

**Impact Assessment Report**  
**DROUGHT PRONE AREA DEVELOPMENT PROGRAMME**  
**(DPAP-BATCH I)**  
**MAHABUBNAGAR District, Andhra Pradesh**



**GLOBAL THEME – AGROECOSYSTEMS**



**International Crops Research Institute  
for the Semi-Arid Tropics**

**October 2010**

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We gratefully acknowledge the Commissioner, Department of Rural Development, Government of Andhra Pradesh for providing co-ordination with Project Director, District Water Management Agency (DWMA), Mahabubnagar; to guide us in selecting watersheds well distributed across the district to capture complete representation of variability of watersheds development for the impact assessment study of DPAP Batch I watersheds in Mahabubnagar.

We are thankful for the support and guidance of Project Director, DWMA for providing all support from their project staff for their active participation. We record our profound thanks to Mr. Samuel, Assistant Project Director for his help arranging our tour schedules, contact persons at different watershed every day during our field visits and to organize village meetings in all watersheds, which was most crucial in our efforts.

Our team acknowledges the useful information shared by Chairmen, Secretaries and DPAP project beneficiaries during focused group discussions (FGD) and field visits.

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.

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A. P

## **ABBREVIATIONS**

<b>APD</b>	Assistant Project Director
<b>CCT</b>	Continuous Contour Trenches
<b>DRDA</b>	District Rural Development Agency
<b>DPAP</b>	Drought Prone Area Programme
<b>DWMA</b>	District Water Management Agency
<b>FGD</b>	Focused Group Discussions
<b>GCS</b>	Gully Control Structures
<b>IWD</b>	Integrated Watershed Development
<b>LBS</b>	Loose Boulder Structures
<b>MDT</b>	Mandal Development Team
<b>NGO</b>	Non-governmental Organization
<b>NRM</b>	Natural Resources Management
<b>PD</b>	Project Director
<b>PIA</b>	Project Implementing Agency
<b>PRA</b>	Participatory Rural Appraisal
<b>PT</b>	Percolation Tank
<b>RFDs</b>	Rock Filled Dams
<b>SF</b>	Social Forestry
<b>SHGs</b>	Self-Help Groups
<b>SMC</b>	Soil Moisture Conservation
<b>SWCS</b>	Soil Water Conservation Structures
<b>UGs</b>	User Groups
<b>VSS</b>	Vana Samrakshana Samithi
<b>WA</b>	Watershed Association
<b>WS</b>	Watershed
<b>WDC</b>	Watershed Development Committee
<b>WDF</b>	Watershed Development Fund
<b>WDT</b>	Watershed Development Team

## EXECUTIVE SUMMARY OF IMPACT ASSESSMENT

In Mahabubnagar district, DPAP - batch 1 received funding for development of 92 watersheds in 48 mandals and the project was implemented from 1995-2003 to treat 46000 ha with watershed development.

1. One of the main objectives of DPAP was to ensure and enhance people's participation in this programme. In the inception stage, ten of the selected twenty watershed villages for impact assessment took up Entry Point Activity (EPA) that ensured community participation and awareness about the watershed project. In watershed villages where EPA was undertaken, villagers were satisfied and appreciative of the usefulness of the works.
2. 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 not actively pursued as was evidenced by poor growth of total 78 SHGs and a very few are functional at present in the selected 20 watershed communities.
3. User groups (UGs) were formed in four watersheds out of the twenty watersheds. Soil and water conservation works were undertaken by the WCs without much participation of people.
4. In 14 watersheds out of 20 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.
5. Farmers in fourteen watersheds located in different mandals reported an increase in ground water levels ranging from 2 to 3 feet generally and in some watersheds water level raise was up to 10 feet and increased availability of water for irrigation up to March-April months. In nine watersheds, the number of successful bore wells increased to more than 200 in each watershed, as an indication of water availability.
6. Period of water availability for irrigation extend from November-December months before the watershed development, to end of March-April after the watershed development. This situation favored for double cropping with one or two supplemental irrigations for second crops between January to March every year.
7. 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.
8. In some watersheds (Alwal, Boypally and Ettam), water storage in percolation tanks providing drinking water for cattle population even during summer months.
9. Crop intensity increased between 160%-200% as the number of bore well those support second crop were more than 200 per village. Due to availability of water for longer period in the season up to end of March-April, crops like groundnut, sunflower and maize as second crop after paddy was introduced.

10. Our enquiries revealed that there was considerable interest generated among farmers for mango and sweet oranges cultivation on seeing the success of watershed farmers planted mango and sweet orange through DPAP-I.
11. Farmers had harvested mango with a net income ranging from Rs.10,000 to Rs.20,000 per acre based on growth and age of mango orchards developed through DPAP-1. Sweet orange was another prominent fruit crop spread through this project and farmers in various DPAP-1 watersheds indicated that their net income from sweet orange orchards varies from Rs.25, 000 to 50,000 per acre based on the age and growth of the orchard.
12. Development of common property resources (CPRs) was done in five watersheds of the twenty selected watersheds in the project for the impact assessment study. CPRs were developed similar to the entire watershed with construction of check dams, percolation tanks and formation of field bunding as CPRs land had already been under cultivation by SC/ST farmers with usufruct rights in several watersheds.
13. In the selected twenty watershed villages for impact assessment, the migration for employment did not change in seven (35%) villages, in another eight (40%) of the watershed villages, migration reduced to 5%-10% from as high as 30%-50% in some villages, not only due to watershed development and crop productivity increase, but also because of National Rural Employment Guarantee Scheme (NREGS) of the central government.
14. Our analysis of focused group discussions with village communities indicate that only in 25% (5) 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

Department of wasteland development under the Ministry of Rural areas and Employment, Government of India, sanctioned the Integrated Wasteland Development Project (DPAP) - Phase I for Mahabubnagar district of Andhra Pradesh. The project encompassed treatment of 46000 ha of cultivable land in 92 watersheds in 46 mandals of Mahabubnagar 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. 1840 lakhs (Table 1) and to accomplish over a period of seven years from 1995-96 to 2002-03.

**Table 1. Development activity component-wise approved allocations and expenditure in the project.**

Components of developmental activities	Details of project funding (Rs. in lakhs)		
	Total allocation	Total expenditure	Deviation
Community organizations	73.60	27.25	46.35
Training	110.4	42.32	68.08
Works	1479.21	1392.68	86.53
Administrative costs	184	326.65	-142.65

District Rural Development Agency (DRDA) Mahabubnagar, 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.1840 lakhs grant at 50% contribution each from GOI and government of AP. DRDA-Mahabubnagar selected government and non-governmental agencies for project implementation during 1995-96 to 2000-2001. The details of 92 selected watersheds in respective mandals for treatment is given in Table 2.



**Table 2. Details of 92 watersheds covered by DPAP-I project for treatment in various mandals of Mahabubnagar.**

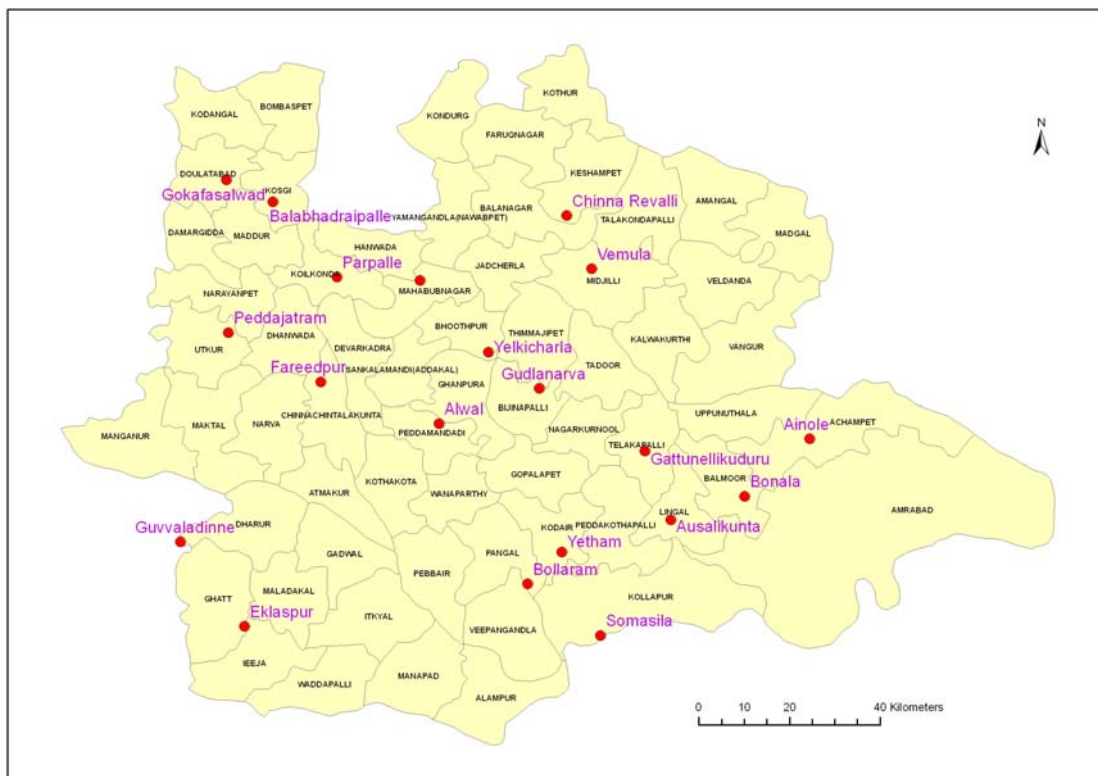
S No.	Mandal	No. of watersheds	S No.	Mandal	No. of watersheds
1	Addakal	2	25	Telkapally	2
2	Balanagar	2	26	Thimmajipeta	2
3	Boothpur	2	27	Keshampet	2
4	Farooqnagar	2	28	Midjil	2
5	Hanwada	2	29	Achampeta	2
6	Jadcherla	2	30	Amrabad	1
7	Koilkonda	2	31	Balmoor	2
8	Kondurg	2	32	Kodair	2
9	Kothur	2	33	Kollapur	2
10	Mahabubnagar	2	34	Lingal	2
11	Nawabpeta	2	35	Uppunuthala	2
12	Devarakadra	2	36	Weepangandla	1
13	Dhanwad	2	37	Atmakur	2
14	Doulatabad	2	38	CCkunta	2
15	Kosgi	2	39	Dharoor	2
16	Maddur	2	40	Ghanapur	2
17	Makthal	2	41	Ieez	2
18	Narva	1	42	Itikyal	2
19	Utkoor	3	43	Kothakota	1
20	Bijanepally	2	44	Maldakal	1
21	Gopalpeta	2	45	Pangal	2
22	Nagarkurnool	2	46	Pebbair	2
23	PK Pally	2	47	Peddmandadi	2
24	Tadoor	2	48	Wanaparthi	2
<b>Total</b>		<b>48</b>	<b>44</b>		

The project implementation started in the year 1996-97 and works were implemented in 92 watersheds as per approval. The project execution over run due to delay executing works and non-compliance of guidelines in the stipulated period of four years and was extended up to 2002-2003 which was completed in seven years.

## Agricultural Situation in Mahabubnagar

### Soils and Land use pattern

In Mahabubnagar, 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 Mahabubnagar 67% are red sandy loams, 20% black soil area and remaining 13% are dubba and mixed soils.



Map 1. Watersheds assessed for impacts were marked (•) in various mandals of Mahabubnagar.

The district map of Mahabubnagar with mandals and watersheds/villages assessed (pink font) for impact were marked in map 1.

### Rainfall

Mahabubnagar district receives a total normal rainfall of 754 mm per annum with 74% of annual rainfall contributes to main cropping season during South-West Monsoon from June to September and North-East monsoon provides 20% of rainfall between October and

December months. Drought conditions generally prevail during south-west monsoon season determines the crop production in the season.

