improvements possible, Changes made etc.)

- More check dams(3) should have been considered.
- PTs construction could not be taken up due to funds deficit.
- Nalabunding also should have been taken up for another 3km length.
- Milk production increased due to increased fodder availability and increased milking animals
- Plantation mango and teak benefitted more.

8. Observations and Comments by Evaluators:

i. PT -> size about 2000 m^3 but made a drain in the center -> now capacity may be about 1000m^3 -> no surplus weir.

ii. PT -> three bore wells nearby, 5 farmers and 8 acres under cultivation. Paddy crop is grown under irrigation.

Fig: Nala widening and cleaning work and a meeting of watershed committee and farmers.

Impact Assessment Report
WADDI Watershed, DPAP – IV batch
NYALKAL Mandal, MEDAK district, Andhra Pradesh

1. Details of watershed:

I.	Name of the Scheme:	DPAP – IV Batch
II.	Name of the watershed:	Waddi
III.	Names of villages in the Watershed:	Waddi
IV.	Villages/Mandal/District:	Waddi/Nylakal/Medak
V.	Name and Address of PIA:	HELP(NGO)
VI.	Total area of the watershed:	500 ha

2. Ownership pattern of land:

I.	Community land (ha)	
II.	Government land (ha)	
III.	Private land (ha)	500 ha
IV.	Forest land (ha)	
V.	Others	

3. Verification financial and other Records

I.	Total cost:	Approved:	Spent:14.7lakhs
II.	Expenditure incurred as per guidelines	Yes	
III.	Works executed as per Records	Yes, CDs: 2; PTs: 25; RFDs: 20; LBs:50; Field Bunding: 500 acres; CCT: 1kms;	
IV.	Whether watershed committees exits	YES, Chairman: Rudraih Swamy, President: Sikhareswar, Secretary: Maruthappa	
V.	If exists, activities of the committees		

4. Community participation (how community participation have been ensured and what EPA have been taken up, inputs of details of beneficiaries)

Soak pits in a village as an entry point activity (10)

5. Qualitative parameters of impacts

I. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 11
	Before	After	Before	After	Male:8
	-	1	-	10	Female: 3
II. Describe	SHG comprises of 15 members each, 5 functioning				
III. Records of meetings properly updated	WC: 2 to 3 times in a year WA: thrice in a year Not very sure				
IV. Liaison with scientific institutions established	Ralegan Siddhi, ICRISAT, ANGRAU Research center in Sanga Reddy				
V. Watershed Development Fund collected?, and its utilization	WDF:15000 not done completely and deposited in the nationalized bank (SBI)				
VI. Self Help Groups	No:10		Revolving fund: Rs.50000		
VII. V.O functioning:	Recently formed		Savings:		
VIII. Utilization of loans:	Not specific, shared the amount among members				
IX. Bank linkages established:	Yes, established with all new 21 SHGs.				
X. Planned CPRs sustainable & equitable development	Teak and mango plantation done and benefitted more				
XI. Benefits to weaker sections (women, dalits and landless)	Labor work available most of the crop season				

6. Quantitative parameters of impacts

a. Improvements in water table/water availability	Open wells: 15-20; Bore wells: 35 Open well depth:75 feet, water depth before: 12 feet, water depth: 18-20 feet. 5-6 feet increased on an average. Water availability increased up to may, which was earlier dried up by Jan-Feb.
b. Additional area under cultivation/horticulture/afforestation	500 acres improved under cultivation, which ever was cross bunded. Unattended mango could not be established.
c. Changes in cropping pattern and intensity	Sorghum, Pigeon pea, green gram & black gram, sunflower, chickpea.
d. Changes in agricultural productivity	25-50% yield increase in dry land crop yield on an average.
e. Changes in fodder & fuel wood availability	Better
f. Changes in size and character of livestock holdings	Increased 40 animals and milk production 90 liter per day increased
g. Status of grazing land & their carrying capacity	Improved-open grazing
h. Employment generated due	Employment due to agriculture, horticulture and dairy

to implementation of project	activity improved
i. Change in household category, total, & source-	40% increase in family income
j. Freedom from Debt and reduction in degree for dependence of money lenders (case studies)	Reduced but take loan form Bank as well as money lender
k. Reduction in out-migration (case studies)	Migration reduced for farm labor but increase in small labor (construction)
l. Reduction in drought vulnerability of the watershed	Yes for six months protection is possible
m. Detailed case studies of specific farmers impacted by the project	Mr. Vidyanadh received 150 mango plants, now 60 plants survived and bearing fruits in two acres. 150 teak plants and 100 surviving Rs.2000/yr since 6yrs.
n. Photographs showing work + its impact	Enclosed

7. **Learnings and process documentation** (how the program could be implemented better; constraints, improvements possible, changes made etc.)

   i. Permanent works like check dams can help better than PTs. Maintenance & repairs yearly can help retain the structures and earth works intact and help in a long run assignment.

   ii. The responsibility & UGs on permanent bases will help.

