
On the Margin

Poor & their Lands

A Case for Comprehensive Public Investments

*A Livelihoods Analysis of
the Dalit Watershed Development Program of DDS*

August, 2004



On the Margin

Poor & their Lands

A Case for Comprehensive Public Investments

***A Livelihoods Analysis of
the Dalit Watershed Development Program of DDS***

Documentation : Ch. Ravi Kumar
Guidance : A. Ravindra

Published : August, 2004
Copies : 1000

Cover design, Layout : T. Ravi

A publication by DDS and WASSAN



Deccan Development Society

Pastapur village

Zaheerabad

Medak district

Ph: 08451 - 282271/282785

E mail : ddsrural@sancharnet.in

Liasion office:

101, Kishan Residency

Street No.5

Begumpet

Hyderabad -16

Ph: 040-27764577 / 27764744

E mail: hyd2_ddspvr1@sancharnet.in



WASSAN

(Watershed Support Services and Activities Network)

12-13-452, Street No. 1, Tarnaka

Secunderabad - 500017

Ph: 040-27015295 / 27015296 / 55284580

E mail : wassan@eth.net

web: www.wassan.org

Printed at : **Charitha Impressions**, Secunderabad, Ph: 9246371347

ON THIS STUDY

Years ago, when watersheds became the flavour of the day and *Ridge to Valley* was the mantra of the times, some of us in DDS starting wondering how would this new development trend affect the poor, especially *dalits*. In our work with dalits for over twenty years, we had realised that most of their lands were uplands, marginal and uncared for. In the context of this experience, we felt that the *ridge to valley* model might help the better lands of the better off people but surely it would not serve the interest of *dalits*. As usual they would be left out of the substantive development process though peripherally, some crumbs would be thrown at them.

Thus began a process in DDS of new ways of looking at watersheds. This process was informed by the vision of the dalit women of DDS for whom their small pieces of land were the only source of food production for their families and communities. Therefore, we thought, if in the name of watershed, these lands became tree plantations or grasslands and ultimately converted into blotting papers to soak up rainwater and transport it to the better lands of the better off people downstream, it would be a grave injustice to *dalit* livelihoods.

An outcome of this thinking was *Dalit Watersheds*, a new concept in watersheds. This created a new model of watersheds that converted *dalit* lands into ecological food farms working on biodiversity based production system. Farming on these lands was totally organic, crops raised were diverse and the focus was on food production. They were managed completely by dalit women, turning these watersheds into *women's watersheds*. And finally, focusing all development effort on the lands of the poor, these watersheds became intrinsically equity-based. They were the forerunners of the Watershed++ model, which had remained just an agenda for discussion in big symposiums at that point of time.

This integration of ecological, gender and *dalit* concerns into watersheds needed to be studied in depth to understand its implications for the marginalised lands and marginalised people. *On the Margin: Poor and their Lands* by WASSAN is an effort in this direction. Mr A. Ravindra and Mr K Suresh of WASSAN who initiated this study need to be congratulated for their highly sophisticated outlook towards natural resource management that is community controlled, gender just and ecologically sustainable. Mr Ch Ravi Kumar, who was the mainstay of the study has made it

multidimensional and has come up with some stunning conclusions. I am very grateful to him for his work. I hope this has given him a new socio-political direction in his natural resources related work.

My colleague Mr Perma Narsimlu helped the WASSAN team in this study all through. Mr Giridhar, Joint Director [Admn], DDS, competently coordinated the logistics. Both of them deserve my special thanks.

I am certain that WASSAN, which is a very influential network, will broadcast the outcomes of this study far and wide. As a result of their efforts, if the watershed development policy in this country can come out of its straitjacket and look radically at the issues of gender, marginalisation, food and ecology in watersheds, WASSAN's commendable efforts would have borne fruit.

July 7, 2004
Hyderabad

P V Satheesh
Director
Deccan Development Society

CONTENTS

1. Overview of the Dalit Watershed Program	8
1.1 Project Villages	8
1.2 Components and program strategy	8
2. Scope and Methodology of the Study	10
2.1 Selection of sample households	10
2.2 Survey methodology	11
3. Analysis of Investments in Selected Watersheds	12
3.1 Profile of Watershed Investments	12
4. Analysis of sample households	15
4.1 Focus of the Study	15
4.2 Changes in the livelihoods	16
4.3 Household level analysis of food grain sufficiency	27
4.4 General observations	31
5. Summary and Conclusions	33
Annexure : 1	
Dalits, Women, Tradition and Watersheds:Can there be a harmony ?	37

Livelihoods Analysis of Dalit Watershed Development Program of DDS

A majority of the poor in rainfed regions own land – some of it purchased by accumulating small surplus. Much of these lands in Andhra Pradesh are assigned to the Dalits over years. These lands are generally far from the village and are characterised by undulating terrain, low soil depth, poor quality soils, high levels of erosion, stony and scrub growth. These lands are mostly left fallow and are starved of any comprehensive public investments on their development. The mainstream watershed development program has also made sub-critical investments on these lands, if any!

The immediate need for securing food for the family over-runs any consideration for cultivation of the assigned lands. Lack of plough bullocks and agriculture inputs further complicates the process of bringing the assigned lands into cultivation. The ‘high-yielding seeds-water-fertiliser-pesticide’ technology paradigm is totally irrelevant for these marginal lands as there is nothing much to ‘exploit’. The people who own these lands and the land itself are subjected to historic neglect in public policy.

But, these marginal lands can make significant contribution to the food security of the poor as they can produce food grains – millets, pulses and oilseeds. Regenerating the land quality also regenerates the livelihoods. Food self-sufficiency for most part of the year reduces the external dependency for basic needs. This freedom helps the poor to negotiate with the wage markets, accumulate some surplus and most importantly, restore control on their own wage labour and lives. This will also kick start the process of asset building and improving living standards. Regenerating the marginal lands will in several ways regenerate the livelihoods of poor.

.....
A Case for Comprehensive Public Investments

1. Overview of the Dalit Watershed Program

It is in this context that the ‘Dalit Watershed Program’ was initiated by the Deccan Development Society (DDS) in 1996. The program focuses on regenerating the marginal lands of the people at the margin of the society and is aptly paraphrased in the term “Dalit Watersheds”. In contrast to the mainstream watershed program, the components in this program are wholesome in bringing the lands of poor back to cultivation and increasing their productivity with reduced dependency on external factors.

1.1 Project Villages

Dalit Watershed program was taken up in eight villages viz., Metlakunta, Yelgoi, Yedakulapally, Rechinthel, Dhanwar, Raipally, Basanthpur and Miriampur in Zaheerabad area of Medak district in Andhra Pradesh in two phases i.e. 1997-99 and 2001 – 03.

1.2 Components and program strategy

The program components and strategy were evolved after intensive participatory exercises with the Sangam members. In view of the multiple-constraints of the lands and livelihoods a diversified array of program activities emerged as follows:

- * Removing stones and clearing the scrub vegetation
- * Deep ploughing with tractor to break open the encrusted land
- * Soil and moisture conservation through field bunding
- * Increasing bio-mass through plantation on bunds
- * Increasing fertility of the soil through application of manure
- * Prevention of erosion in gullies through rock fill dams and gully plugs
- * Water harvesting through percolation tanks and check dams
- * Providing bullocks for timely ploughing

Dalit Watershed Development Program

It employs the same principles of soil and water conservation as any other mainstream watershed, but by consciously choosing to work only on the lands belonging to the Dalits, the project focuses all its resources on the upper reaches of a catchment, where the lands of the Dalits are usually situated. Such lands are reclaimed and made cultivable and are used for raising food crops. (mostly mixed crops), so as to ensure food security for those vulnerable dalit households. This approach is designed to create a subsistence base for the Dalits through relocating control over agricultural processes and food production in the hands of the Dalit and other poor women. It aims to reduce their livelihood vulnerabilities.