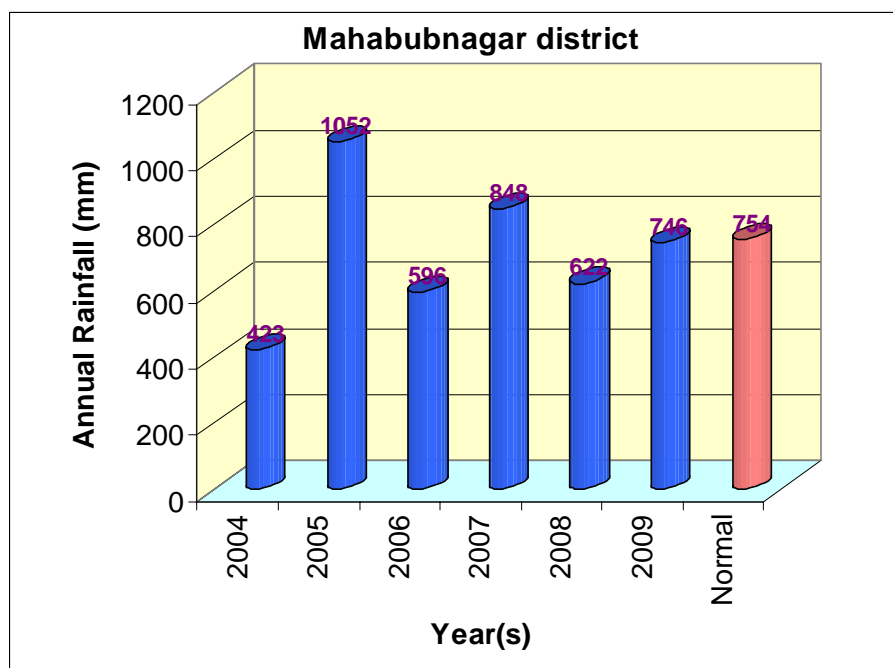


Figure 1. Annual rainfall of Mahabubnagar district during 2004-09 and district normal rainfall.

Rainfall in the district since crop season 2003-04 until 2007-08, i.e. immediately after the watershed implementation period up to 2008-09 rainfall has been erratic and below normal during 2004, 2006 and 2008 seasons in the district. Hence, farmers in some watersheds during focused group discussions mentioned about low rainfall that lead to less impact of watershed interventions/development.

## METHOD OF IMPACT ASSESSMENT

### Multi-disciplinary impact assessment team

Dr. S P Wani, Principal Scientist (Watersheds) and Regional Theme Co-ordinator (Asia),  
Global Theme-Agroecosystems

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

Mr. L S Jangawad, Sr. Scientific Officer (Agricultural Engineering)

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

ICRISAT's Global Theme on Agroecosystems, which was responsible for the impact evaluation of the DPAP watershed projects in Mahabubnagar, 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 Global Theme Agroecosystems 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 (1) Focused Group discussions, with participation of the local population, a crucial factor of a successful impact assessment; and (2) 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. 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 watersheds of DPAP-1, Mahabubnagar started with the ICRISAT team meeting Mr. Samuel, 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, Mahabubnagar.

Meeting with project staff helped us to finalize the list of watershed villages (Table 3) evenly spread across 48 mandals in Mahabubnagar district (Map 1, Mahabubnagar district) for impact assessment and scheduled our visit. We requested to make ensure the availability and participation of concerned APDs at FGD in watersheds in their respective mandals and their presence was quite helpful in organizing village meeting and field visits to watershed structures

**Table 3. List of selected DPAP-I watersheds and concerned APDs for impact assessment.**

S. No.	Name of the watershed	Mandal	Name of the PIA
1.	Alwal	Peddamandadi	Dy. Executive Engineer, MDT-VII, DCBC, Wanaparthy
2.	Ausalikunta	Lingal	SM, MDT-V, Achampeta
3	Balabadrappally	Kosgi	Vana Samrakshna Samithi, Kosgi
4	Bonala	Balamur	SM, MDT-V, Achampeta
5.	Bollaram	Devarakadra	Dy. Executive Engineer, MDT-II, Narayampet
6	Boyapally	Mahabubnagar	BAIF, Mahabubnagar
7.	Chinnarevalley	Balanagar	Dy. Executive Engineer, MDT-I, Mahabubnagar
8.	Eklaspur	IEEZ	ACF, MDT-VI, Wanaparthy
9	Elkicherla	Boothpur	PRDIS, Jadcherla
10.	Ettam	Kodair	Dy. Executive Engineer, MDT-V, Achampeta
11.	Fareedpur	CC kunta	ADA, MDT-VI, Wanaparthy
12.	Gattunellikuduru	Telkapally	DKRDA, Nagarkurnool
13.	Gokfasalwad	Doultabad	Dy. Executive Engineer, MDT-II, Narayampet
14.	Gudlanarva	Bijanepally	Dy. Executive Engineer, MDT-III, Nagarkurnool
15.	Guvvaladinne	Dharoor	Seva, Gadwal
16.	Inole	Achampeta	ADA, MDT-V, Achampeta
17	Parpalley	Koilakonda	ADA, MDT-I, Mahabubnagar
18	Peddajathram	Utkoor	ADA, MDT-II, Narayampeta
19	Somasila	Kollapur	Dy. Executive Engineer, MDT-V, Achampeta
20	Vemula	Midjil	Dy. Executive Engineer, MDT-IV, Kalwakurthy

### 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 Panchayat 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 (SHGs) 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.

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 focus-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 Mahabubnagar was done in 3<sup>rd</sup> and 4<sup>th</sup> weeks of September and 4<sup>th</sup> week of November 2009 and the actual field visits took place for three weeks in Mahabubnagar district with the help of project staff of DWMA, Mahabubnagar.

### **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 the 20 watersheds assessed during September and November 2009.

**Impact Assessment Report**  
**Alwal Watershed, DPAP-I Batch**  
**Peddamandade Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Alwal
iii. Names of villages in the Watershed:	Alwal
iv. Villages/Mandal/District:	Alwal/Peddamandade/Mahabubnagar
v. Name and Address of PIA:	Dy Executive Engineer, MDT-VII, DCBC
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget:	Approved: Rs. 20 lakhs	Spent: Rs.15, 51400
ii. Expenditure incurred as per guidelines	YES	
iii. Works executed as per Records	Yes, CDs: 20 (4-5 CDs damaged and silt filled), PTs: 50 (some require maintenance), Field Bunding: 500-600acres, RFDs/LSD: 130 or more, Feeder Channels: 6, two for a big tank and four for 4 small tanks.	
iv. Whether watershed committees exists	Yes, Chairman: Srinivas Reddy, President: M. Venkat Reddy, Secretary: G. Venkata Reddy, Existing and functioning with regular meetings on issues related to revolving of WDF and other additional fund.	
v. if exists, activities of the committees	Still functioning with active involvement of president and committee members. WDF has been used as input credit to farmers on interest and increased credit mobilization capacity to WA, with equal and genuine opportunity for farmers to access credit from the Watershed Association.	

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

Entry Point Activity was decided based on community requirement to form a drainage canal of 200 m length in the village to facilitate good drainage thereby good hygiene. It was constructed at a cost of Rs.1, 00,000.

**6. Qualitative Parameters of Impacts**

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members:15
	Before	After	Before	After	Male:11
	-	8	-	1	Female:4
ii. Records of meetings properly updated	Watershed Committee meets once in a month, or as and when required, Watershed Association meets once in six months.				
iii. Liaison with scientific institutions established	WC members and farmers visited ICRISAT and Ralegaon Siddi to learn about efficient NRM technologies				
iv. Watershed Development Fund collected? and its utilization	Rs.260000/- was collected as WDF and deposited, later it has been utilized further to provide input credit to farmers on low interest. Fund so multiplied to more than Rs. 700000 is being used as loans prioritizing based on need equitably to members.				
v. Self Help Groups	No:1		Revolving fund: Rs.20000		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	Percolation tanks were dug even in forest lands for GW recharge. There is no CPR as all the land was distributed to SC/ST farmers and landless people.				
vii. Benefits to weaker sections (women, dalits & landless)					

**7. Quantitative Parameters of Impacts**

i.Improvements in water table/ water availability	Open wells:100 (completely dried due to continuous droughts for 4 years); bore wells: 300-400 are functional, drinking water is available because of watersheds development
ii. Additional area under cultivation/horticulture/ afforestation	1000 acres under additional cultivation for second crop. 10,000 mango plantations but survival was 2000 plants.
iii. Changes in cropping pattern and intensity	Paddy, groundnut, sorghum, pigeon pea, castor crops in double cropping systems
iv. Changes in agricultural productivity	Paddy:25-30bags/acres (75 kg), groundnut: 25-30 bags (40 kg), sorghum:5-6bags/acre, pigeon pea: 2 bags/acre
v. Changes in fodder & fuel wood availability	Scarcity of fodder during drought years when paddy was not taken up in two crops.



vi. Changes in size and character of livestock holdings	Milk Buffaloes increased in number by more than 25% since the watershed development.
vii. Status of grazing land & their carrying capacity	There are no grazing lands as all vacant lands were distributed to SC/ST farmers.
viii. Employment generated due to implementation of project	Complete participation was ensured during implementation thus ensured employment during development and at present employment is sufficient
ix. Change in household category, total & source	NA
x. Freedom from Debt and reduction in degree of dependence of money lenders	Commercial Banks and APGV provides input credit to farmers; WA provides credit to most needy on priority while some people approach private money lenders.
xi. Reduction in out-migration (case studies)	30% out migration still continues for the sake of higher payment in cities and wage defaulter to labor in village.
xii. Reduction in drought vulnerability of the watershed	Yes, as the productivity and incomes increased after the watershed development at least medium and large holder farmers expressed their ability to withstand droughts.
xiii. Detailed case studies of specific farmers impacted by the project	1.Jagan Mohan Reddy developed 12 acres mango plantation fruit bearing since 5 yrs. 2.Venkata Reddy developed 20 acres of fruit bearing mango with mean net income of Rs.16000/acre/annum
xiv. Photographs showing work + its impact	

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

**9. Specific datasets on different impact parameters:** NA

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

- Relevance of the location of the structure was appropriate, considering technical inputs.
- Physical measurements were matching with M book), quality of works was good and after maintenance of the structures has been fairly to the standards, needs silt removal at some structures.
- Drinking water availability for villagers needs and cattle population requirements were very well met during drought years also.
- Improvement in number of bore well (300-400 bore wells -> 300 deep) dug due to water availability and pumping hours in most of the bore wells is continues and available round the year.
- Thousand acres area is utilized for two crops during two seasons and crop yields increased in the range of 30% to 40% in different years.

- Proper utilization of water and good governance are the issues which are reasons for successful implementation of watershed development as informed by the president.



Picture 1. President Mr Srinivas Reddy, WA, Alwal who has illustriously used WDF for the benefit of WA members in the absence of specific guidance.

**Impact Assessment Report**  
**Ausalikunta Watershed, DPAP-I Batch**  
**Lingal Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Ausalikunta
iii. Names of villages in the Watershed:	Ausalikunta
iv. Villages/Mandal/District:	Ausalikunta/Lingal/Mahabubnagar
v. Name and Address of PIA:	SM, MDT-V, Achampeta
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	NA
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs. 16, 00500	Approved: 20 lakhs	Spent: Rs. 16, 00500
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Check dams : 4; Percolation Tanks : 25; Rockfilled dams: 150; Bunding was done in 65% of area of watersheds (300 acres)	
iv. Whether watershed committees exists	Yes, Chairman : Abdul Sattar Secretary : Madhava Reddy President : Venkateswarlu	
v. if exists, activities of the committees	Nil	

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

NA

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members
	Before	After	Before	After	Male
		NA		NA	Female
Describe:					
ii. Records of meetings properly updated	Watershed Committee meets once in a month, or as and when required, Watershed Association meets once in six months.				
iii. Liaison with scientific institutions established	WC members and farmers visited ICRISAT and Ralegaon Siddi to learn about efficient NRM technologies				
iv. Watershed Development Fund collected? and its utilization	Rs.1,29,000 available in the bank with the control of association secretary, however no advise from officials on utilization for maintenance works				
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	No information on CPR development				
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/ water availability	10 to 12 feet's increased in water levels for 3 to 4 years
ii. Additional area under cultivation/horticulture/afforestation	200 to 300 acres increased under groundnut cultivation. 25 acres mango plantation were done only for 5 acres survived, Horticulture development was a failure as the activity was neglected
iii. Changes in cropping pattern and intensity	100 acres brought under paddy cultivation only 10 bore wells are dug. Cropping intensity increased by 100% in paddy area.
iv. Changes in agricultural productivity	Cotton, maize, sunflower, paddy only, double cropping is practiced in paddy fields with sunflower as second crop.
v. Changes in fodder & fuel wood availability	NA
vi. Changes in size and character of livestock holdings	Milk production increased but has no relevance to watershed development as categorically responded by farmers.
vii. Status of grazing land & their carrying capacity	NA
viii. Employment generated due to implementation of project	Employment available during watershed development, later there is no considerable employment for rural poor.

ix. Change in household category, total, & source-	NA
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans are scarce to access still dependant on money lenders in the village.
xi. Reduction in out-migration (case studies)	Out migration reduced significantly because of watershed development and due to NREGS also.
xii. Reduction in drought vulnerability of the watershed	Some farmers benefitted by bore wells expressed the ability to with stand consecutive drought years for two seasons at least.
xiii. Detailed case studies of specific farmers impacted by the project	NA
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

NA

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

- ◆ 10 to 12 feet water available in the open well because of good recharge of ground water.
- ◆ After maintenance of structures were fair, however, requires desilting and apron repairs for three structures.
- ◆ Improved ground water after good rainy seasons and water available for second crop supplemental irrigation.
- ◆ Increased in area under cultivation by 300 acres and crop yields increased by 25% in *kharif* season with additional yields with *rabi* crops in paddy areas.