8. **Observations and Comments by Evaluators:**

   i. Masonry Check dam -> lankala -> 12m*1.25m 150m cost – Rs.1.5 Lakh

   ii. Percolation tank – about 500 m^3

   iii. Mango plants -> small plantation may be 50 plants good

   iv. Small PT – may be 250 m^3 -> same beneficiaries, runoff comes from village good & serving the purpose.

   v. Teak plants on bunds established well

   vi. Very poor maintenance, leakages are seen and apron is damaged, siltation seen no water in it. 5 wells, about 10 farmers, 20 acres -> GWL- about 3 feet -> sugarcane, potato, paddy grown.

   vii. PT -> 2 wells, good structure, suitable seen, outlet is good. 2 farmers, 2 acres under cultivation – GWL may be 2 feet.

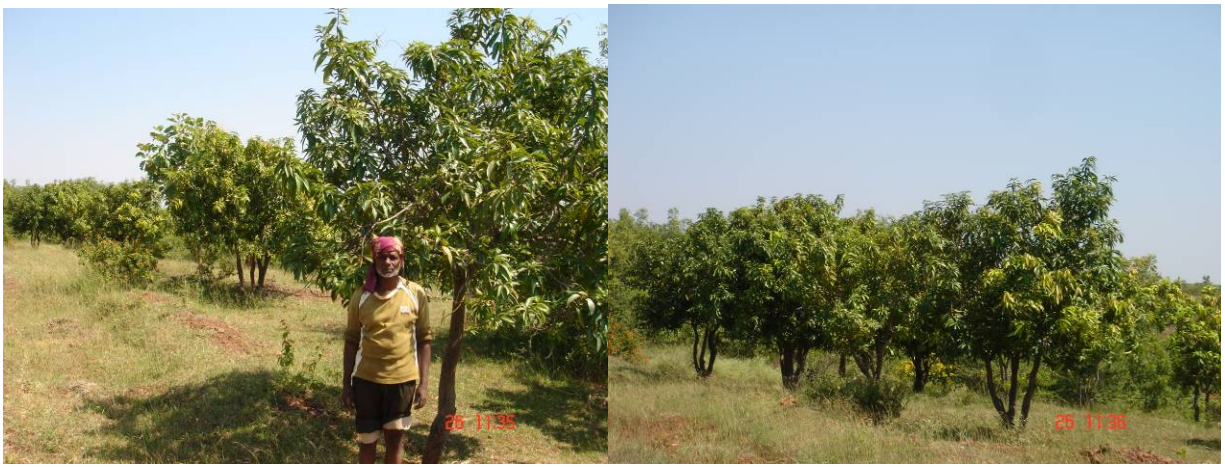


Fig: Good mango plantation in watershed many farmers got benefitted, getting goof fruit yields.