(see Annexure 1 for a detailed conceptual note)

The program was planned and implemented by the women sub-committee formed by the Sangam. Appropriate norms for implementing the program were also developed.

People's Contribution

- * the member has to contribute 25% of the cost in case of bunding, removing stones, bush clearance, rock fill dams, gully plugs, check dams
- * 2 cartloads of manure and
- * an advance payment of 25% towards the cost of bullocks



Repayment

- * 25% of the cost has to be repaid in case of bunding, removing stones and bush clearance
- * The cost of manure and bullocks is given as 100% loan.

Plantations

Saplings are supplied by DDS and farmers take responsibility for planting on bunds and protection.

Crops

80% of the crops cultivated should be food crops, no commercial crops like cotton, sugarcane and tobacco are to be cultivated; and in case crops like ginger, turmeric, chillies, onions, garlic are cultivated they will not exceed 10% of the cropped area. Crop diversity is another important conditionality.

Cropping practices

Only organic manures and methods will be used for cultivation. Chemical fertilizers or pesticides should not be applied.

Land

The treated lands will not be sold, leased or partnered for the coming 10 years.

Bullocks

Bullocks taken on loan should be used for the lands of members on priority. These program conditionalities helped in several ways, the most important being a strong stakeholder control over the program, internalising costs (reducing paid out costs) and emphasis on food crops leading to food security.

2. Scope and Methodology of the Study

The present study is aimed at documenting and analysing the changes brought about by the watershed program with respect to land, livestock, crops and production; and the impact these changes have made on food security, work pattern, wage rates and income of the households in the watershed villages. The study is not intended to look at the program implementation issues nor the institutions but is rather narrowly focused on the above changes. The study also does not attempt at a detailed statistical analysis; it is more exploratory in nature and is an attempt at capturing various emerging experiences.



The prime thrust of the study is to look at the household level changes brought about by the watershed program with respect to core aspects of livelihoods.

This study was taken up by WASSAN along with the DDS team. Four watersheds were selected for the study viz., Yedakulapally (YD) and Metlakunta (MT) from the old watersheds (1997-99), and Raipally (RP) and Dhanwar (DH) from the new watersheds (2001-2003).

The land treated per household ranges from 1.1 to 2.7 acres with an average of 1.9 acres. About 90% of the households are from scheduled castes, 8% from backward castes and one household each from scheduled tribe and Muslim families (Table. 1) (Fig. 1).

2.1 Selection of sample households

A total of 20 households were selected for the detailed study from these four watersheds (5 from each watershed). But in Metlakunta only 3 households could be surveyed thus reducing the total selected households to 18. Patterns of households were identified first in each watershed by listing all the households on cards and noting the main data sets like total land owned, livestock etc. The cards were sorted out in the same

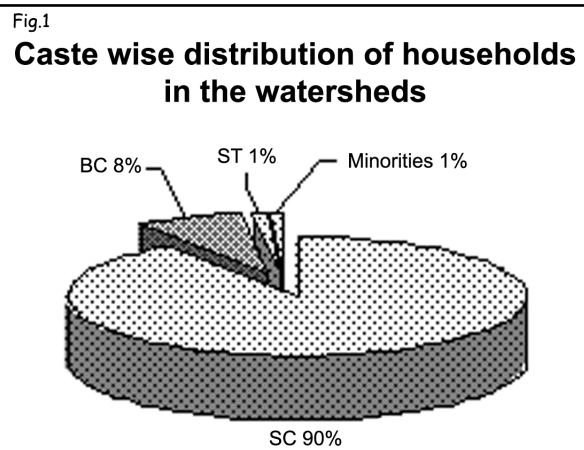


Table 1: Composition of Households and their treated land in the selected watersheds

S. No	Watershed village	Households					Land treated under watershed (acres)				
		SC	BC	ST	MN	Total	SC	BC	MN	ST	Total
1	Yedakulapally	33	1	-	1	35	88.7	3.3	3	-	95
2	Metlakunta	58	-	-	-	58	114	-	-	-	114
3	Dhanwar	52	1	-	-	53	113	3	-	-	116
4	Raipally	47	14	2	1	64	52	14	2	3	71
	Total	190	16	2	2	210	367.7	20.3	5	3	396

MN: Minorities

participatory exercise to classify the households into different categories. Representative sample households were identified from these patterns along with the watershed committee members and other women.

2.2 Survey methodology

The methodology consisted of an intensive household survey and analysis. Investment data on each household/their land was taken from the work registers. Several tools of livelihood analysis were used in the household survey like seasonality, mapping, food security analysis etc. Data was generated on the present situation and the situation before the watershed program. The changes in the land and the livelihood system in the households were mapped.

In Yedakulapally (YD) and Metlakunta (MT) watersheds four crop cycles were completed after the program. In Raipally only some households went through two cropping seasons. In some lands only one crop was raised and that too in drought year leading to crop failure. There are differences in impact between these two sets of households and wherever relevant, the impact was analysed separately. The reference year in the old watersheds is a normal rainfall year, whereas in new watersheds it is a low rainfall year. The drought situation during the post-watershed period (reference year) dampens the impacts to certain extent and includes a downward bias in the estimates.

The analysis is presented in two parts; Part I presents a brief analysis of the nature of watershed investments and Part II presents a household level analysis. The conclusions and summary are presented at the end.

Part I :

3. Analysis of Investments in Selected Watersheds

The investments made in the Dalit Watersheds Program are diverse and comprehensive aiming at regenerating agriculture in the lands. In contrast, the focus of the mainstream watershed program is mainly on soil and water conservation.

3.1 Profile of Watershed Investments

Table 2 presents details of the program investments (see also Fig. 2). These diverse program components evolved from the participatory planning exercises and comprise of



soil and water conservation (bundling, rock-fill dams, percolation tanks and checkdams), *making the land cultivable* (bush clearance and stone removal), *improving soil fertility* (manure application), *improving the biomass* (bund plantations) and *easing critical production constraints* (purchase of bullocks).

These hardware investments are complimented by the conditionalities as discussed in the previous section.

The average investment was Rs.3,887 per acre. Out of this 37% was loan on bullocks and manure application. Another 29% was one fourth loan and three fourth on subsidy basis. About 34% of the total investment is complete subsidy mainly for common investments such as gully control and water harvesting.

The contributions and loan amount together constitute about 60% of total investments. Major part of the investment was on field bunding followed by purchase of bullocks and application of manure. The contribution by members was mainly in terms of labour.



The average investment was Rs.3,887 per acre and Rs.7,418 per household which varies with the type of land, number of acres and the treatments required (Fig. 3 and Table. 3). The

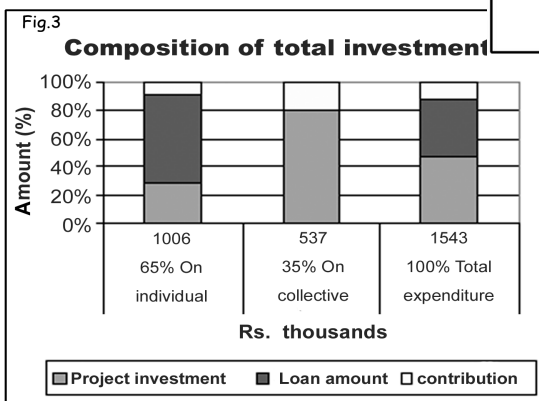
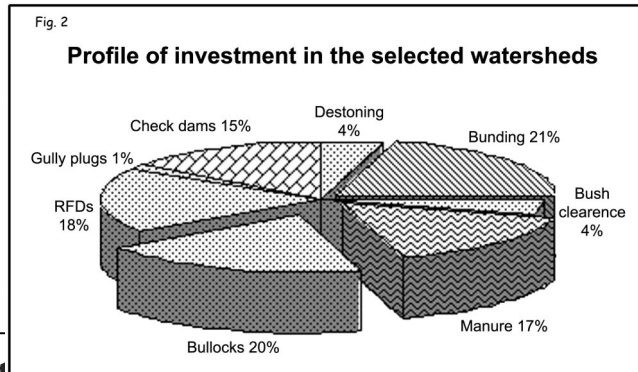
Table 2: Watershed wise details of works done and investments in the sample watersheds (Rs. in thousands)*