**Impact Assessment Report**  
**Balabadrayapally Watershed, DPAP-I Batch**  
**Kosgi Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Balabadrayapally
iii. Names of villages in the Watershed:	Balabadrayapally
iv. Villages/Mandal/District:	Balabadrayapally/Kosgi/Mahabubnagar
v. Name and Address of PIA:	Vana Samrakshana Samithi, Kosgi
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	NA
ii. Non arable land (ha)	NA
iii. Government/Community land (ha)	NA
iv. Private land (ha)	NA
v. Treated arable	500 ha
vi. Treated non arable	NA

**3. Verification financial and other Records**

i. Total Budget:	Approved: Rs. 1565000	Spent: Rs.1609415
ii. Expenditure incurred as per guidelines	Rs.1609415	
iii. Works executed as per Records	CDs: 6 (Breaches Noticed), Bunding was taken up in 305 acres and it has been in good condition, PTs :12 (Revetment stolen), LBS/ RFDs: 220 (Not in good condition, boulders removed and used for other purposes) CCTs=35 m length were dug, desilting of a tank was done	
iv. Whether watershed committees exists	Chairman : T. Ravindra Reddy, Members : 10 President : T. Rami Reddy, Gramin Member : 2 Secretary : Ibrahim, GP member : 2	
v. if exists, activities of the committees	Nil	

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

EPA: No entry point activity was taken up in this project.

## 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 :10
	-	15	8	17	Female : 2
Describe:					
ii. Records of meetings properly updated	Watershed Committee meets for every 15 days once Watershed Association meets monthly once				
iii. Liaison with scientific institutions established	Secretary under went a training with MDT on accounts maintenance, secretary and chairman visited Ralegaon siddi to assess NRM technologies.				
iv. Watershed Development Fund collected? and its utilization	Rs. 7500000				
v. Self Help Groups	No:17		Revolving fund: Rs. Nil		
V.O functioning:	NA		Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	2 acres of afforestation was taken up.				
vii. Benefits to weaker sections (women, dalits & landless)	NA				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Open wells: 50 (Water up to December); Bores: 200 (up to April) water available year round after check dams were constructed with watershed development.
ii. Additional area under cultivation/horticulture/afforestation	86 acres was brought under horticultural plantation, 61 acres cultivated under sweet oranges and mango was planted in 25 acres with more than 90% survival.
iii. Changes in cropping pattern and intensity	Paddy, Ground nut, Pigeon pea, Sweet orange are the changes in cropping
iv. Changes in agricultural productivity	Paddy : 25 bags/ acre, Ground nut : 15 bags/acre, Pigeon pea : 6-7 bags/acre
v. Changes in fodder & fuel wood availability	NA
vi. Changes in size & character of livestock holdings	Milch cows increased in number from 100 approximately to 180 at present
vii. Status of grazing land & their carrying capacity	Fodder scarcity is observed in some seasons even after watershed development due to droughts.
viii. Employment generated due to implementation of project	Employment available to those who lived in the village during watershed development but further no significant improvement in labor employment in the farms.

ix. Change in household category, total & source	NA
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	APGV bank provides crop loans and money lenders are available to provide loan @ 3% interest per month.
xi. Reduction in out-migration (case studies)	No change in migration, continuing with 20% (200) of people migrating to cities.
xii. Reduction in drought vulnerability of the watershed	Could not assure themselves against drought vulnerability in the event of consecutive years of drought.
xiii. Detailed case studies of specific farmers impacted by the project	<ol style="list-style-type: none"> <li>1. T Chandra Sekhar Reddy in his 4 acres of Sweet Orange planted took up 4 crops of fruit harvest. Earned Rs. 2 lakhs/annum for 4 acres of crop.</li> <li>2. T Pratapa Reddy in his 2 acre of Sweet Oranges planted - had two crop harvests. Earned an income of 1 lakh for 2 acres/annum in two years</li> </ol>
xiv. Photographs showing work + its impact	

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

**8. Specific datasets on different impact parameters:**

NA

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

- Crop yields improved due to water availability for supplemental irrigation of rabbit crops under bore wells.
- Ten bore wells were recharge and revived
- Relevance of location of the structure was appropriate, using technical considerations
- Physical measurements were matching with M book as was verified during the visit
- After maintenance of the structures was poor, as silt deposited resulting in low storage of water behind the Structure, side walls breached due to floods in October 2009, needs repairs.





Picture 2. A check dam in Balabradrayapally completely silted-up due to lack of maintenance, reducing water storage.

**Impact Assessment Report**  
**Banala Watershed, DPAP-I Batch**  
**Balmoor Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Banala
iii. Names of villages in the Watershed:	Banala
iv. Villages/Mandal/District:	Banala/Balmoor/Mahabubnagar
v. Name and Address of PIA:	SM, MDT-V, Achampeta
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	NA
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.16, 75000	Approved: Rs. 20 lakhs	Spent: Rs.16,75,000
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per records	Gully Controls: 60-70, Good and compacted Bunding in 400 hectares, Check dams: 4, Percolation Tanks: 6.	
iv. Whether watershed committees exists	Yes, Chairman: Ramu President : Kassum	
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)**

Nil

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members
	Before	After	Before	After	Male
	-	NA	-	5	Female
Describe:					
ii. Records of meetings properly updated	Watershed Committee meets once in 15 days intervals; Watershed Association meets monthly once.				
iii. Liaison with scientific institutions established					
iv. Watershed Development Fund collected? and its utilization	WDF Rs. 1,70,000 deposited in Bank under the control of watershed secretary.				
v. Self Help Groups	No: NA		Revolving fund: Rs.50,000		
V.O functioning:			Savings:		
Utilization of loans:	Agriculture implements, own needs				
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	NA				
vii. Benefits to weaker sections (women, dalits & landless)	NA				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	5-6 feet raise in ground water levels in the open wells in watershed, at 90-120 feet water is available for bore wells.
ii. Additional area under cultivation/horticulture/afforestation	30 acres brought under cultivation after watershed interventions. 50 acres mango was developed with fencing around farms because of uncontrolled grazing by goat & Sheep herds.
iii. Changes in cropping pattern and intensity	Maize, sunflower, groundnut, pigeonpea, cotton, paddy
iv. Changes in agricultural productivity	Yield of groundnut (10-12Q), Cotton (6-8Q), Paddy (8-10Q) per hectare increase was reported. Cropping intensity increased by 50% only.
v. Changes in fodder & fuel wood availability	Fodder availability increased due to introduction high yielding grasses.
vi. Changes in size and character of livestock holdings	Number cows increased in the village for producing/rearing bulls. Sheep and goat population also significantly increased
vii. Status of grazing land & their carrying capacity	No grazing land except in forest land
viii. Employment generated due to implementation of project	Increased if rainfall is good. No labor migration when watershed works were executed. Good employment generated.

ix. Change in household category, total & source	NA
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Debt from money lenders reduced, because bank loans are available without difficulty.
xi. Reduction in out-migration (case studies)	No change in migration and continued as men do not spend on liquor when they work outside their village and save money when migrate to cities.
xii. Reduction in drought vulnerability of the watershed	Can withstand better due to higher agricultural incomes in other years.
xiii. Detailed case studies of specific farmers impacted by the project	Mr. Jitendar Reddy has 2 acres of mango with a check dam recharging groundwater nearby his field and Mr. Lal Reddy has 4 acres of mango orchards developed through watershed program. Both of them have income from mango orchards for the past 3 years
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

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

- After maintenance of the structures is fair, however required repairs for breaches at side walls and removal of silt behind the check dams sooner for better use of the structures.
- Some Gully Control Structures damaged and require repair and maintenance.

**Impact Assessment Report**  
**Bollaram (Koilsagar) Watershed, DPAP-I Batch**  
**Devarakadra Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Bollaram
iii. Names of villages in the Watershed:	Bollaram
iv. Villages/Mandal/District:	Bollaram/Devarakadra/Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-II, Narayampet
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	NA
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	NA

**3. Verification financial and other Records**

i. Total Budget: Rs. 15,73,100	Approved: Rs. 20 lakhs	Spent: Rs. 15,51,400
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes, check dams: 8,	
iv. Whether watershed committees exists	Chairman : Tirumalesa	
v. if exists, activities of the committees	Nil	

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

EPA - A school building was constructed with Rs 1.0 lakh includes 30% contribution from the villagers.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members :11
	Before	After	Before	After	Male:11
		8			Female: 0
ii. Records of meetings properly updated	Records verified & audited				
iii. Liaison with scientific institutions established	Chairman, President & secretaries visited CRIDA, Hyderabad and some farmers visited KVK, Madnapur				
iv. Watershed Development Fund collected? and its utilization	WDF of Rs. 3,00,000 was collected from the beneficiaries and deposited in the Bank A/c of Watershed Association, at present account balance of Rs. 80,000/- is available.				
v. Self-Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/ water availability	Change in GWL & availability can not be attributed to watershed development as Koilsagar irrigation dam was constructed submerging some part of the watershed and storing water in the reservoir.
ii. Additional area under cultivation/horticulture/ Afforestation	No additional area brought into cultivation, bunding was done in the watershed area.
iii. Changes in cropping pattern and intensity	
iv. Changes in agricultural productivity	
v. Changes in fodder & fuel wood availability	
vi. Changes in size & character of livestock holdings	
vii. Status of grazing land & their carrying capacity	
viii. Employment generated due to implementation of project	
ix. Change in household category, total & source	

x. Freedom from debt and reduction in degree of dependence of money lenders (case studies)	
xi. Reduction in out-migration (case studies)	
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

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

- Size & type of the structure: Percolation tank: 8 m-L, H-1.2m
- Relevance of the location, technical inputs of structure: Inappropriate
- Physical measurements (whether matching with M book) : Yes
- Quality of the work : Fair
- After maintenance of the structure : Poor
- Bunding reduced soil erosion & conserved rain water
- Some bunds breached away and were not repaired
- Some SWC STRUCTURES are working alright & giving benefits. Koil sagar, a big dam was constructed after the watershed project implementation in this village, shows lack of coordination of two implementing agencies.
- Lot of area submerged under Koilsagar dam, only a small area is still with farmers for cultivation.



**Picture 3. Check dam and Loose Boulder structures in Bollaram watershed under DPAP-1.**



**Impact Assessment Report**  
**Boyapally watershed, DPAP-I Batch**  
**Mahabubnagar mandal, Mahabubnagar district Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Boyapally
iii. Names of villages in the Watershed:	Boyapally
iv. Villages/Mandal/District:	Boyapally/Mahabubnagar/Mahabubnagar
v. Name and Address of PIA:	BAIF, Mahabubnagar
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget Rs.16,57700	Approved: Rs. 20 lakhs	Spent: Rs.16,02,000
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Check Dams: 2, Percolation Tanks: 2, Rock Filled Dams: 150, Gully control structures : 400, Bunding: Considerable area covered	
iv. Whether watershed committees exists	Sarpanch : Narsimulu UPA Surpanch : P Anjaneyulu Secretary(W/S) : Shyam Sunder 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)**

Road-side drains in the village were constructed spending Rs.85000/- with villagers contribution (30%) through Shramadhanam.