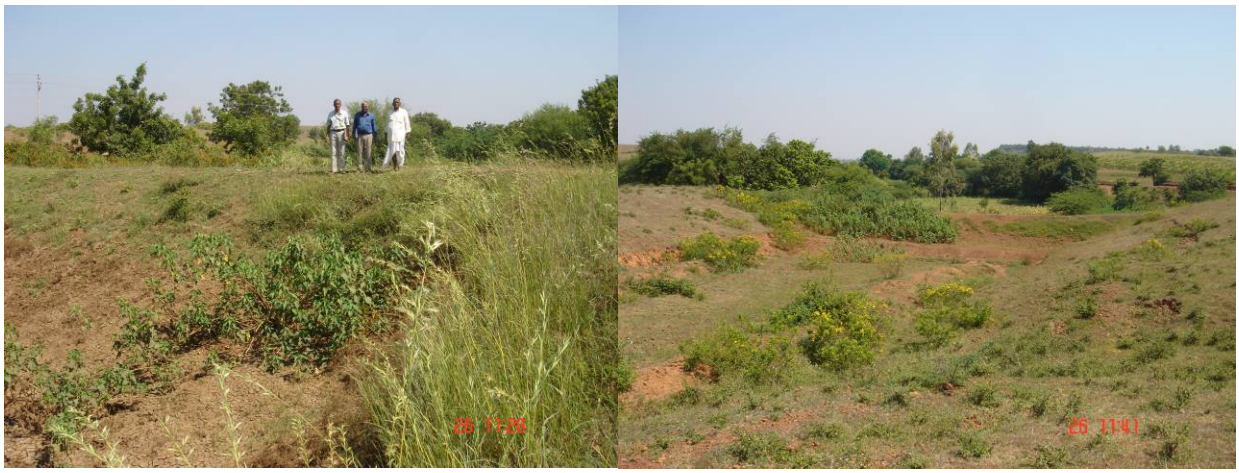


Fig: Percolation tank benefitting for lot of percolation of water with lot of silt deposition and shrubs needs removal

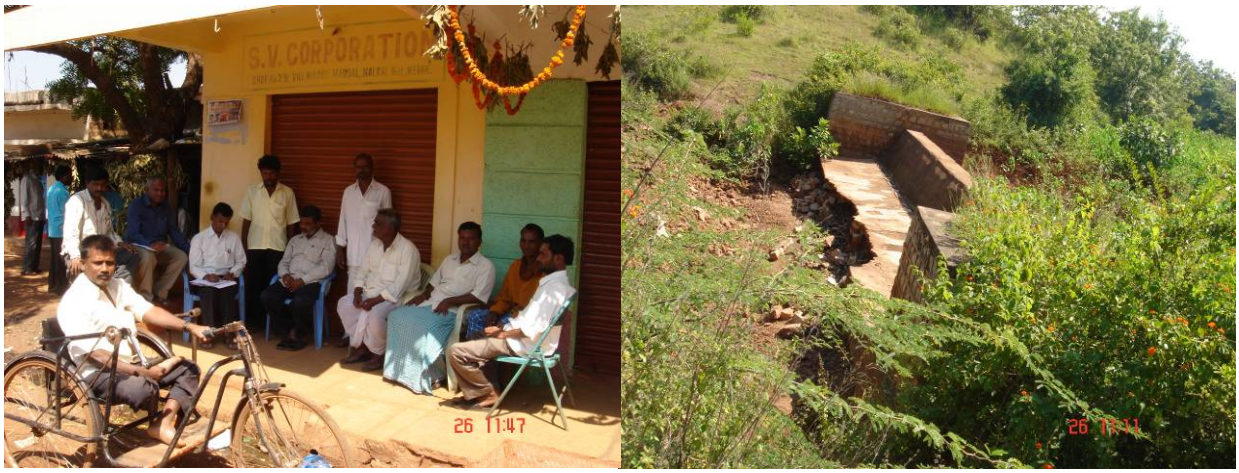


Fig: Meeting with farmers and watershed committee and check dam apron damaged needs repair.

ANALYSIS OF IMPACTS

Drought Prone Area Programme (Batch IV) targeted and developed 30 watersheds in 6 mandals in Medak district during four years started in the year 1997-98 and execution of developmental activities completed by 2002-03. The area treated under watershed activities (SWC structures) was 60,000 ha with a total expenditure of Rs.605.375 lakhs directly released to watershed committees during the period. Amounts sanctioned towards training, community participation and administrative charges to the tune of Rs. 614.6 lakhs were released to concern PIA directly. We have taken up 16 watersheds developed by PIAs from different mandals of Medak to have well distributed representation of watersheds for the present impact assessment study.

Verification of Records

In this district, we spent lots of time to access records during our team's field trips to watersheds and meeting with officials in DWMA office to gather information and verification of records, however, found it difficult to get the required reports completely. Our efforts were fruitful finally in getting final evaluation report of this project from the office of the Commissioner of Rural Development and Andhra Pradesh Academy of Rural Development (APARD), Hyderabad. This report was useful in cross verification of information, we gathered during focused group discussion with beneficiaries in each watershed. Most of the activity reports including action plans and measurement books and bank passbooks, supposed to be available with watershed committees were reportedly taken and placed in DWMA office for safe custody according to watershed committees' members, and we did not get access to those records at DWMA office.