S.No.	Component	Yedakulapally	Metlakunta	Dhanwar	Raipally	Project Expenditure	% of Proj Expenditure	Contribution	Total Cost	% of Total Cost	Loan (%)
1	Removing stones	31.81	-	18.60	-	50.41	4	16.80	67.25	4	25%
2	Bunding	47.87	104.26	76.67	43.93	272.73	20	50.71	323.51	21	25%
3	Bush clearing	-	-	21.78	22.75	44.53	3	14.84	59.37	4	25%
4	Manure application	73.25	91.20	41.40	50.40	256.25	19	Loan + 2 cart loads	256.25	17	100%
5	Purchase of Bullocks	176.00	64.00	16.00	48.00	304.00	22	Loan + 25% of investment as contribution	304.00	20	100%
6	Rock Fill Dams	34.00	86.40	39.12	70.85	230.37	17	52.78	283.15	18	—
7	Gully plugs	11.00	13.00	-	-	24.00	2	-	23.00	1	—
8	Check dams	-	45.00	67.50	60.00	172.50	13	57.50	230.00	15	—
	Total	373.92	403.86	281.07	295.93	1353.68	100	192.63	1546.53	100	—

* The investments were drawn from multiple sources/ programs of DDS, while the major part was supported by SDC-IC AP NGO program.

investment is Rs.9,600 per ha in Dalit watershed program compared to Rs.6,000 per ha in the mainstream watersheds; the latter includes 20% project management costs.

Contribution and loan amount together amounts to nearly 60% of the



total investments. The main lessons emerging from the experience is that people can contribute significantly if

- a) the components in the program address their needs
- b) the investments are comprehensive and
- c) the program is in their control.

Table 3: Watershed wise total expenditure (including contributions) and its distribution (individual plots, collective works)

S.No	Watershed	No. of acres	No. of HH	On individual plots *	On collective works	Total expenditure	Investment per acre (Rs.)	Investment per HH (Rs.)
1	Yedakulapally	95	35	329	45	374	3936	10683
2	Metlakunta	114	57	260	144	404	3543	6963
3	Dhanwar	117	52	175	107	281	2423	5303
4	Raipally	71	64	165	131	296	4168	4624
	Total			928	427	1355		
	Contribution			82@	110	193		
	Grand Total	397	208	1010	537	1543	3887	7418

* Includes loans for manures and bullocks & constitute about 60% of this investment

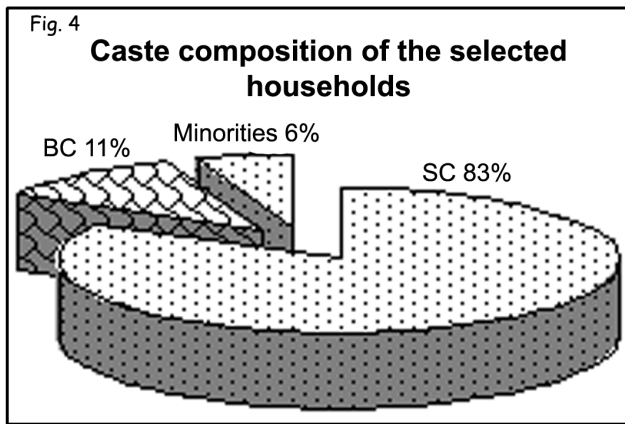
@ Contribution excluding loan taken.

HH – Household

PART II

4. Analysis of sample households

The sample consists of 18 households selected from four watersheds-Yedakulapally and Metlakunta representing the old watershed program and Dhanwar and Raipally representing the new ones. The households selected represent three categories: poorest, poor and better as identified by the women in a relative poverty ranking exercise (within the watershed households). Different parameters (vulnerability, number of dependants in the family etc.) were considered for poverty by the community. All these households would be under the ‘poor’ category in the overall village context.



The caste composition of selected households fairly reflects the caste composition of total members. Of the eighteen sample households, SCs, BCs and Minorities constitute 15, 2 and one respectively (Fig. 4). In the sample 18 households, eight belong to the ‘poorest’, six households to ‘poor’ and four to ‘better’ categories.

4.1 Focus of the Study

A detailed analysis of the household data is presented in the following sections. The analysis focuses on the livelihood systems of the households – particularly on their asset base, food security, work patterns and income flows.

- Study Parameters**
- Wage earnings from watershed works
 - Changes in land holdings and land use
 - Changes in cropping patterns, yields and income
 - Changes in the cropping pattern in the lands outside watershed
 - Changes in work patterns and wages
 - Household level picture regarding food and income
 - Changes in livestock and fodder supply

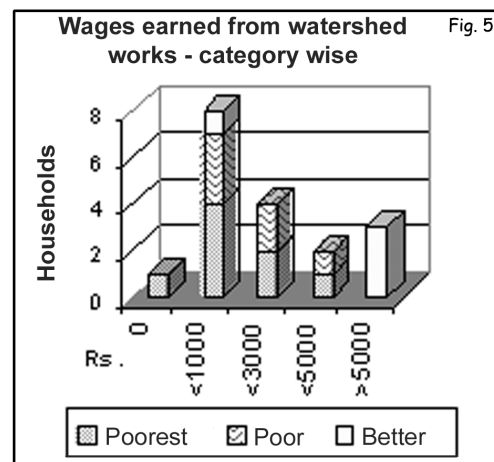
Most of the households have land outside the Dalit Watershed area also. The initiatives within the watersheds have lead to changes in the crop patterns in the land holdings of the households falling outside the watershed area. These changes are also analysed.

4.2 Changes in the livelihoods

4.2.1 Wages incomes

Almost all the households are wage labour and belong to the 'poor' category in their villages. As wage incomes are critical for their survival these households cannot afford to loose wage employment while developing their lands. The program strategy is to see that the households get all the wage employment generated in the program. These wage incomes would provide critical sustenance while the members concentrate on developing their own lands.

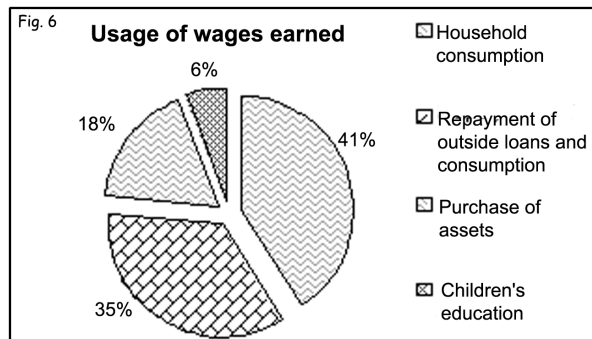
Around 50% of the households earned less than Rs.1000 as wages from watershed works. Around 35% of households earned between Rs. 1000–5000. Interestingly the households earning more than Rs. 5000 are all 'better' category households (Fig. 5). The 'poorest' and poor form the majority of low to medium wage earners. The correlation between high wage earnings and the 'better' category is significant (0.73).



The reasons for this are manifold; the extent of land owned, the number of earning members in the family available during work, health and ability to work are some of the factors. It calls for a more focused effort in wage employment planning to secure better wage opportunities for the poor and the poorest.