## 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: 11
	-		-		Female: 1
Describe:					
ii. Records of meetings properly updated	Watershed committee meets every 15 days and Watershed association meets every month.				
iii. Liaison with scientific institutions established	Watershed Committee member and Farmers were taken to Shadnagar for an exposure visit.				
iv. Watershed Development Fund collected? and its utilization	Rs. 1,29,000 was collected and deposited in WDF account; however there are no instructions to use that money for maintenance of structures and amount is not used so far.				
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	No CPRs developed.				
vii. Benefits to weaker sections (women, dalits & landless)	NA				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Ground water levels increased by 5 to 8 feet, Irrigated area increased. About 25-30 open wells and 50-60 tube wells are operational in the watershed. Bunding increased water conservation in situ and recharge, protected soil erosion.
ii. Additional area under cultivation/horticulture/afforestation	NA
iii. Changes in cropping pattern and intensity	Sorghum/pigeonpea, paddy, groundnut, ragi and castor are major crops.
iv. Changes in agricultural productivity	Before watershed, groundnut pod yields were 10-15 bags/acre increased to 25-30 bags/acre now; and Paddy from 20 bags/acre before increased to 30 bags/acre now
v. Changes in fodder & fuel wood availability	Fodder shortage is not there
vi. Changes in size and character of livestock holdings	Milch buffaloes and cows increased from 600 to 700 in number; however, draught purpose cattle reduced because of maintenance problems.
vii. Status of grazing land & their carrying capacity	
viii. Employment generated due to implementation of project	Employment increased due to increased agricultural activity.

ix. Change in household category, total & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Dependence on private money lenders
xi. Reduction in out-migration (case studies)	Migration decreased by about 60% and 30% to 40% migration still continuing to Mumbai.
xii. Reduction in drought vulnerability of the watershed	In the absence of good rainfall, farmers faced vulnerability, but drinking waters situation is better than in non-watershed villages.
xiii. Detailed case studies of specific farmers impacted by the project	
xiv. Photographs showing work + its impact	

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

8. Specific datasets on different impact parameters:

NA

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

- After maintenance of the structures was Fair
- Wells were recharged and ground water is available



**Picture 4a. Focused group discussion was held in Boypally village secretariat.**



**Picture 4b. A check dam in Boypally with breaches to the apron.**

**Impact Assessment Report**  
**Chinnarevally Watershed, DPAP-I Batch**  
**Balanagar Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Chinnarevally
iii. Names of villages in the Watershed:	Chinnarevally
iv. Villages/Mandal/District:	Chinnarevally/Balanagar/ Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-I, Mahabubnagar
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs. 1657585	Approved: Rs.16,57,585	Spent: Rs. 16,57,070
ii. Expenditure incurred as per guidelines	Rs. 1657070	
iii. Works executed as per Records	Yes, CDs: 4 (side walls breaches noticed and confirmed), PTs: 1, Field Bunding: 345 ha, RFDs/LBS: 200 plus, Sunken pits: 30	
iv. Whether watershed committees exists	Yes, Chairman: M.Chandraiah President: K.Chandramohan Secretary: B.Kasiram	
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)**

Entry Point Activity: Community contributed through 50% Shramadhanam for a bus shelter constructed in the village at a cost of Rs.50400/-

## 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: 10
			0	5	Female:1
Describe:					
ii. Records of meetings properly updated	Watershed Committee meeting were held monthly once Watershed Association meetings were held once in two to six months				
iii. Liaison with scientific institutions established	WC members were trained at DCBC, Shadnagar on Horticulture plantation, trained on Agarbathi preparation, visit to Raligam Siddi in Maharashtra on NRM efficient use				
iv. Watershed Development Fund collected? and its utilization	RS. 98, 540				
v. Self Help Groups	No:		Revolving fund: Rs.40,000		
	V.O functioning:		Savings:		
	Utilization of loans:				
	Bank linkages established:				
vi. Planned CPRs sustainable & equitable development	Bunding in 2 to 3 acres				
vii. Benefits to weaker sections (women, dalits & landless)	NA				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Open wells: 50 (10' to 15' water column); bore wells: 200 (depth-180-200). 2 to 3m increase in water level in open wells. All open wells dried now, water available in bore wells up to May
ii. Additional area under cultivation/horticulture/afforestation	Mango-25 acre, teak- on farmers' field bunds based on their interest, 40 acres additional area brought under cultivation due to bore wells
iii. Changes in cropping pattern and intensity	160% crop intensity possible and practiced cotton, maize, pigeon pea, castor, paddy cropping.
iv. Changes in agricultural productivity	Cotton-10-12Q/ha, maize-15-20Q/acre, pigeon pea-2 to 3 Q/acre, castor 3 to 5 Q/acre, paddy-22 bags/acre
v. Changes in fodder & fuel wood availability	Fodder availability increased with maize and paddy cultivation.
vi. Changes in size and character of livestock holdings	Before watershed milk production was 120 lts in the village. After watershed - 320 lts due to increase in improved breeds of cows and buffaloes increased.
vii. Status of grazing land & their carrying capacity	Improved grass availability, each farmer has 0.5 to 1 acre grass land cultivated for cattle fodder.

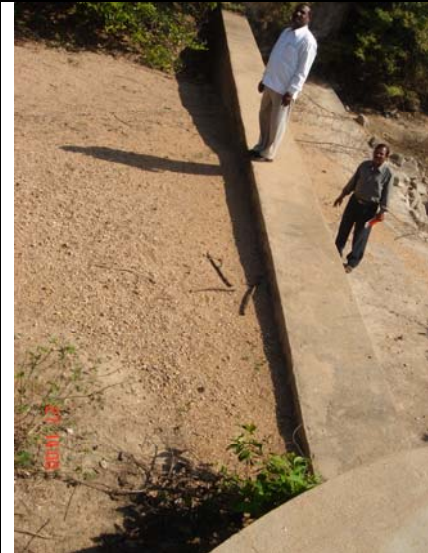
viii. Employment generated due to implementation of project	During watershed development stage, employment was available in plenty, however, now it is limited to increased farm operations only.
ix. Change in household category, total & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans were available to farmers in the village, no money lenders were providing loans on interest.
xi. Reduction in out-migration (case studies)	5% migration continuing even after watershed development
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	(1) Lohit Reddy, 8 acres mango orchard bearing since 5 years, fetches a net income of Rs. 20000/acre/annum. (2) Chenna Kesavulu B, 3 acres of mango orchard bearing since 5 years, earns an income of Rs.10000/acre/annum
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

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

- Location of structure considering technical aspects is appropriate.
- Physical measurements (whether matching with M book): Yes
- Quality of the works: Good
- After maintenance of the structure: Fair
- Bore well yields are very good
- Most of the structures silted up, needs removal of silt for effective utilization
- Percolation Tank is very intact, check dams were of major use for 10 farmers



Picture 5a. Check dam on KRpalli vagu, Chinnarevally which is fully silted and apron was eroded.



Picture 5b. Check dam across Kondareddy Palli cheruvu vagu Chinnarevally needs filling up of stone packing of apron.

**Impact Assessment Report**  
**Eklaspur Watershed, DPAP-I Batch**  
**Teeja Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I
ii. Name of the watershed:	Eklaspur
iii. Names of villages in the Watershed:	Eklaspur
iv. Villages/Mandal/District:	Eklaspur/Teeja/Mahabubnagar
v. Name and Address of PIA:	ACF, MDT-VI, Wanaparthy
vi. Total area of the watershed:	500 ha

**2. Ownership pattern of land:**

i. Arable land (ha)	
ii. Non-arable land (ha)	
iii. Government/ Community land (ha)	
iv. Private land (ha)	
v. Treated arable (ha)	500 ha
vi. Treated non-arable (ha)	

**3. Verification financial and other Records**

i. Total cost: Rs. 15,09000	Approved: Rs.20 lakhs	Spent: Rs.15,09,000
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes	
iv. Whether watershed committees exists	Yes, Srinivas, watershed committee Secretary	
v. if exists, activities of the committees	Nil	

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



## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members:
	Before	After	Before	After	Male:
					Female:
Describe:					
ii. Records of meetings properly updated					
iii. Liaison with scientific institutions established					
iv. Watershed Development Fund collected? and its utilization					
v. Self Help Groups	No:		Revolving fund:		
V.O functioning:				Savings:	
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	
ii. Additional area under cultivation/horticulture/afforestation	40 acres of paddy is additional brought under cultivation after the watershed development.
iii. Changes in cropping pattern and intensity	Cotton, ground nut and paddy crops replaced sorghum and castor crops.
iv. Changes in agricultural productivity	
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	
vii. Status of grazing land & their carrying capacity	
viii. Employment generated due to implementation of project	
ix. Change in household category, total & source	

x. Freedom from debt and reduction in degree of dependence of money lenders (case studies)	
xi. Reduction in out-migration (case studies)	
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	
xiv. Photographs showing work + its impact	

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

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

Sweet oranges which were planted under horticulture improvement during watershed development has been up rooted due to non-availability of water as indicated by some farmers. However, some farmers contradicted and told that poor growth of low quality plants and lower price of sweet oranges were main reasons than non-availability of water *per se*.

Relevance of the location for the structure is fair which has taken consideration of technical inputs. Physical measurements are matching with M book and Quality of the work is fair. Maintenance of the structures is poor after the watershed project was completed.

After the flash floods in Mahabubnagar, watershed structures in Eklaspur got breached, damaged and silted up.



**Picture 6. In Eklaspur all watershed structures were damaged after devastating floods during October 2009 in Mahabubnagar.**

**Impact Assessment Report**  
**Elkicherla watershed, DPAP-I Batch**  
**Boothpur Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Elkicherla
iii. Names of villages in the Watershed:	Elkicherla
iv. Villages/Mandal/District:	Elkicherla/Boothpur/Mahabubnagar
v. Name and Address of PIA:	PRDIS, Jadcherla
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.17,25100	Approved: Rs. 20 lakhs	Spent: Rs.15,40,000
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Check dams: 6; Percolation Tanks: 2; Bunding in 1000 acres, no farm ponds and Gully control Structures for 1200 m.	
iv. Whether watershed committees exists	Secretary : B. Ranganna	
v. if exists, activities of the committees	NIL	

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

Not done due to lack of commonly agreed decision in finalizing activity for entry point activity.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members : 11
	Before	After	Before	After	Male : 9
	-	8	-		Female : 2
ii. Records of meetings properly updated	Watershed committee meets every 15 days and Watershed Association meets every 3 months.				
iii. Liaison with scientific institutions established	Some farmers were taken to Shadnagar on exposure visit				
iv. Watershed Development Fund collected? and its utilization	WDF was contributed by some members and approximately Rs 80,000/- was put in post office, as per Project Director some did not contribute to WDF in this watershed.				
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	CPRs not developed				
vii. Benefits to weaker sections (women, dalits & landless)	No works for weaker section				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Groundwater increased and greenery increased. Tube wells also recharged (approximately 100) up to 4 feet; tube wells had sufficient water during last year while tube wells in untreated area became dry in the previous summer. Water available at 110 feet deep in tube wells of treated area while water is at 180-300 feet deep in tube wells of untreated area.
ii. Additional area under cultivation/horticulture/afforestation	About 500 acres brought under cultivation. Approximately 20 hectares of mango and Sweet lime plantation was done but only 6 hectares survived. Horticulture plants were given along with 3 years maintenance assistance.
iii. Changes in cropping pattern and intensity	Paddy area increased under irrigation. Crop Intensity increased with double cropping of Paddy in rainy season and groundnut in rabi to 160%
iv. Changes in agricultural productivity	Yields of Paddy increased up to 30 bags / acre, groundnut pod yield up to 20 bags / acre with watershed interventions. Paddy yield was 20 bags/acre and Groundnut pod yields were 15 bags/acre before Watershed interventions.
v. Changes in fodder & fuel wood availability	Milch animals increased due to increased fodder availability

vi. Changes in size and character of livestock holdings	Milch animals increased by about 100, i.e. almost doubled
vii. Status of grazing land & their carrying capacity	
viii. Employment generated due to implementation of project	Employment increased by 100%, number of labor days of work availability almost doubled with rabi cropping additionally in the watershed area.
ix. Change in household category, total & source	NA
viii. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Dependence on private money lenders decreased. Now, farmers have their own funds for inputs. Financial situation of farming families improved.
ix. Reduction in out-migration (case studies)	NREGS has reduced out migration. People are back to villages due to sufficient work availability and higher wages.
x. Reduction in drought vulnerability of the watershed	Due to more groundwater availability they could withstand drought, untreated area no crops
xi. Detailed case studies of specific farmers impacted by the project	Mr. S. Venkata Reddy S/o Narsimha Reddy had good benefits due to horticulture developed because of improved ground water. Mr. Balaswamy also got good benefit from watershed activities
xii. Photographs showing work + its impact	

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

8. Specific datasets on different impact parameters:

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

- Relevance of the Location of the structures was appropriate, considering technical inputs.
- Physical measurements matched with Measurement books and structures are of good quality.
- 100 Bore well in the watershed and ground water available at 80 ft deep. Damages were there for water harvesting structures and repair and maintenance were not done so far.