Community (People's) Participation

DPAP was a people's programme with Government assistance. The Government complements their work by creating social awareness, imparting training and providing technical support through project implementation agencies. At the inception stage, in four of the twenty selected watershed villages for impact assessment, Entry Point Activity (EPA) was implemented either by temple slab (Kuppanagar) and community hall (Jambgi-B) percolation tanks (Govindpur) and soak pits and approach roads to village were done for building trust in people for starting the actual watershed works.. In most of the watersheds EPA was not been done and villagers were not aware of the EPA. In watershed villages

where EPA was undertaken (10 watersheds), villagers were satisfied and appreciative of the usefulness of the works.

Project expenditure pattern (Table 1) indicates that spending on community organizations development and training of beneficiaries was 7.3%. Although, there was ample scope and opportunities to address the issues of women by forming self-help groups (SHGs) involving weaker sections of the society, this aspect was taken up moderately as was evidenced by moderate growth of total 194 SHGs in 16 watersheds assessed; and many are functional at present in the selected 16 watershed communities. In large scale activities which promote income generation like purchase of goats, sheep, buffalo for milk production and running kirana shops buying agricultural inputs raising nursery of horticultural and forest tree plants, weaker sections and women through SHGs should have been involved. SHGs development was not conspicuously seen in terms of successful and sustainability of rural livelihoods for income generation.

A total of 174 user groups (UGs) were formed in sixteen watersheds. Soil and water conservation works were undertaken by the WCs without much participation of people, and in some watersheds although farmers participated for works in their fields. User groups' participation in constructing SWC structures would have developed belongingness and prompted for timely management of these structures

Soil and water conservation structures

Soil and water conservation works permitted under this component in the project was for an estimated allocation and release of Rs.426.1 lakhs (70.3%) to cover 60000 ha, and total amount was spent for many constrution and SWC works. In 16 selected watersheds for impact assessment in the DPAP IV project the following works were executed are as follows. Total of 55 km of continuous contour trenches, 1239 no. non-cemented water harvesting structure (RFD, s and sunken pits), and cemented SWC structures as check dams 50 Nos, 172 percolation tanks constructed.

In majority of watersheds assessed (in 16 watersheds out of 30 watersheds) construction quality of masonry structures either by PIA of government organization or NGO were generally good and suitably located. In many, watershed structures and works did not exist beyond the two year of implementation and in check dams were affected either by leakages or by breaches due very poor construction. However, in most of these 16 watersheds some

structures were damaged for lack of maintenance of the structures for a longer period, also due to floods during October 2009 and need immediate attention to repair these structures and desilting to improve efficiency of SWC structures.

Watershed structures were of poor quality and some of the road-side RFDs were removed by villagers. Bunding is mostly eroded due to no maintenance by less interested farmers. Hence farmers are not much benefitted in terms of soil and water conservation and groundwater improvement.

Water availability for irrigation and drinking purpose

Farmers in sixteen selected watersheds located in different mandals reported an increase in ground water levels ranging from as low as 0.5 m to a maximum of 3-4 m in open wells due to SWC structures as well as field bunding. In many villages all the open wells rejuvenated after watershed developments, those were dried up before watershed implementation. Water availability in the open wells increased up to March-April months for irrigation. In six watersheds, the number of successful bore wells increased to more than 200 in each watershed, as an indication of farmers' confidence on water availability and exploitation for higher income. Farmers realized more water availability in treated watershed areas of these villages compared to less availability of groundwater in surrounding un-treated watershed villages in the area. Impact of watershed interventions especially masonry structures has been felt very much by the beneficiary farmers in DPAP IV developed watershed villages in terms of their utility to control erosion, to some extent ground water increase and more importantly availability of water for drinking purpose. Period of water availability for irrigation extended from November-December months before the watershed development, to end of March-April after the watershed development. In some watersheds reported an increase of 0.5" water delivery from bore wells i.e. from 1.5" delivery increase to 2" from most of the bore wells in their village, and bore wells supply water all the year round and daily bore well pumping time increased after the watershed development. These situations favored for double cropping with one or two supplemental irrigations for second crops between January and March every year. In most of the villages there was a clear agreement on availability of drinking water in plenty round the year after watershed development project implementation in their area. In some watersheds, water storage in percolation tanks providing drinking water for cattle population even during summer months.