Usage of wages earned

About 41% of households used the wage earnings for household consumption or purchasing food. These are the households, which mostly earned less than 1000, and



matches with poor and the poorest categories. 35% of the households used the earnings for repayment of loans which helped them in saving on the interest amount. Most of the members who benefited this way are from poor and poorest households. About 18% of the households purchased assets, mostly of women's choice like buying ornaments

and storage boxes (Fig. 6). The program was entirely in the hands of the women *Sangam* and women were the main wage workers, the earnings thus were mostly retained in the hands of the women.



4.2.2 Changes in land use and land holdings

Most of the households have own land even outside the watershed area. But in most cases it is marginal/small holding and is not enough to enable them to bargain for better wages.

The land use pattern before and after the watershed treatment is presented in Table 4. The data is for the entire land holdings of the selected households (even outside the watershed).

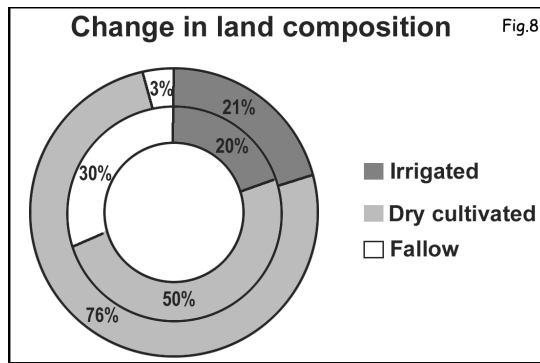
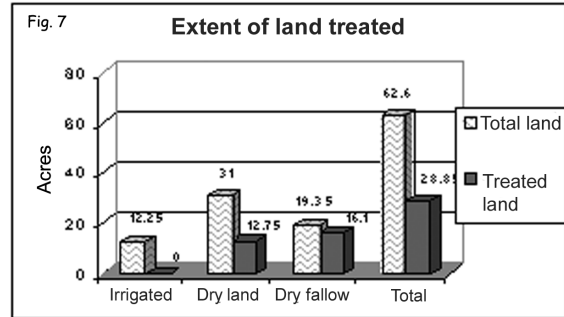
Table 4: Watershed wise details of total land use and land treated of selected members (figures in Acres)

S.No	Village	Land use (before)			Land treated under watershed			Land use (after)		
		Irrigated	Dry	Fallow	Irrigated	Dry	Fallow	Irrigated	Dry	Fallow
1	Yedakula-pally	4.75	4.25	7.85	0	4.25	6.10	5.25	13.85	1.75
2	Metlakunta	0	4.50	0	0	4.50	0	1.50	4.50	0
3	Dhanwar	7.00	9.25	6.00	0	4.00	6.00	7.00	17.25	0
4	Raipally	0.50	14.00	4.50	0	2.00	4.00	0.50	18.00	0.50
	TOTAL	12.25	32.00	18.35	0	14.75	16.10	14.25	53.60	2.25
	Percentage(%)	20	51	29	0	48	52	20	76	3

The key feature in land use changes is that more than 90% of fallow land and around 50% of dry land of the selected households was treated and now it constitutes significant portion of the cultivable land of the households. This additional land brought into cultivation and the increase in the productivity of the land already in cultivation enhanced the extent of crop produce available to the household.

Details of land treated

Of the total land holdings of the selected households 90% of fallow land and 40% of dry land were treated. In case of old watersheds i.e Yedakulapally and Metlakunta more than 90% of the cultivated dry land of the households was treated, but in new watersheds around 25% is treated (Fig. 7). In case of new watersheds, many households have more land outside the watershed.



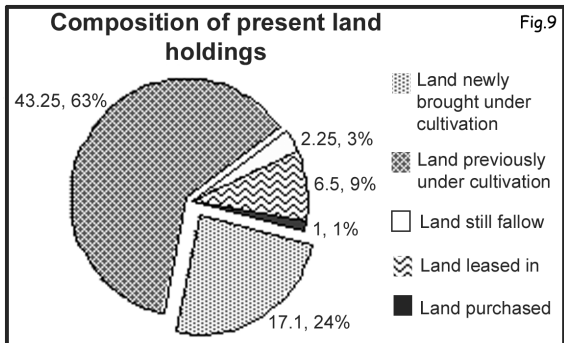
Change in land use

Fallow lands decreased from 30% of the total land holdings to 3% i.e. about 90% of the fallow land was brought back to cultivation. The dry land being cultivated increased from 50% to 76% (Fig. 8). Only a fraction of this increase is due to purchase/leasing in. There is a modest increase in irrigated land.

The land under cultivation after the program increased by 30%. This is due to land newly brought under cultivation, land purchased and land leased in. Altogether there is a substantial increase in the productive lands. The acreage and percentages are presented in the Fig. 9.

4.2.3 Change in cropping pattern, yields and income in the treated lands

The productivity of treated land increased significantly. The change is more in the case of old watersheds. In the new watersheds the change is positive but not high. The food grain production from the treated land almost tripled. However, the net increase in food grain availability for a household is only around 20%. This is due to shifts in crops cultivated outside watershed area and also drop in wages earned in grains.



Once the food needs are met from their own lands, cultivation of crops like green gram, Bengal gram, red gram etc. has increased, particularly in the lands outside the water-

sheds. Simultaneously in the irrigated lands, onion and sugarcane are being cultivated. But they do experience the bitter taste of market in the face of fluctuating prices particularly with regard to onion.



Change in cropping pattern

There are significant shifts in the crop patterns as presented in Table 5. The crops *mostly used for self-consumption* are Jonna (Sorghum), Sajja (Pearl millet), Korra (Fox tail millet), Togari (Red gram), Anumulu (Field beans), Bebbarlu (Cow pea), Nuvvulu (Sesamum), Lankalu (Beans), Kusuma (Safflower), Ulavalu (Horse gram), Puntti (Roselle), Avise (Linseed). Crops that are consumed and also sold include Green gram, Bengal gram, wheat and paddy. The

pure cash crops are Onion, Chilly, Potato, Coriander and Sugarcane.

Table 5: Shifts in cropping pattern in the lands treated

S.No	No.of crops	No. of households					
		Mostly for consumption		Mostly for sale		Cash Crops	
		Before	After	Before	After	Before	After
1	0	9	0	15	9	17	15
2	1 to 2	1	3	3	7	1	3
3	3 to 4	4	3	0	1	0	0
4	>5	4	12	0	1	0	0

Table 5 shows the change in number of crops cultivated in the given unit of land before and after watershed program in the treated land.

There are 9 households, which have not cultivated any food crops before the watershed

program. After the watershed all households have food crops. The diversity in food crops increased as the households growing more than five crops increased from 4 to 12. This diversity helps in securing food during droughts.

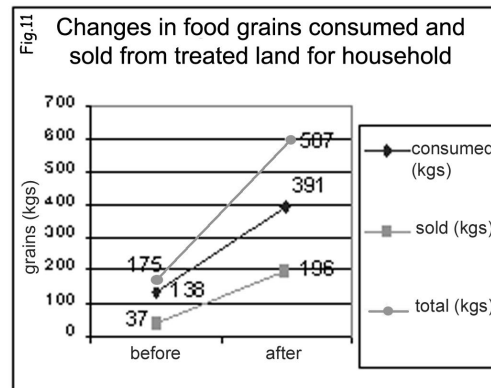
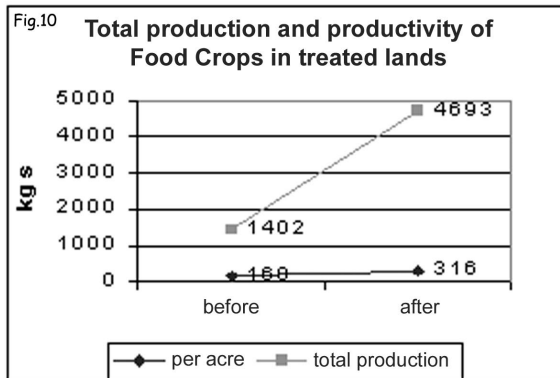
There is not much change in the households growing cash crops. There is substantial increase in households growing food crops, the surplus of which is sold. The increase is from three households to nine households producing more than one crop. These trends indicate increase in households cultivating a diverse range of food crops.