**Picture 7a. Focused group discussion in Elkicherla with watershed beneficiaries.**



**Picture 7b. A check dam with breaching near the side wall.**

**Impact Assessment Report**  
**Ettam Watershed, DPAP-I Batch**  
**Kodair Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Ettam
iii. Names of villages in the Watershed:	Ettam
iv. Villages/Mandal/District:	Ettam/Kodair/Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-V, Achampeta
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.15,27600	Approved: Rs. 20 lakhs	Spent: Rs.14,77,600
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Yes, Check dams: 3, Percolation tanks: 6, Bunding: 100 ha, RFDs/GC: 30, cattle drinking tanks: 5, Gobar gas plants: 3 (non functional)	
iv. Whether watershed committees exists	Yes, Chairman: K.Sangam President: C. Chandra Reddy Secretary: M. Raman Goud	
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: Drinking/irrigation water tank revetment of the bank with stone was done.



## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members: 13
	Before	After	Before	After	Male:11
	-	Owners executed works	-	NA	Female:2
ii. Records of meetings properly updated	WC: meeting once monthly WA: once in 3 months				
iii. Liaison with scientific institutions established	Visited other watershed villages				
iv. Watershed Development Fund collected? and its utilization	RS.1,40,000/- deposit handed over to Watershed Development Team member of the office DWMA with instructions from PD, DWMA.				
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Ground water level increased by 10-15 feet after watershed implementation.
ii. Additional area under cultivation/horticulture/afforestation	60-70acres of additional area brought under annual crops. 100 acres of mango plantation was given and in 50% of the area orchards were established properly.
iii. Changes in cropping pattern and intensity	Paddy area increased, groundnut sorghum/pigeonpea, castor/pigeonpea systems increased in 150 acres area.
iv. Changes in agricultural productivity	30-40 bags paddy, groundnut 8 to10 Q/acres, no change in sunflower yields of 3 to 5 Q/acres, because new improved varieties are not used.
v. Changes in fodder & fuel wood availability	<i>Stylosanthes hamota</i> grass on field bunds increased fodder availability earlier but less fodder available this year due to low rainfall.
vi. Changes in size and character of livestock holdings	Number of Buffaloes increased sheep and goat number also increased.
vii. Status of grazing land & their carrying capacity	No increase in grazing land area and capacity
viii. Employment generated due to implementation of project	Employment increased during the watershed development works and due to increased farm work.

ix. Change in household category, total & source	NA
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Role of money lenders decreased and interest rate was reduced to 24% from 36-48% with money lenders. Bank loans are available; however obtaining loans from banks has been difficult as informed by farmers.
xi. Reduction in out-migration (case studies)	Reduced migration greatly due to NREGS and no migration recently.
xii. Reduction in drought vulnerability of the watershed	Tolerance and withstanding drought has been better compared to before watershed development.
xiii. Detailed case studies of specific farmers impacted by the project	Mr. Megha Reddy, has planted 2 acres of mango and could establish good mango orchard with Banishan variety, he earns net profit of Rs.10,000 per acre/annum
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

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

- Mango and sweet oranges orchards plantations were good; farmers indicated that they were supplied with 80% good and 20% rogue plants, hence suffered some loss of trees in their orchards.
- Farmers requested that mango orchards fencing should be supported from WS schemes. Watershed farmers should be allowed to give permission for bore wells for orchards.
- Since this area is wild boar infested, watchmen sheds should be provided in the orchards to control wild pigs' problem.



Picture 8. Focused group discussion with beneficiaries in Ettam watershed.

**Impact Assessment Report**  
**Fareedpur watershed, DPAP-I Batch**  
**Chinna Chintakunta Mandal, Mahabubnagar District, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Fareedpur
iii. Names of villages in the Watershed:	Fareedpur
iv. Villages/Mandal/District:	Fareedpur/CCKunta/Mahabubnagar
v. Name and Address of PIA:	ADA, MDT-VI, Wanaparthy
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs. 15,26,900	Approved: Rs. 20 lakhs	Spent: Rs.12,54,300
ii. Expenditure incurred as per guidelines		
iii. Works executed as per Records	Check Dams: 2 (good conditions but side breaching for one check dam), Rock filled dams/Loose Boulder Structures: 100 and bunding was done in 300 acres.	
iv. Whether watershed committees exists	Chairman : Mr. M. Venkata Reddy President : Mr. Basavaraj Secretary : Mr. Peer Mohammad	
v. if exists, activities of the committees	NIL	

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

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members
	Before	After	Before	After	Male
					Female
ii. Records of meetings properly updated					
iii. Liaison with scientific institutions established					
iv. Watershed Development Fund collected? and its utilization	NA				
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Soil erosion was completely ceased. Ground water level in open wells increased by 2 m and water is available round the year in bore wells.
ii. Additional area under cultivation/horticulture/afforestation	19 acres of sweet oranges was planted under horticulture development but 16 acres survived.
iii. Changes in cropping pattern and intensity	Castor/ pigeonpea, cotton and paddy are grown below the catchment.
iv. Changes in agricultural productivity	
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	
vii. Status of grazing land & their carrying capacity	
viii. Employment generated due to implementation of project	
ix. Change in household category, total, & source-	

x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Bank loans, Money lenders
xi. Reduction in out-migration (case studies)	50% migration reduced; as now 200 people migrate every year recent times
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	1. Umamaleswara Reddy - 12 acres - sweet Oranges 2. Maniappa Telaya - 7 acres - Sweet Oranges 3. Ramulu K - 3 acres - Sweet Oranges
xiv. Photographs showing work + its impact	

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

8. Specific datasets on different impact parameters:

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

- Location of the structure considering technical inputs was more appropriate
- Physical measurements (whether matching with M book) : Yes
- Quality of the work : Fair and after maintenance of the structure is Fair
- Improved groundwater in open wells as well as increase pumping hours with bore wells.
- Water level in open wells is estimated as 2m water column



Picture 9. Focused group discussion with beneficiaries and WC members in Fareedpur.

**Impact Assessment Report**  
**Gattunellikuduru Watershed, DPAP-I Batch**  
**Tellapaddy Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I
ii. Name of the watershed:	Gattunellikuduru
iii. Names of villages in the Watershed:	Gattunellikuduru
iv. Villages/Mandal/District:	Gattunellikuduru
v. Name and Address of PIA:	DKRDA, Nagarkurnool
vi. Total area of the watershed:	500 ha

**2. Ownership pattern of land:**

i. Arable land (ha)	
ii. Non-arable land (ha)	
iii. Government/ Community land (ha)	
iv. Private land (ha)	
v. Treated arable (ha)	500 ha
vi. Treated non-arable (ha)	

**3. Verification financial and other Records**

i. Total cost: Rs. 17,49,900	Approved: Rs.20 lakhs	Spent: Rs.16,05,100
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Percolation Tank: 1; 400 acres bunding which is flattened now and damaged. Bunds=400	
iv. Whether watershed committees exists	Yes	
v. if exists, activities of the committees	NIL	

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

No entry point activity was taken up.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members:6
	Before	After	Before	After	Male: 6
				3	Female: nil
Describe:					
ii. Records of meetings properly updated	No information: No meeting				
iii. Liaison with scientific institutions established	Nil				
iv. Watershed Development Fund collected? and its utilization	No information				
v. Self Help Groups	No:		Revolving fund: Rs: 40,000/-		
V.O functioning:		Savings:			
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	No CPR development				
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Rainfall is also very important factor in appreciating impact of watershed structures and development. There are no open wells functional. Operational bore wells=40 to a depth of 200 feet.
ii. Additional area under cultivation/ horticulture/ afforestation	4.5 acres of mango, at present 60 plants are successful
iii. Changes in cropping pattern and intensity	
iv. Changes in agricultural productivity	No productivity improvement technologies
v. Changes in fodder & fuel wood availability	Fodder shortage is very acute due to less rain for the previous three years.
vi. Changes in size and character of livestock holdings	No milk production increase, no increase in coffee, Sheep and buffaloes population.
vii. Status of grazing land & their carrying capacity	All government grazing lands were occupied and no grazing land available
viii. Employment generated due to implementation of project	

ix. Change in household category, total, & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	
xi. Reduction in out-migration (case studies)	500-600 migration earlier, this year migrated population around 200.
xii. Reduction in drought vulnerability of the watershed	No change in drought vulnerability
xiii. Detailed case studies of specific farmers impacted by the project	
xiv. Photographs showing work + its impact	

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

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

- a. SHG groups were maintained very well up to 2007 and the managing women members of SHGs got married and left the village, due to lack of trained members the groups were discontinued.
- b. Percolation tanks and Gully Control structures were damaged.
- c. Structures totally damaged and needs repairs soon.



Picture 10a. Focused group discussion with watershed beneficiaries in Guttanellikudur watershed.



Picture 10b. Defunct open wells rejuvenated but not used in the village.



**Impact Assessment Report**  
**Gokafasalbad Watershed, DPAP-I Batch**  
**Doulatabad Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Gokafasalbad
iii. Names of villages in the Watershed:	Gokafasalbad
iv. Villages/Mandal/District:	Gokafasalbad/Doulatabad, Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-II, Narayampet
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.1681500	Approved: Rs.20 lakhs	Spent: Rs.16,32,300
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per records	Field binding was done in 228 hectare, Gully control structures : 156, check dams: 6, Nursery raised: 25000 plants	
iv. Whether watershed committees exists	Yes, President : P Bheem Sain Rao Chairman : A Keshava Reddy Secretary : Srinivas Rao	
v. If exists, activities of the committees	Nil	

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

EPA : Community Hall was constructed at a cost of RS 79,000 and additionally 30% through Shramadhanam from villages.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members: 14
	Before	After	Before	After	Male: 11
	-	8	-	22	Female: 3
Describe:					
ii. Records of meetings properly updated					
iii. Liaison with scientific institutions established					
iv. Watershed Development Fund collected? and its utilization					
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	Field Binding, Gully Control Structures etc were done in the watershed activity.				
vii. Benefits to weaker sections (women, dalits & landless)	NIL				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Open well : 80; 3 are still functioning, Bore wells: 240, water table rose with watershed interventions to 90 feet from 120 feet earlier. 3 to 4 feet near check dams while other areas dried up
ii. Additional area under cultivation/horticulture/afforestation	250 acres cultivation increased due to watershed development under summer paddy crop
iii. Changes in cropping pattern and intensity	Sorghum, paddy, pigeonpea, green gram, groundnut
iv. Changes in agricultural productivity	Sorghum: 4 to 5 Q/acre, paddy: 25 Q/acre, Pigeonpea : 3 to 4 Q/acre, Green Gram : 3 to 4 Q/acre, Groundnut: 6to 7 Q/acre
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	Milk Yield of 30 to 40 liters/day was collected in the village before watershed development currently increased to 200 liters/day after watershed.
vii. Status of grazing land & their carrying capacity	

iii. Employment generated due to implementation of project	
ix. Change in household category, total, & source-	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Sangaramana Grameena Vikas bank, APGVB, Balampeet and co-operative bank, Doulatabad were the main source of input credit to farmers. No money lender in this village.
xi. Reduction in out-migration (case studies)	Migration reduced because of NREGS and among construction workers also only 5% migration existing.
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	Sakriya Nayak had planted 6 acre mango which was in full bearing for previous 3 seasons. He earned a net income of Rs. 30,000/acre. Sarabaiah planted 6 acre of sweet oranges which has been bearing fruits for two seasons, he earns a net income of Rs. 80,000/6 acres/annum.
xiv. Photographs showing work + its impact	

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

8. Specific datasets on different impact parameters:

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

- ◆ Gully control structures were considered more useful by villagers and further requesting check dams and GC structures for soil and water conservation.
- ◆ Farmers are requesting larger areas of mango and sweet orange plantation as they have realized the value of orchards development.