Enhanced agricultural productivity of seasonal crops

Due to water availability, farmers in all watersheds reported increase in cultivated area of paddy and post-rainy season crops especially onion, chickpea and groundnut. Crop intensity increased from 100% to a range between 150%-200% as the number of bore well those support second crop were more than 200 per village in few villages in our study. Due to availability of water for longer period in the season up to end of March-April, crops like potato, onion, groundnut and maize as second crop after paddy were introduced. There is 100% increased area for cultivation of sugarcane due to increased water availability and yield level up to 30-40%. Although, variability exists in reported productivity enhancement, it varied from as low as 20% in case of soybean, green gram, black gram, sunflower, cotton and pigeon pea to more than 50% increase in case of grain crops like paddy, maize as well as second crop of groundnut in some watersheds. Some Farmers cultivated paddy in two seasons under bore well irrigation in the second season. Yields of paddy in the first season generally increased from 20 bags to a range between 25 to 30 bags per acre and in the second season average yield was up to 35 bags per acre. Although, paddy is not an efficient crop for scarce water utilization, farmers are taking up paddy as second crop also in watersheds for food grains and fodder for animals. Farmers were not exposed to best production technologies for dryland crops to achieve higher water use efficiency in these crops. This should have been possible as the farmers get exposed to advances in dryland technologies.

Afforestation and Horticulture Development

Under DPAP Batch-IV watersheds of Medak, afforestation activity received relatively less attention. Nurseries of teak were grown in Hoti K and Anthwar Paidipalli for all watersheds and distributed. The survival rate was only 30% and only at Kuppanagar 2000 teak plants are survived well and got good return may seen in future. The actual benefit will be seen after the trees are grown with good diameter. However horticulture activity received considerable interest generated among farmers for mango cultivation on seeing the success of watershed farmers planted mango in earlier project. Mango plants are purchased from the nursery near Sangareddi and supplied. In many house hold backyard plantations was done and in small patches of 1-2 acre were plantation was done. In 16 watersheds totally 200 ha of mango plantation established, reaping good harvest of fruits and income. The survival of plantation was only 25-40% in most of the watersheds. Actual area targeted under mango plantation and plants supplied to farmers were much higher to the actually survived and

established in orchards. Mango plants survival rate was affected due to several reasons including less care initially from trespassing cattle and low watering at establishment.

Farmers had harvested mango with a net income ranging from Rs.15,000 to Rs.25,000 per acre based on growth and age of mango orchards in watersheds which is indicated by farmers during impact assessment in the DPAP IV project. Teak plantations were developed under afforestation on field bunds of interested farmers will give good return.

Farmers indicated reasons for poor establishment of orchards were:

1. Lack of sufficient water supply during establishment in the drought year.
2. In unprotected orchards, plants were exposed to goat and cattle grazing during summer season.

Common Property Resources and Wasteland Development

Medak is one of the frequently drought affected districts having large areas of wastelands. Development of common property resources (CPRs) was done in six watersheds of the twenty selected watersheds in the project for the impact assessment study. In few watershed 10-15 ha bunding and also silt application was done in CPRs, grass seeds were distributed to grow grass in CPRs as well as individual farm lands in some watersheds. In few watersheds, SWC structures were developed in CPRs similar to the entire watershed with construction of check dams, percolation tanks, formation of field bunds and planting teak and subabul plants. In few watersheds afforestation by tree planting on hillocks (CPRs) was done. In some watersheds two percolation tanks were dug in CPRs. Field bunding was done in CPR lands which were allotted to SC/ST farmers and have already been under cultivation. In many watersheds, there was no information on CPRs development during DPAP- Batch IV Project.

Employment and Migration

In the entire Andhra Pradesh, Medak has the distinction of highest labor migration in the state, due to scarce rainfall and low productivity of dryland crops. In the selected twenty watershed villages for impact assessment, the migration for employment reduced four-fold in three villages. These correspond to well developed watersheds with higher water availability. In another ten of the watershed villages, migration reduced to 5%-10% from as high as 30%-60% in some villages, not only due to watershed development and crop productivity increase, but because of National Rural Employment Guarantee Scheme

(NREGS) of the central government in operation for couple of years. As informed by respondent farmers at the time of focused group discussion, 3-5% migration in some of the villages was for higher wage earnings and for especially skilled labor like construction workers and security duties. Parity in labor wages between men and women still exists in most of the watersheds.