Change in yields of food grains

Since there is variation between the old watersheds and new watersheds (discussed in the methodology) the analysis is presented separately.

Old watersheds

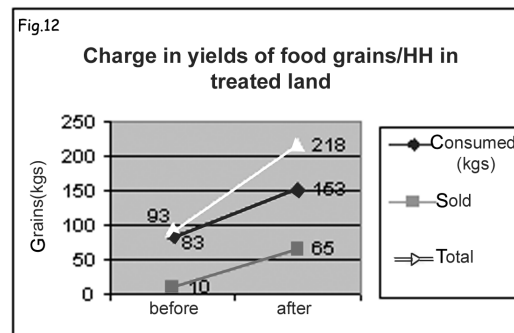
The productivity of the treated lands per acre almost doubled from 160 kg to 316 kg. The total production increased by 3.35 times from 1402 kg to 4693 kg (Fig. 10).



Here the yields of food crops for consumption and sale are taken together. Production of food grains consumed in the household has increased by nearly three times from 175 kg to 587 kg per household (Fig. 11). The production of food grains that are mostly sold increased by 5 times; mainly due to the fallow lands brought under cultivation and also due to the increased productivity of lands already under cultivation.

New watersheds

The net increase is marginal in case of new watersheds when compared to the old watersheds, due to several factors. Only one crop is harvested in most of the lands, i.e. first crop after keeping the land fallow for years. Because of erratic rainfall in the year 2003-04,



Jowar failed and the production fell drastically. The marginal increase despite these factors is due to increase in the cultivated area (Fig. 12).



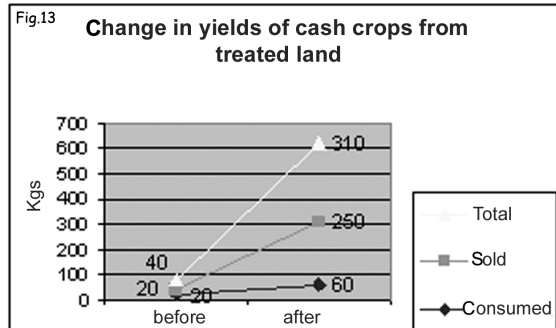
Change in yields of cash crops

Onion, potato, coriander and chillies are considered here as cash crops. In the lands treated under watershed sugarcane is not cultivated. Though not to the degree of food grains, the production of cash

crops did increase significantly increasing the cash flow into household (Fig. 13).

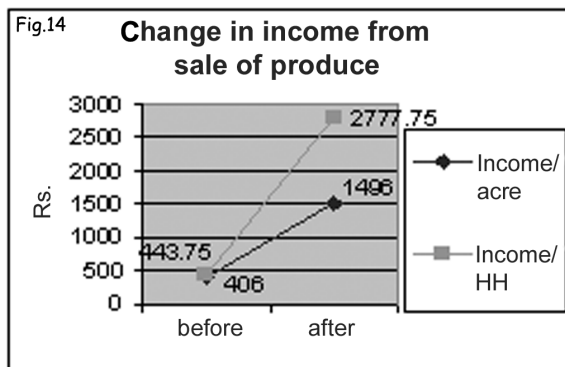
Change in incomes from sale of produce

In the old watersheds the increase in income per household from the sale of produce is around 6 times, from Rs.444 to 2778 (Fig. 14). In the new watersheds it is almost 4 times, mainly due to increase in area cultivated rather than increase in productivity per acre (Fig. 15).

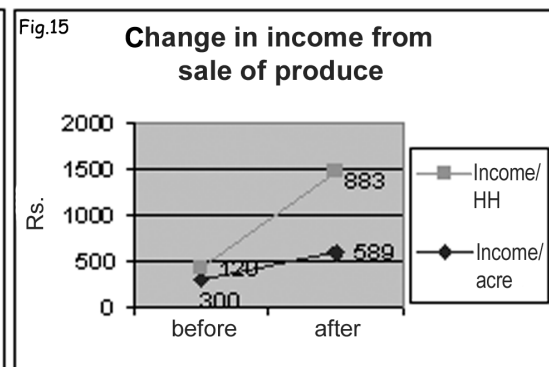


In case of old watersheds the income per acre from the sale of produce increased by more than three times from Rs.400 to Rs.1500 where as in the new watersheds there is not much change; the standing red gram crop in most of the lands is not considered in the calculation and also the number of crops raised is less in this case.

This indicates substantial income gains at the household level from the sale of food crops.



Old watersheds

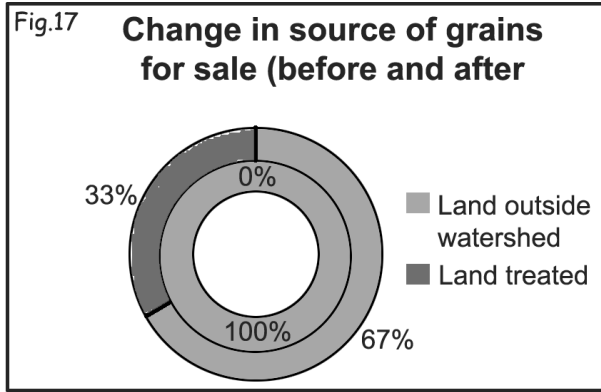
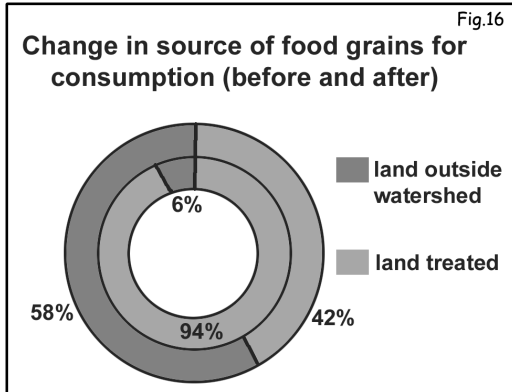


New watersheds

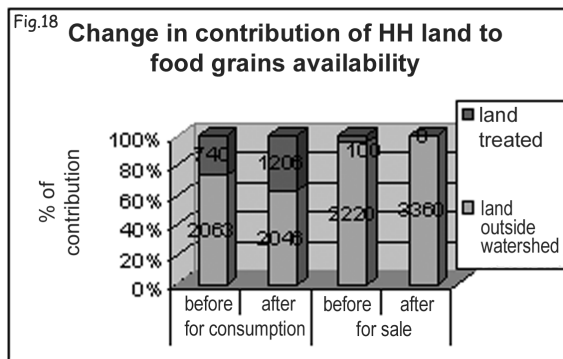
4.2.4 Composition of food grains from lands under watershed and outside watershed

(i) Old watersheds

Figures 16 and 17 show, respectively, changes in the sources of food grains (from the land treated and from land outside the watershed) consumed in the household and sold. The inner circle in both the charts represents the situation before watershed and the outer one after the program. Out of total food grains (for consumption) 94% used to be from the



land outside watershed before treatment (the inner circle in the figure). But after the program it constitutes only 42% (outer circle). The lands treated now are taking the major share. Similarly the lands treated now contribute 33% of total food grain production for sale from an earlier position of 0%. Thus the contribution from the lands treated towards food grains production is now more than 1/3rd of the total production.