**Picture 11a. Percolation tank in Gokafasalbad with proper maintenance.**



**Picture 11b. Sweet orange plantation at bearing in a farmer's field in Gokafasalbad.**

**Impact Assessment Report**  
**Gudlanerva Watershed, DPAP-I Batch**  
**Bijnapally Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I
ii. Name of the watershed:	Gudlanerva
iii. Names of villages in the Watershed:	Gudlanerva
iv. Villages/Mandal/District:	Gudlanerva/Bijnapally/ Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-III, Nagarkurnool
vi. Total area of the watershed:	500 ha

**2. Ownership pattern of land:**

i. Arable land (ha)	
ii. Non-arable land (ha)	
iii. Government/ Community land (ha)	
iv. Private land (ha)	
v. Treated arable (ha)	500 ha
vi. Treated non-arable (ha)	

**3. Verification financial and other Records**

i. Total cost: Rs.1568800	Approved: Rs. 20 lakhs	Spent: Rs.15,13,800
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	Checkdams:13; Percolation Tanks: nil; Field bundings:68 acres, Gully control structures:115	
iv. Whether watershed committees exists	NO	
v. if exists, activities of the committees	Nil	

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

NIL

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members:
	Before	After	Before	After	Male:
	-	-	-	15	Female:
Describe:					
ii. Records of meetings properly updated					
iii. Liaison with scientific institutions established					
iv. Watershed Development Fund collected? and its utilization					
v. Self Help Groups	No:		Revolving fund: Rs: 2.6 lakhs /15 groups. They added their savings and distributed 20000/- to each group		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Ground water availability is very low from a depth of more than 200 feet in this watershed area. Farmers draw less than 2-2.5" water from bore wells near the village tank.
ii. Additional area under cultivation/horticulture/afforestation	No horticulture plantation was done.
iii. Changes in cropping pattern and intensity	
iv. Changes in agricultural productivity	
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	
vii. Status of grazing land & their carrying capacity	

viii. Employment generated due to implementation of project	Employment generated only during the implementation of watershed development works, but no improvement later.
ix. Change in household category, total & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	
xi. Reduction in out-migration (case studies)	Long-term labor migration continues, but reduced by 50%. However, NREGS helped reduced labor migration
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	
xiv. Photographs showing work + its impact	

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

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

- ◆ Padmavathi SHG which has 15 members actively functioning and members grow vegetables and doing vegetable business.
- ◆ Location of the structure is fair considering technical aspects appropriately.
- ◆ Constructions quality is poor and after maintenance is negligible. Beneficiaries felt that the scheme should be implemented thru responsible organizations or officials.
- ◆ All structures were damaged due to poor construction.
- ◆ Watershed committee misused the funds and executed poor quality works. All structures are damaged in the same year as foundation and quality of construction was very poor
- ◆ They have grabbed even office furniture and became defunct.
- ◆ Already brought to the notice of officials and villagers complain that no action was taken on watershed committee.

**Impact Assessment Report**  
**Guvvaladinne Watershed, DPAP-I Batch**  
**Gadwal Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I
ii. Name of the watershed:	Guvvaladinne
iii. Names of villages in the Watershed:	Guvvaladinne
iv. Villages/Mandal/District:	Guvvaladinne/Gadwal/Mahabubnagar
v. Name and Address of PIA:	Seva, Gadwal
vi. Total area of the watershed:	500 ha

**2. Ownership pattern of land:**

i. Arable land (ha)	
ii. Non-arable land (ha)	
iii. Government/ Community land (ha)	
iv. Private land (ha)	
v. Treated arable (ha)	500 ha
vi. Treated non-arable (ha)	

**3. Verification financial and other Records**

i. Total cost:	Approved: Rs.18,55,200	Spent: Rs. 15,03,100
ii. Expenditure incurred as per guidelines	Yes, Rs. 1592100	
iii. Works executed as per Records	Check dams: 3, Percolation Tanks: 6, RFDs/LBS=255, Field bunding: 500-600 acres.	
iv. Whether watershed committees exists	Yes, Chairman: Chinna Venkanna, President: Sivarajappa Secretary: M. Bhaskar Reddy	
v. if exists, activities of the committees	NIL	

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

Temple basement was taken up as community involved entry point activity with community participation in shramadhanam.



## 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
	-	16	-	12	Female: 2
Describe:					
ii. Records of meetings properly updated	Watershed Committee met once in month regularly and watershed association met once in 6 Months.				
iii. Liaison with scientific institutions established	Exposure visits and trainings were organized to committee members and farmers in Mahabubnagar, Gadwal and Ralegaon Sidde met Anna Hazare.				
iv. Watershed Development Fund collected? and its utilization	Rs: 1,47,125/- was collected as WDF and deposited in postal savings as well as bank current account.				
v. Self Help Groups	No:		Revolving fund: Rs: 2,60,000+40,000		
V.O functioning:		Savings:			
Utilization of loans:		Petty Business, hotel, sheep, buffaloes			
Bank linkages established:		Tank silt application after level			
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Open wells: 100, water is available at a depth of 25-30 feet, 5-10 feet water level increased in two years due to good rains. Water level in the open wells (100 no) increased by 2 to 3 meters and 200 bore wells are used for agriculture.
ii. Additional area under cultivation/horticulture/afforestation	250 acre newly brought under cultivation, mango plantation was done in 360 acres out of which 300 acres surviving.
iii. Changes in cropping pattern and intensity	Traditionally sorghum, bajra, groundnut were main crops. After watershed interventions farmers grew cotton, groundnut, sunflower, pigeonpea with high yields of the crops
iv. Changes in agricultural productivity	Cotton: 6q/acre-10-15 acres; pigeonpea 2-3 q/acre groundnut: 20 q/acre and castor 25q/acre
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	
vii. Status of grazing land & their carrying capacity	

viii. Employment generated due to implementation of project	
ix. Change in household category, total & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Grameena Bank and Market Yard also provides credit at 3% interest rate, no private money lending exists.
xi. Reduction in out-migration (case studies)	Labor migration Increased by 15% unusually in this watershed as informed by respondents.
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	Mr. Pratap Reddy has 10 acres of sweet oranges. He gives crop for lease at Rs. 65000 per one acre per crop season. Mr. Sivarajappa Gouda has eight acres mango and three acres sweet oranges developed in watershed project. He earns Rs. 2 lakh from eight acres of mango per year and also earns Rs. 3 lakh from three acres of sweet oranges crop per year.
xiv. Photographs showing work + its impact	

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

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

- ❖ Relevance of the location of the structures is good considering technical inputs.
- ❖ Physical measurements were matching with Measurements book very well. Quality of the work is good and after maintenance of the structures is fair.

**Farmers suggested for their betterment through watershed works:**

- a. Adding tank silt amending the soils in their area
- b. Check dams at the suitable size and budget should be sanctioned; and
- c. Horticulture (mango and sweet oranges planting) is required to be implemented and drop implementation should be done.

**Impact Assessment Report**  
**Inole Village Watershed, DPAP-I Batch**  
**Achampeta Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Inole
iii. Names of villages in the Watershed:	Inole
iv. Villages/Mandal/District:	Inole/Achampeta/Mahabubnagar
v. Name and Address of PIA:	ADA, MDT-V, Achampeta
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget	Approved: lakhs	Spent: lakhs
ii. Expenditure incurred as per guidelines		
iii. Works executed as per Records	CD: 12, Bunding: 1000acre (Bunding good); PT: 1, farm pond:1, LBS and gully control structures: 150	
iv. Whether watershed committees exists		
v. if exists, activities of the committees		

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

Respondents indicated that a road was laid and a culvert was constructed under the entry point activity at the beginning of watershed development.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members:13
	Before	After	Before	After	Male:11
	-	-	-	-	Female:2
ii. Records of meetings properly updated					
iii. Liaison with scientific institutions established					
iv. Watershed Development Fund collected? and its utilization					
v. Self-Help Groups	No:		Revolving fund: NA		
V.O functioning:	NA		Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	No CPR development				
vii. Benefits to weaker sections (women, dalits & landless)	NA				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Increase groundwater levels and 50 open wells and 30 bore wells are functional. In bore wells water is available at a depth of 80 to 100 feet, in 15 bore wells pumping time has almost become doubled and water is available up to March- April
ii. Additional area under cultivation/horticulture/afforestation	10-15 acres with Mango gardening 2 to 3 acres per individuals
iii. Changes in cropping pattern and intensity	
iv. Changes in agricultural productivity	10 farmers benefited; Cotton, Paddy, pigeon pea
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	Reduced population
vii. Status of grazing land & their carrying capacity	

viii. Employment generated due to implementation of project	
ix. Change in household category, total & source	
x. Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	Less because bank credit is available
xi. Reduction in out-migration (case studies)	No reduction in migration
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	Dasari Buchamma got 2 acres of land near a Percolation Tank. She was cultivating dryland crops before watershed and after watershed she has been growing 2 crops of paddy in her two acres.
xiv. Photographs showing work + its impact	

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

8. Specific datasets on different impact parameters:

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

- Size, type of the structure visited: Percolation lack:40m-L, BW-3m, w-1m BW: 3m
- Location of the structure considering technical inputs was appropriate
- Physical measurements (whether matching with M book) : Yes
- Quality of the work : Good
- After maintenance of the structure : Fair
- Ground water improved and Bore wells are 80 to 100 ft deep



Picture 12ab. Check dams in Inole watershed in Achampeta mandal constructed under DPAP-1.

**Impact Assessment Report**  
**Parpally Watershed, DPAP-I Batch**  
**Koilkonda Mandal, Mahabubnagar District, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Parpally
iii. Names of villages in the Watershed:	Parpally
iv. Villages/Mandal/District:	Parpally/Koilkonda/Mahabubnagar
v. Name and Address of PIA:	ADA, MDT-I, Mahabubnagar
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs. 158,500	Approved: Rs. 20 lakhs	Spent: Rs. 161056
ii. Expenditure incurred as per guidelines	Rs.161056	
iii. Works executed as per Records	CD : 6, PTs : 1, feeder channel=1, field bunding 245 ha, Horticulture : 12; Gully Control structure (183) in 12 acres	

	were developed, rejuvenation of dry well=100 by recharge
iv. Whether watershed committees exists	Yes, Secretary: Ashanna Goud was available for discussions. Chairman: N. Narayana; WA president: B. Venkata Reddy.
v. if exists, activities of the committees	Nil