Our analysis of focused group discussions with village communities indicate that only in five of the watershed villages farmers expressed affirmatively for withstanding drought affects for one or two years and expressed vulnerable for mainly fodder scarcity as there is no fodder availability for large number of goat, sheep and cattle population. Farmers expressed fodder scarcity even in subnormal or poorly distributed years of rainfall season when crop production becomes lower, and hence cattle population is decreasing.

Watershed Development Fund

Watershed development fund was collected in all the watersheds as per guidelines and deposited in the banks for joint operations by watershed committee and WDT from the PIA. Amount deposited with various WCs collected from watershed member beneficiaries as WDF at the rates specified in guidelines and the amount has been transferred to PD, DWMA. Farmers and WC members in almost all watersheds mentioned that if the fund was made available for repair and maintenance of watershed structures and also desilting of silt from structure's CDs & PTs would have been very helpful and impact would have been felt very much by the beneficiaries in the watershed.

Suggestion for enhanced impacts in the watersheds

1. Watershed development fund contributed by watershed members should be utilized for repair and maintenance of watershed structures on regular basis annually, either by desilting, attending necessary repairs for masonry structures and rock filling and earth works for breaches.

2. As an exit policy, a matching grant equal to accrued WDF may be provided to a village body which must accept the responsibility for repair and maintenance of the structures annually by utilizing the interest portion of the WDF.

3. Mango and sweet orange cultivation is of interest to farmers and remunerative, hence smallholder farmers may be given an opportunity to take up one hectare orchards based on feasibility, with possible option of drip irrigation for efficient use of water in scarce rainfall zone.

4. Fodder availability is another issue which may need attention to enhance income and livelihoods for poor by rearing milch cattle, goat and sheep. Increasing fodder availability by growing improved forage grasses and fodder supplying trees in agricultural and non-agricultural vacant lands.

5. Teak plantation is another interesting area for many farmers and they got good benefit by planting on the boundary and waste lands. This activity can be given more support.

About ICRISAT

ICRISAT
Science with a human face

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world. Covering 6.5 million square kilometers of land in 55 countries, the semi-arid tropics have over 2 billion people, and 644 million of these are the poorest of the poor. ICRISAT and its partners help empower these poor people to overcome poverty, hunger, malnutrition and a degraded environment through better and more resilient agriculture.

ICRISAT is headquartered in Hyderabad, Andhra Pradesh, India, with two regional hubs and four country offices in sub-Saharan Africa. It belongs to the Consortium of Centers supported by the Consultative Group on International Agricultural Research (CGIAR).

Contact Information

ICRISAT-Patancheru
(Headquarters)
Patancheru 502 324
Andhra Pradesh, India
Tel +91 40 30713071
Fax +91 40 30713074
icrisat@cgiar.org

ICRISAT-Liaison Office
CG Centers Block
NASC Complex
Dev Prakash Shastri Marg
New Delhi 110 012, India
Tel +91 11 32472308 to 09
Fax +91 11 25841294

ICRISAT-Nairobi
(Regional hub ESA)
PO Box 39063, Nairobi, Kenya
Tel +254 20 7224550
Fax +254 20 7224001
icrisat-nairobi@cgiar.org

ICRISAT-Niamey
(Regional hub WCA)
BP 12404, Niamey, Niger (Via Paris)
Tel +227 20722529, 20722725
Fax +227 20734329
icrisatsc@cgiar.org

ICRISAT-Bamako
BP 320
Bamako, Mali
Tel +223 20 223375
Fax +223 20 226683
icrisat-w-mali@cgiar.org

ICRISAT-Bulawayo
Matopos Research Station
PO Box 776
Bulawayo, Zimbabwe
Tel +263 383 311 to 15
Fax +263 383 307
icrisatzw@cgiar.org

ICRISAT-Lilongwe
Chitedze Agricultural Research Station
PO Box 1096
Lilongwe, Malawi
Tel +265 1 707297/071/067/057
Fax +265 1 707298
icrisat-malawi@cgiar.org

ICRISAT-Maputo
c/o IIAM, Av. das FPLM No 2698
Caixa Postal 1906
Maputo, Mozambique
Tel +258 21 461657
Fax +258 21 461581
icrisatmoz@panintra.com

www.icrisat.org