(ii) New watersheds

Similarly, in new watersheds share of food crops for consumption from treated area increased from 25% to 40% (Fig. 18). The production of crops sold from treated land decreased. The marginal increase in the food crops for consumption and the decrease in surplus are mainly due to crop failure in the

current year, which is taken as the base year for the study.

4.2.5 Change in cropping pattern in the lands outside watershed

Table 6 shows the change in number of crops being raised by the number of households in their lands outside watershed. There is an increase in the category of 1-2 food crops raised for consumption where as significant increase is in the case of food crops for sale(as seen in the category of 3 to 4 crops) in the lands outside watershed (Fig. 19). These trends indicate that the households

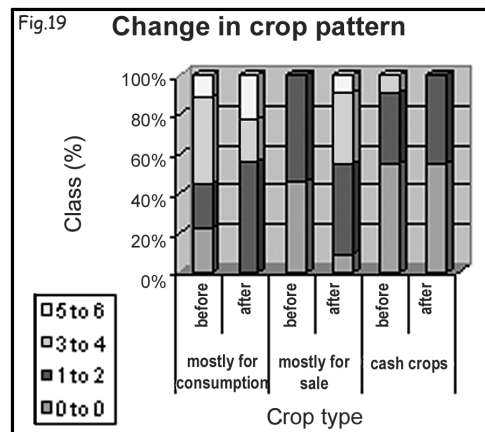


Table 6: Shifts in cropping pattern in the lands outside watershed

S.No	No. of crops	No. of Households					
		Mostly for consumption		Mostly for sale		Cash crops	
		Before	After	Before	After	Before	After
1	0	2	0	5	1	6	6
2	1 to 2	2	5	6	5	4	5
3	3 to 4	4	2	0	4	1	0
4	5 to 6	1	2	0	1	0	0
5	7 to 8	2	2	0	0	0	0

have reallocated their crop pattern decisions. The land outside watershed area was allocated for crops whose surplus can be sold. The reason is substantial quantity of food grain is now available from treated lands. There is marginal change in the number of households regarding number of cash crops.

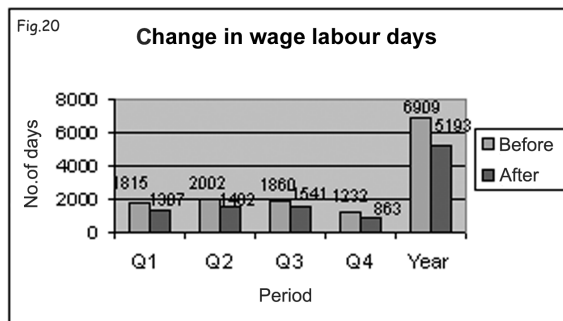
4.2.6 Change in work patterns and wages

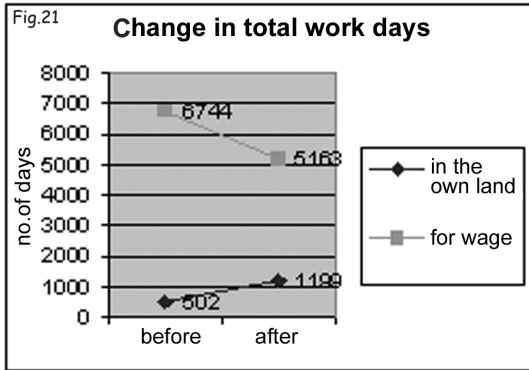
The positive changes in the productive land holdings and crop yields are reflected in the changed work profile. The number of days of wage labour reduced by around 25% and the number of work days in one’s own field almost doubled. While the wages earned in cash increased by about 40% there is a drop in wages earned in grains by 12%. This reflects the shift towards high wage rate works (sugarcane/ bullock hiring) etc. from low wage rate works. There is also an increase in real wage rates. This indicates the change in the demand – supply dynamics of labour in the village, which restored control of poor over their labour. This is reflected in the statements of Bollaram Mogulamma and Errolla Poolamma of Yedakulapally that earlier they used to go in search of work to the farmers, now the farmers come to their homes to request for labour. Thus they are now in a position to bargain for the wages.

Change in number of wage days

The number of working days on others fields for wages reduced to an extent of almost 25%. And the drop in absolute number of days (around 400) is uniform across all quarters in one year. This fall is reflected in the doubling of the number of working days in one’s own field (Fig. 20 and 21).

Other significant feature is the drastic fall in number of persons engaged in annual contract work (jeetham) with big farmers. This is a kind of distress employment, where in a household in need of some cash for

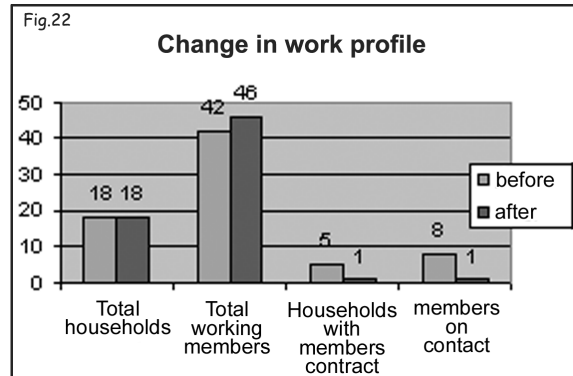




earlier children of school going age were also kept at "jeetham" resulting in lost opportunities for the person.

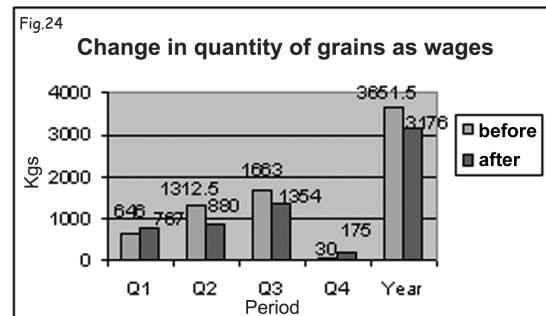
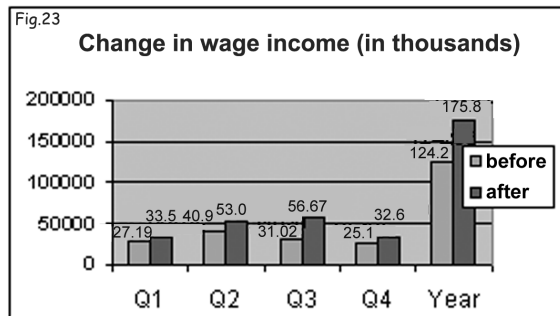
Out of 8 members now only one person is continuing to work on contract (Fig. 22). This establishes the preference of working in one's own field and reduced dependency on outside work.

either health needs or marriage or for investment to buy land takes advance from the farmer and one person of the household works fulltime for the employer through out the year at lower wage rates. It is also observed that



Change in wages and grains received as wages

Though the number of wage days reduced, total wages earned increased mainly due to increase in wage rates (From Rs. 10-15 to 20-30).



The increase in wages is related to change in work profile. Increased work in sugarcane fields and hiring of bullocks brought in higher wages (Rs. 60 to100 per day). Wage employment for grains (kind payment) reduced and thus grains received as wages reduced by an extent of 10% (Fig. 23 and 24). Contrastingly the share of wage income in cash has gone up, almost equaling the increase in the income from treated land.

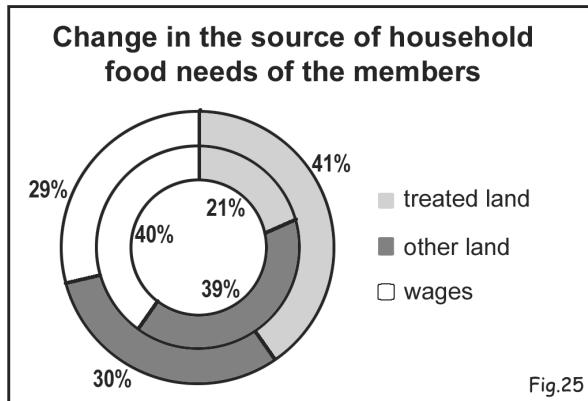
The implication is that the families can participate in the wage market more freely i.e.

having control over their own labour.