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

Road & culverts were constructed leading to the village and a building was constructed for the watershed association.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions	No. of UGs		No. of SHGs		WC members : 13
	Before	After	Before	After	Male : 11
	-	17	15	35	Female : 2
Describe:					
ii. Records of meetings properly updated	Conducted meetings of WC and WA at regular intervals, Watershed action plans were prepared.				
iii. Liaison with scientific institutions established	WC chairman, secretary and 2 other farmers visited Ralegaon siddi				
iv. Watershed Development Fund collected? and its utilization	Rs. 93932 was collected as WDF and was not given for maintenance works to groups.				
v. Self Help Groups	No:		Revolving fund: Rs.2.7 lakhs were given to 4 SHGs only		
V.O functioning:	Fund not functional now		Savings:		
Utilization of loans:	Rs. 2.7 lakhs were given to SC/ST members for traditional enterprises of rural poor.				
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	No CPRs development done				
vii. Benefits to weaker sections (women, dalits & landless)	Revolving fund was given to SC/ST women but a recovery from members to the fund is not there.				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Tube wells also recharged, some open wells became functional after development of water harvesting structures. About 40% GWL increased, tube wells pumping time has doubled, Water is be available up to March-April
ii. Additional area under cultivation/horticulture/a fforestation	40% area increased under cultivation, cropping intensity also increased. About 100 acres of additional area brought under cultivation.
iii. Changes in cropping pattern and intensity	Paddy, groundnut in irrigated area, irrigated area increased by about 40% to paddy from dryland crops
iv. Changes in agricultural productivity	Pigeonpea yield increased by 50% (2-3 bags/acre)
v. Changes in fodder & fuel wood availability	100 litres /day of milk was procured earlier and after watershed development milk production increased to 200 litres /day in the watershed village.
vi. Changes in size and character of livestock holdings	Milch animals also increased in number.
vii. Status of grazing land & their carrying capacity	



viii. Employment generated due to implementation of project	Employment increased due to increased area & intensity of crops
ix. Change in household category, total, source	About 80% of BPL families have improved their life standards, about 300 families benefitted
x. Freedom from debt and reduction in degree of dependence of money lenders (case studies)	State Bank of Hyderabad, Koilkonda finances the credit for agricultural inputs through crop loans only to some farmers others dependence on money a lender which is slowly reduced.
xi. Reduction in out-migration (case studies)	Migration certainly decreased, some respondents attribute it to advances given by contractors in towns.
xii. Reduction in drought vulnerability of the watershed	Drought to tolerance increased due to increased groundwater availability for agricultural production.
xiii. Detailed case studies of specific farmers impacted by the project	
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

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

- ◆ Size & type of the structure: Percolation tank: 50m-L, BW-2m, water depth: 4m
- ◆ Location of the structure considering technical inputs was appropriate
- ◆ Physical measurements (whether matching with M book) : Yes
- ◆ Quality of the work : Good
- ◆ After maintenance of the structure: Fair
- ◆ Water harvesting structures were having cracks and leakages, they need repairs
- ◆ Diversion drains were made in the past but not maintained well. Farmers requested for renovations and repairs to diversion canals for diverting runoff water into defunct open wells to recharge.
- ◆ 150 open wells (only 2 are functional and all others are defect,) 200 tube wells are functional
- ◆ About 10-12 small old tanks are there

**Impact Assessment Report**  
**Peddajatram Watershed, DPAP-I Batch**  
**Utkoor Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Peddajatram
iii. Names of villages in the Watershed:	Peddajatram
iv. Villages/Mandal/District:	Peddajatram/ Utkoor/ Mahabubnagar
v. Name and Address of PIA:	ADA, MDT-II, Narayampeta
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	NA
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.16165	Approved: lakhs	Spent: Rs.16165
ii. Expenditure incurred as per guidelines	Yes	
iii. Works executed as per Records	CDs : 6 (All good conditions), Earthen Bunding : 200acres), Percolation Tanks : 3 (one breached due to floods), Rockfilled Dams/Loose Boulder Structures: 210 (All are intact)	
iv. Whether watershed committees exists	Chairman : Nagi Reddy, Mayani President : H Hanumantha Reddy Secretary : M Sudharshan Reddy	
v. If exists, activities of the committees	NIL	

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

As EPA, a Veterinary Hospital was constructed at a cost of Rs.49,000 and watershed members contributed through Shramadhanam.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members
	Before	After	Before	After	Male
				2	Female
ii. Records of meetings properly updated	WC : Once in a month WA : Once in three month				
iii. Liaison with scientific institutions established	Visited Raligam siddi to learn about natural resource management model developed by Sri Anna Hazare.				
iv. Watershed Development Fund collected? and its utilization	Rs.1,00000/- handed over to PD; DWMA				
v. Self Help Groups	No:		Revolving fund: Rs. Nil		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development					
vii. Benefits to weaker sections (women, dalits and landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Water improved even in bore wells, water reduces only in April-May by 50%. Earlier bore wells used to dry up by March.
ii. Additional area under cultivation/horticulture/a fforestation	No Horticultural Plantation; 15 acres proposed but could not materialize due to non-cooperation of members.
iii. Changes in cropping pattern and intensity	
iv. Changes in agricultural productivity	
v. Changes in fodder & fuel wood availability	
vi. Changes in size and character of livestock holdings	
vii. Status of grazing land & their carrying capacity	
viii. Employment generated due to implementation of project	

ix. Change in household category, total & source	
x. Freedom from debt and reduction in degree of dependence of money lenders (case studies)	Canara bank, Narayanpeta provides input credit bank loans to farmers and money lenders are not operating in the village.
xi. Reduction in out-migration (case studies)	No Migration at present, it was reduced from 70% of population migrating for employment earlier.
xii. Reduction in drought vulnerability of the watershed	
xiii. Detailed case studies of specific farmers impacted by the project	1. Nandigonda Thimmappa got benefitted with double cropping after a check dam in Yenala area. 200 acres of field bunding helped more farmers conserve moisture in their fields for good crops.
xiv. Photographs showing work + its impact	

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

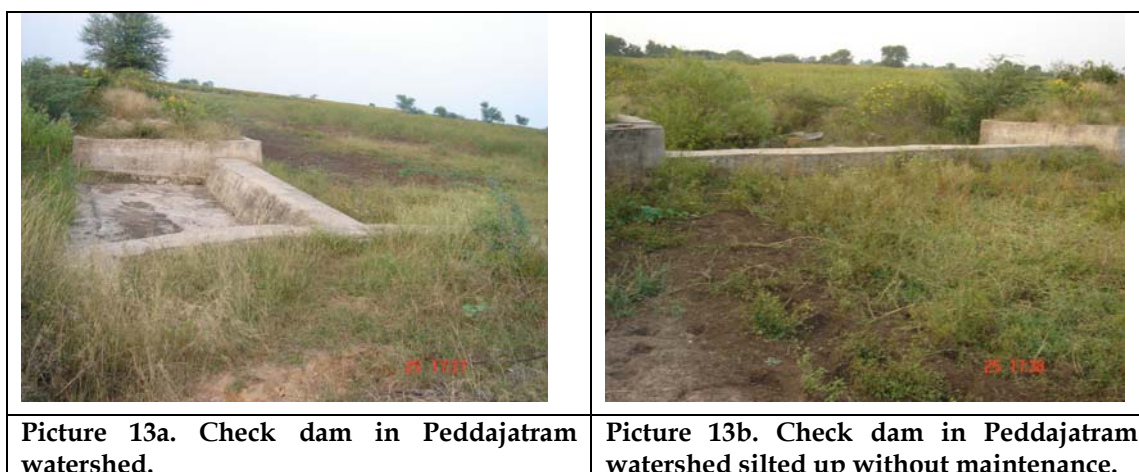
8. **Specific datasets on different impact parameters:**

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

- Silt deposition to be removed
- Water for cattle is improved
- Groundwater level increased
- Check dams are in good condition
- Percolation Tanks damaged due to floods

**Farmers request:**

(1) Yennegattala vagu to be bridged with a dam; and (2) Horticulture development on two hillocks would be taken for the benefit of landless poor with usufruct rights.



**Impact Assessment Report**  
**Somasila Watershed, DPAP-I Batch**  
**Kollapur Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Somasila
iii. Names of villages in the Watershed:	Somasila
iv. Villages/Mandal/District:	Somasila/Kollapur/Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-V, Achampeta
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.15,35,600	Approved: Rs. 20 lakhs	Spent: Rs.15,35,600
ii. Expenditure incurred as per guidelines		
iii. Works executed as per Records	Yes, check Dams: 8, Percolation Tanks: 4, Bunding: 600 acres, Rock filled dams: 200, cattle feeding water tanks: 2; water supply scheme at Brahmangari Temple.	
iv. Whether watershed committees exists	Yes, Chairman: K.Jambalaiah President: B. Rangaiah Secretary: P. Eswaraiah	
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)**

As EPA, Cement Concrete road before a temple (20mts\*10mts) at a cost of Rs.80,000 has been developed which was quite useful for a long time.

## 5. Qualitative Parameters of Impacts

i. Functioning of village level institutions  Describe:	No. of UGs		No. of SHGs		WC members
	Before	After	Before	After	Male
		4			Female
ii. Records of meetings properly updated	Watershed Committee meets monthly once Watershed Association meets once in 3 months				
iii. Liaison with scientific institutions established	No linkages with scientific institutions				
iv. Watershed Development Fund collected? and its utilization	A fund of Rs.2 lakhs was collected and deposited in the savings account later transferred to government.				
v. Self Help Groups	No:		Revolving fund: Rs.		
V.O functioning:			Savings:		
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	No government land CPRs and no efforts were made.				
vii. Benefits to weaker sections (women, dalits & landless)					

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Under each well 1-3 acres irrigation water increased is availability after development of SWC STRUCTURES in the watershed.
ii. Additional area under cultivation/horticulture/afforestation	30 acres brought under irrigated cultivation additionally. 300 acres mango and teak plantation was taken up. No plantation is established because of droughts.
iii. Changes in cropping pattern and intensity	300 to 400 acres brought under cultivation which was not cultivated earlier. No increase in crop intensity
iv. Changes in agricultural productivity	No increase due to low rainfall
v. Changes in fodder & fuel wood availability	Fodder shortage is there
vi. Changes in size and character of livestock holdings	Seeds of sorghum were given, no increase in livestock, no increase in milk production
vii. Status of grazing land & their carrying capacity	Reserve forest and government land are used for grazing
viii. Employment generated due to implementation of project	During watershed development employment increased
ix. Change in household category, total & source	

x. Freedom from debt and reduction in degree of dependence of money lenders (case studies)	The village is free from money lenders as no body is coming forward to lend money.
xi. Reduction in out-migration (case studies)	No migration as it is stopped after watershed
xii. Reduction in drought vulnerability of the watershed	We are better off in terms of having drinking water for animals & human beings as informed by Mr. Khasim
xiii. Detailed case studies of specific farmers impacted by the project	Mr. Fakeer Basha, a farmer near by a check dam has good water availability. He cultivated paddy & groundnut every year.
xiv. Photographs showing work + its impact	

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

8. **Specific datasets on different impact parameters:**

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

- ◆ WDF funds need to be released for maintenance and repairs of structures as requested by WC members.
- ◆ Check dams require some repairs; hence the funds may be effectively utilized as these structures are constructed 10 year back.



**Picture 14. Farmers in Somasila watershed expressing their views in focused group discussion.**



**Impact Assessment Report**  
**Vemula Watershed, DPAP-I Batch**  
**Midjil Mandal, Mahabubnagar district, Andhra Pradesh**

**1. Details of watershed:**

i. Name of the Scheme:	DPAP-I Batch
ii. Name of the watershed:	Vemula
iii. Names of villages in the Watershed:	Vemula
iv. Villages/Mandal/District:	Vemula/Midjil/Mahabubnagar
v. Name and Address of PIA:	Dy. Executive Engineer, MDT-IV, Kalwakurthy
vi. Total area of the watershed:	500 ha

**2. Land Use Pattern:**

i. Arable land (ha)	NA
ii. Non arable land (ha)	
iii. Government/Community land (ha)	
iv. Private land (ha)	
v. Treated arable	500 ha
vi. Treated non arable	

**3. Verification financial and other Records**

i. Total Budget: Rs.16, 02700	Approved: Rs.15,56,700	Spent: Rs.16,02,700
ii. Expenditure incurred as per guidelines	Rs.16,02700	
iii. Works executed as per Records	Yes, CDs: 10 (2 good & 2 leakages & breaches), PTs: 10, Earthen Bunding: 348 acres, RFDs/LBS: 168, Sunken pits: 30 approximately	
iv. Whether watershed committees exists	Yes, Chairman: Krishnaiah Gouda, President: B. Mohan Reddy, Secretary: M. Shankar Gouda, intermediate qualification	
v. if exists, activities of the committees	Nil	

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

Entry point activity was not taken up in this watershed.