Though there is not much decrease in number of persons doing normal agriculture labour, there is fall in number of days in this respect. There is variation within households regarding change in number of working members for wages. In some of the households it is observed that after watershed development women and old people are working on their own farm lands rather than going out for wage labour; another indicator for increased choices.

4.2.7 Change in composition of source of food grains and income

Figures 25 and 26 show change in the composition of source of food grains and income of the total households. These two are interrelated as the availability of food grains from



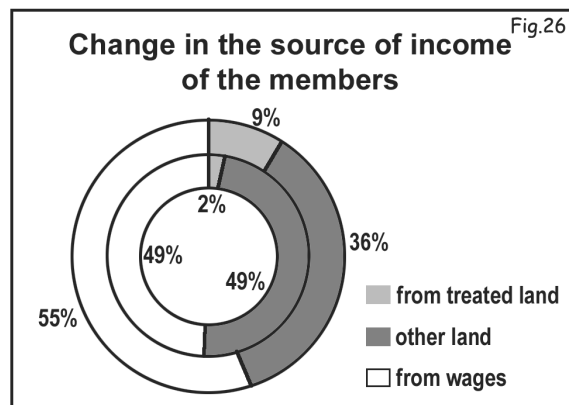
own land influences work in the others' land for wages. The inner and outer circles in both the charts represent the situation before and after the watershed program respectively.

The dependency on wage incomes (in the form of food grains) to meet the household food needs decreased from 40% to 29% as much of the food needs are now met from treated lands (an increase from 21% to 41%). There is a moderate

increase in the share of 'income in the form of cash' from the wage labour (49% to 55%) and also income from the treated lands (2% to 9%) (Fig. 27).

So at community level there is,

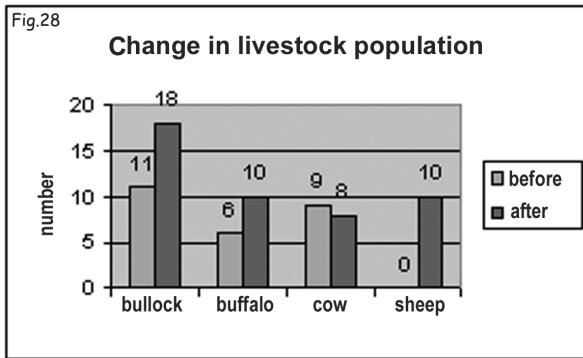
- * Increase in the contribution of treated lands to the household food and cash needs
- * Decrease in the contribution of wage labour to the household food needs but increase in the contribution to household cash needs.
- * Proportionate decrease in the share of the land outside watersheds in both food and cash needs.



4.2.8 Change in Livestock and fodder supply

Livestock population

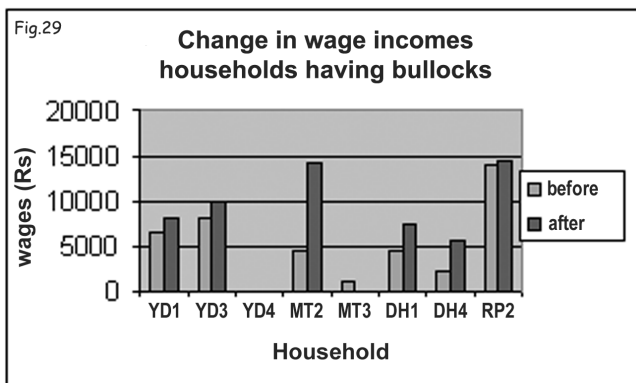
Lack of draft power was identified as a major constraint in cultivating the lands of the poor. Purchase of bullocks through a loan was therefore inbuilt into the program. Bullocks increased by 60% after the watershed program. The number of cows decreased and buffaloes increased over time (Fig. 28).



livestock numbers. Growth in sheep is an independent phenomenon.

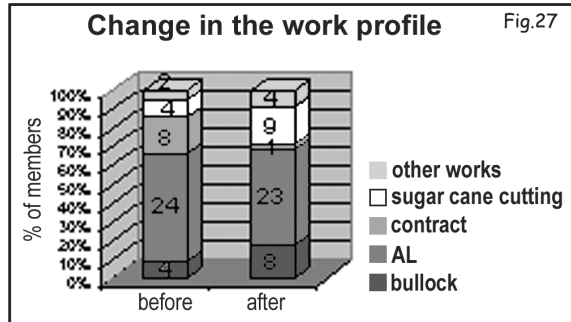
Bullocks – income enhancement

It is observed that in cases where the bullocks were newly acquired and used for hire purpose the increase in wage income is substantial (Fig. 29 and Table 7). In the case of households who already have bullocks the increase in wage income through



Change in the work profile

Fig.27



All the food crops taken up also yield fodder thereby increasing fodder availability from their own lands. As a consequence, cash purchase of fodder reduced, saving them the expenditure. It also reduced the vulnerability.

Increased fodder supply from owned land and bullocks resulted in increased

Table 7: Change in wage incomes of households having bullocks

S.No	HHID	Wage income	
		Before	After
1	YD1	6500	8000
2	YD3	8080	9920
3	YD4	0	0
4	MT2	4500	14250
5	MT3	1000	0
6	DH1	4400	7500
7	DH4	2325	5600
8	RP2	14080	14400
Total			

bullocks is less; so also in the households using bullocks mostly in their own lands. Their agriculture production has compensated for wage income.



4.3 Household level analysis of food grain sufficiency

The previous sections presented an aggregate analysis. This section presents the household level variations in food and income and the reasons there of.

4.3.1 Distribution of sources of household level food grain supply

The main sources of food grains are the land within the watershed (treated), land outside the watershed and wages earned in grains. Table 8 presents the household level data on the quantity of food grains obtained from these three sources before and after the watershed program.

Of the total, 67% households reported increase in food grain availability for household consumption and 33% have reported a decline. The extent of decline ranges from 13 to 80% across the households. Failure of crops resulting from erratic rainfall is the reason for decline in the households in Dhanwar and Raipally watersheds. While loss of working male members is the reason for one household in Metlakunta (MT1) and shift to cash crops is the reason in another case (YD4). Rest of the 77% households showed increase in food grains from 8 to 420% from the situation existing before the watershed program.



Table - 8: Change in food grain availability of the sample households
Household wise source of food grains for consumption (in a year)

S.No	HH Id	Before (grains in kg.)				After (grains in kg.)				Change in the total food grain availability	Remarks
		From land treated	From other land	From wages (in kind)	Total	From land treated	From other land	From wages (kind)	Total		
1	YD1	90	220	90	400	243	258	380	881	+ 120%	
2	YD2	125	0	358*	483	422	0	105	527	+ 10%	
3	YD3	0	500	160	660	457	350	163	970	+ 47%	
4	YD4	0	800	282*	1082	410	85	60	555	- 49%	Allocation of land outside water shed to cash crops
5	YD5	180	0	160*	340	460	0	75	535	+57%	
6	MT1	400	0	275*	675	75	0	31	106	-80%	Husband & son died in an accident; no one to take care of agriculture.
7	MT2	0	0	200*	200	547	450	50	1047	+ 420%	
8	MT3	332	0	250*	582	575	0	55	630	+ 8%	
9	DH1	0	70	315	385	25	400	502	927	+ 140%	
10	DH2	0	210	313	523	46	175	232	453	-13%	Jowar & other crops failed
11	DH3	0	0	362*	362	0	0	293	293	-19%	Rainfall failure & less attention. Red gram is still to be harvested