## 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
	-	16	-	18	Female:2
Describe:					
ii. Records of meetings properly updated	Watershed Committee meetings were held once in a month, while Watershed Association meeting were held once in three months as per the records.				
iii. Liaison with scientific institutions established	10 farmers from this village visited other watersheds in the district, chairman and farmers visited RARS, Palem for 3 day training, 20 farmers attending watershed workshop conducted at Midjil addressed by Anna Hazare.				
iv. Watershed Development Fund collected? and its utilization	RS.105000 approximately				
v. Self Help Groups	No:		Revolving fund: Rs. NIL		
V.O functioning:		Savings:			
Utilization of loans:					
Bank linkages established:					
vi. Planned CPRs sustainable & equitable development	Bunding, Percolation Tanks, check dams as it is in use by SC/ST people/farmers				
vii. Benefits to weaker sections (women, dalits & landless)	SC/ST farmers cultivating CPR lands got benefitted through SWC STRUCTURES in those areas due to improved water availability.				

## 6. Quantitative Parameters of Impacts

i. Improvements in water table/water availability	Open wells:150 (40' depth water availability, 3'-4' water level increase), 10 feet water availability even in march; bore wells:200 (100' depth), Bore wells supply water up to the month of May
ii. Additional area under cultivation/horticulture/afforestation	400-500 acres brought under cultivation after DPAP-I, Mango plantation 20-30 acres, all established well
iii. Changes in cropping pattern and intensity	150% crop intensity; cotton, maize, paddy, pigeonpea & sunflower.
iv. Changes in agricultural productivity	Cotton 12 Q/acre, maize 20 Q/acre, paddy 30 bags/ acre, pigeonpea 5 Q/acre, sunflower 3 Q/acre, groundnut 15 bags/acre, overall 50% yield increase in dryland crops.
v. Changes in fodder & fuel wood availability	Fodder supply improved but not adequate
vi. Changes in size and character of livestock holdings	Livestock population increased with number of milch cattle improvement.
vii. Status of grazing land & their carrying capacity	

viii.	Employment generated due to implementation of project	
ix.	Change in household category, total, & source-	
x.	Freedom from Debt and reduction in degree of dependence of money lenders (case studies)	SBI, Velchal; money lenders (36%)
xi.	Reduction in out-migration (case studies)	Migration reduced from 200 labors out migration to 50-60 people migrating to city with special skills.
xii.	Reduction in drought vulnerability of the watershed	Reduced vulnerability due to paddy & cotton crop improvement
xiii.	Detailed case studies of specific farmers impacted by the project	1. Mr. B. Ramalinga Reddy has 10 acres of mango orchard bearing fruits since 5 years; net income of RS.15000/acre/annum 2. Mr. K. Anji Reddy has 8 acres of mango orchard, bearing fruits since 7 years. He earns a net income of RS.12000/acre/annum.
xiv.	Photographs showing work + its impact	Included at the end of each watershed report along with observations of evaluator where ever pictures were taken

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

- ❖ Main Percolation Tanks construction of with cement structure is to be done
- ❖ Check dams & PTs are good
- ❖ Village tanks should be developed

**8. Specific datasets on different impact parameters:**

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

- ◆ Location of the structure considering technical inputs is appropriate
- ◆ Physical measurements (whether matching with M book): Yes
- ◆ Quality of the works is Good
- ◆ After maintenance of the structures is Fair
- ◆ Silted up heavily and structural damages due to cracks and even recent floods.

## **ANALYSIS OF IMPACTS**

Drought Prone Area Programme (Batch I) in Mahabubnagar district targeted and developed 92 watersheds in 48 mandals (15 erstwhile revenue blocks) in four years started in the year 1995-96 and execution of developmental activities completed by 2002-03, with a delay of almost four years from the sanctioned period. The area treated under watershed activities (SWC structures) was 46,000 ha with a total expenditure of Rs.1392.6 lakhs directly released to Watershed committees during the period. Amounts sanctioned towards training, community participation and administrative charges to the tune of Rs. 642 lakhs were released to concerned PIA directly. We chose 20 watersheds developed by PIAs from 20 different mandals of Mahabubnagar to have well distributed representation of watersheds for the impact assessment.

### **Verification of Records**

In this district, we spent lots of time to fetch or 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. 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.

### **Community (People's) Participation**

One of the main objectives of DPAP was to ensure and enhance people's participation in this programme. At the inception stage, in ten of the twenty selected watershed villages for impact assessment, Entry Point Activity (EPA) was implemented either to construct a school building (Bollaram), a bus shelter (Chinnarevally), a community center (Gokfasalwad), a veterinary hospital (Peddajatram), revetment of drinking water tank (Ettam), or road formation and road-side drainage channel in the villages (Alwal, Boypally) that ensured community participation and awareness about the watershed project. In some watersheds EPA could not be done for varied interests and lack of common agreement among

beneficiaries on a particular work as EPA. In watershed villages where EPA was undertaken, 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 less than 50% of the allocated budget. 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 not actively persuaded as was evidenced by poor growth of total 78 SHGs (Balabhadrayapally - 8, Banala - 5, Gattunellikudur - 3, Gokfasalwad - 22, Gudlanerva - 15, Guvvaladinne - 4, Parpally - 15, Peddajatram - 2 and Somasila 4); and a very few are functional at present in the selected 20 watershed communities. In large scale activities which promote income generation like raising nursery of horticultural and forest tree plants, weaker sections and women through SHGs should have been involved. SHGs development would have impacted much better in terms of income generation and sustainability of rural livelihoods.

User groups (UGs) were formed in four watersheds (Elkicherla - 8, Bollaram - 5, Alwal - 8 and Gokfasalwad - 8) out of the twenty watersheds. Soil and water conservation works were undertaken by the WCs without much participation of people. 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.1479 lakhs to cover 46000 ha, an amount of Rs. 1392.6 lakhs was spent. A total of 92 continuous contour trenches, 502 no. non-cemented water harvesting structure, 435 cemented SWC structures, 2009 other SWC structures and large number of stone checks were constructed in this project.

In majority of watersheds assessed (in 14 watersheds out of 20 watersheds), masonry structures constructed either by PIA of government organization or NGO 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.

In Gudlanerva and Gattunellikuduru watersheds, the structures constructed were of poor quality without good foundation and aprons hence most of the structures in the watersheds damaged several years back and repairs were not done resulting in no benefit to farmers in terms soil and water conservation and groundwater improvement.

In Vemula, Eklasapur and Guvvaladinne watersheds, quality of structures and location suitability were good, some of these SWC structures were severely damaged due to heavy flash floods in October 2009 and required repairs for damaged structures.

### **Water availability for irrigation and drinking purpose**

Farmers in fourteen watersheds located in different mandals reported an increase in ground water levels ranging from 2 to 3 feet generally and in some watersheds water level raise was up to 10 feet and increased availability of water for irrigation up to March-April months. In nine watersheds, the number of successful bore wells increased to more than 200 in each watershed, as an indication of water availability. In Boyapally and Chinnarevally watersheds, farmers realized less availability of groundwater in un-treated areas of their villages compared to more water availability in treated watershed areas of these villages. Impact of watershed interventions especially masonry structures has been felt very much by the beneficiary farmers in DPAP developed watershed villages in terms of their utility to control erosion and to some extent ground water increase and water availability for drinking purpose more importantly. Period of water availability for irrigation extended from November-December months before the watershed development, to end of March-April after the watershed development. This situation favored for double cropping with one or two supplemental irrigations for second crops between January to 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 (Alwal, Boypally and Ettam), 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. Crop intensity increased between 160%-200% as the number of bore well those support second crop were more than 200 per village. Due to availability of water for longer period in the season up to end of March-April, crops like groundnut, sunflower and maize as second crop after paddy was introduced. Although, variability exists in reported productivity enhancement, it varied from as low as 20% in case of castor and pigeonpea 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. 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 15 to 25 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-1 watersheds of Mahabubnagar, afforestation activity received Rs. 655.6 lakhs grant while horticulture activity received a sanction of Rs. 37.9 lakhs. Our visit revealed that there was considerable interest generated among farmers for mango and Sweet oranges cultivation on seeing the success of watershed farmers planted mango and sweet orange through DPAP-I. In 10 watersheds, considerable area of mango plantation developed. Those include 300 acres in Guvvaladinne, 50 acres in Ettam, 50 acres in Alwal, 25 acres each in Ausalikunta, Balabadrayapally, Chinnarevellay, Somasila and Vemula. Less than 10 acres of mango orchards survived in Elkicherala and Gokfasalwad. Actual area targeted under mango plantation and plants supplied to farmers were 4 to 5 times higher to the actually survived and established orchards. As an example in Alwal watershed, mango plants were supplied for 250 acres while 50 acres plantation only survived due to several reasons. Farmers had harvested mango with a net income ranging from Rs.10,000 to Rs.20,000 per acre based on growth and age of mango orchards developed through DPAP-1. As an exception, in Gudlanerva and Peddajatram there was no horticulture activity done to benefit farmers.

Sweet orange was another prominent fruit crop developed through this project in Balabhadrayapalli (61 acres), Gattunellikuduru (16 acres) and Gokfasalwad (10 acres). Teak and Tamarind plantations were developed on field bunds of interested farmers. Farmers in various DPAP-1 watersheds indicated that their net income from sweet orange orchards varies from Rs.25,000 to 50,000 per acre based on the age and growth of the orchard.

Farmers indicated reasons for poor establishment of orchards were:

1. Low quality sweet orange plants and low quality small and weak mango plants were supplied,
2. Lack of sufficient water supply during establishment due to drought during 2001-2004 seasons; and
3. In unprotected orchards, plants were exposed to goat and cattle grazing during summer season.

### **Common Property Resources and Wasteland Development**

Mahabubnagar is one of the frequently drought affected districts having large areas of wastelands. Development of common property resources (CPRs) was done in five watersheds of the twenty selected watersheds in the project for the impact assessment study. In Alwal and Vemula watersheds, CPRs were developed similar to the entire watershed with construction of check dams, percolation tanks and formation of field bunding as CPRs land had already been under cultivation by SC/ST farmers with usufruct rights. In Chinnarevally, Gokfasalwad and Guvvaladinne large areas of waste lands were developed by forming field bunds to conserve moisture *in-situ*. In all other watersheds, there was no information on CPRs development during DPAP-1 Project.

### **Employment and Migration**

In the entire Andhra Pradesh, Mahabubnagar 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 did not change in seven (35%) villages and these are Banala, Balabhadrayapally, Bollaram, Eklaspur, Gudlanerva, Inole and Parpally. In another eight (40%) of the watershed villages, migration reduced to 5%-10% from as high as 30%-50% 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 Fareedpur and Guttanellikuduru around 200 to 500 laborers still continue to migrate seasonally for six to nine months in a



year. Surprisingly in Guvvaladinne, respondents indicated the increase in labor migration. As informed by respondent farmers at the time of focused group discussion, 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 25% (5) 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. Farmers expressed fodder scarcity even in years of subnormal or poorly distributed rainfall season when crop production becomes lower.

### **Watershed Development Fund**

Watershed development fund should be collected in all the watersheds as per guidelines and deposited in the banks for joint operations by watershed committee and WDT from the PIA. It is gathered from the reports that Rs. 1.0 lakh to Rs. 1.80 lakh deposits were available as watershed development fund 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, or for construction of much needed new structures their impact would have been felt very much by the beneficiaries in the watershed.

In Alwal watershed of Peddamandadi mandal, the watershed committee with the inspiration of its president Mr. M. Venkata Reddy utilized the WDF Rs.2,60,000 for the benefit of watershed members by giving input credit to them at bank interest rates. The objective as emphasized by president was to give loans to most needy and less privileged farmers to approach the bank for credit. At the time of assessment, the fund enhanced to more than Rs.7,00,000 without any defaulters. A part of the money was used for maintenance of watershed structures and village sanitation with the approval of the watershed committee, as an ideal example of best practice.

### **Suggestion for enhanced impacts in these watersheds**

1. Watershed development fund contributed by watershed members should be utilized for repair and maintenance of watershed structures on regular basis annually, by desilting and 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. An example was available from Alwal watershed managed by WC, Alwal; for further study.
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.

# About ICRISAT



The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that does innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe. ICRISAT's mission is to help empower 644 million poor people to overcome hunger, poverty and a degraded environment in the dry tropics through better agriculture. ICRISAT belongs to the Alliance of Centers of the Consultative Group on International Agricultural Research (CGIAR).

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