12	DH4	700	0	320	1020	205	100	1052	1357	+ 29%	
13	DH5	0	443	0	443	52	450	0	502	+ 13%	
14	RP1	0	700	154*	854	5	600	32	637	-24%	Jowar failed and no.of wage days decreased as the family worked more on their land
15	RP2	40	510	190*	740	625	306	0	931	+25%	
16	RP3	0	0	195*	195	50	0	46	96	-50%	Jowar failed and no.of wage days decreased as she worked on her own land
17	RP4	0	130	28	158	0	115	136	251	+60%	
18	RP5	90	0	0	90	280	0	0	280	+200%	
Total		2397	5803	5227.5	13,427	5638	4455	3860	13,953		
%		17.9	43.2	38.9	100	40.4	31.9	27.7	100		
Avg		133.2	322.4	290.4	745.9	313	247.5	214.4	775.1		

4.3.2 Household level food grain sufficiency

The household food grain needs consist mainly of Jowar, Pulses and Rice. About half of the quantity of rice required is met from the Public Distribution System. Rice from wages (in kind) and open market purchases constitute the other half. But the needs of Jowar and other pulses are largely met from land and wages in kind. The following table presents the food grain surplus/ deficits at household level. These deficits are inclusive of all kinds of grains and are met by purchases from PDS or open market.

Table - 9: Household level food grain sufficiency (from land and wages)

S.No	HH Id	Total Family Members	Earning members	Food grain inflow from (kg.)	Food grain needs in a year (kg.)	Deficit / surplus (in kgs)	Food grain Deficit HHs	Remarks
1	YD1	5	5	881	696	+185		
2	YD2	5	3	527	420	+107		
3	YD3	6	5	970	480	+490		
4	YD4	9	6	555	780	-225	✓	Mainly in to sale of produce
5	YD5	4	2	535	480	+55		
6	MT1	6	3	106	420	-304	✓	Only 1 acre dry land
7	MT2	7	4	1047	912	+135		
8	MT3	9	6	630	720	-90	✓	2.5 ac but large family size
9	DH1	13	7	927	660	+267		
10	DH2	6	4	453	636	-183	✓	2 ac & 1 ac is still fallow
11	DH3	2	1	293	408	-115	✓	Crop failure
12	DH4	13	6	1357	900	+457		
13	DH5	12	6	502	636	-134	✓	
14	RP1	7	3	637	600	+37		
15	RP2	5	3	931	576	+ 355		
16	RP3	5	3	96	264	-168	✓	Only 1 ac land
17	RP4	6	2	251	432	-181	✓	Crop failure
18	RP5	4	4	280	456	-176	✓	Crop failure

Though there is significant increase in food grain production from own land by 3 times after watershed program, 50% of the sample households still have food grain deficit. These households have to purchase the deficit food grains from the PDS or open market. The other 50% of the households could meet their requirement from own land and wages in kind.

Reasons for food grain deficit in some households are indicated in the remarks column of Table 9. Crop failure, larger family size and lower land holdings are the main reasons cited. In one household (YD4), it is a deliberate choice of crop-pattern. Adequate land holding sizes and insuring at least a small part of the land against droughts are important factors for ensuring sufficiency in food grains.

As the households could meet most of their food grain needs from agriculture, they are able to spend much of their income on purchasing assets or in meeting other household expenditure. Increased investments in housing and a reduction in high interest loans from money-lenders for marriages are reported during the participatory exercises. Expenditure on consumer items like hair oil, soaps also increased compared to earlier.

4.4 General observations

The study mainly looked at part of the livelihood benefits of the Dalit Watershed Program in terms of changing land use, food grain production and sufficiency, wage income and employment. This section outlines some general observations.

1. The decision making in the program is mainly in the hands of women Sangam/groups. They could decide on the components of the program and investment details, which is reflected in the diversity and appropriateness of the program interventions. Women's control is reinforced as the crops taken up are also food crops meant for household consumption. Recognizing women as farmers and decision makers and vesting the program investment decisions in their hands is still a long way in the mainstream watershed programs.
2. The conditionalities on investments of the program viz., not to sell lands, only food crops, not using chemicals have helped in setting a basic frame of food security and internalizing the costs of production.
3. The program has invested only on a part of the total land holdings of a household in most of the cases. Coverage of the entire land holding of a household may have given better results.

4. In some lands, like those in Metlakunta village are very marginal in quality. Though they were brought into cultivation through deep ploughing and manuring, the productivity of the lands is still low. These households may need continuous support beyond one or two years of the project period till the quality of the land is built up. It is reflected in the number of households (9-10) that left the treated land fallow after 1-2 years of cultivation in Metlakunta. They preferred outside wage labour to work in their own fields. Support for one -two years in the form of employment provision or making consumption credit available might have altered the situation.
5. In some cases the land-holding itself is very small to provide food grain sufficiency. The possibilities of increasing access to cultivable land through various means can also be considered.
6. Bullocks are provided through loans to some of the members on condition that they provide services to others. It is observed that in Metlakunta this process is not taking place due to problems in sharing the bullocks. As a result, (along with other factors) some of the lands treated are left fallow.
7. The need for proper mechanisms for maintenance of the watershed infrastructure is evident in Raipally.

5. Summary and Conclusions

The Dalit Watershed Development Program has focused on regenerating the lands and livelihoods of the poor. The program strategy and components evolved through an intensive participatory process. The program includes a diverse range of activities such as removal of stones and scrub vegetation, deep ploughing, soil fertility enhancement, planting trees, soil and water conservation, and easing critical production constraints like lack of draft power.

About 60% of the total investments made in the program are in the form of loan and people's contribution. The per hectare investment amounts to Rs.9,600 (Rs.3,887 per acre) as compared to Rs.6,000 in the mainstream watershed program including program management costs. About 90% of the fallow land and 50% of the dryland holdings of the members were treated in the old watersheds and about 25% in the new ones. In the latter, much of the land of the members falls outside the watershed area. The old watersheds have gone through four crop cycles while the new ones only one. As all the investments were mostly labour oriented, the program could also provide significant wage employment to the members.

The program conditionalities have emphasised on food crops, crop diversity, not using chemical fertilisers or pesticides and not selling the land for 10 years. These conditionalities have a major contribution in achieving the objectives of food sufficiency and decreasing vulnerability.

The present study aims at documenting and analysing some of the livelihood impacts of the program- mainly changes in land use, production, income (through wages and sale of produce) and food sufficiency. Livelihoods of a sample of 18 households from four of the eight program villages were analysed as part of the study carried out by WASSAN along with the DDS team. The old watershed villages could see four agriculture seasons since they were completed while the new ones had experience of only one year, that too drought year.

The following are the main observations of the study:

1. Wage earnings from direct investments from the program ranged from Rs.1000 to 5000 per household. Those households slightly better off within the sample could access more wage employment i.e. to the tune of Rs.5000 per household. Much of these earning (76%) was spent on purchasing food and repayment of old loans.

2. Fallow lands in the households decreased from 30% of total land holding to 3% and effective land under cultivation increased from 50% to 76%. There is an increase in the diversity of crops cultivated.
3. Productivity in the lands has almost doubled and the total production in the households has increased by 3.3 times. This in turn has increased the food grain availability at the household from 175 kg to 587 kg in the old watersheds. As a result, dependency on wage income to meet food grain needs decreased from 40% to 29%. In 67% of the households the supply in food grains for consumption from the treated land increased over the pre-watershed level by 8% to 420%.
4. However, in 33% of the households there is a decline in the availability of food grains for consumption; explained by factors like crop failure, loss of working members etc. 50% of the sample households are now able to meet food grain needs from land and wages in kind. They need not invest their cash income on purchase of food grains. The other half of the sample households are still food grain deficit though the level of deficit has reduced significantly after the program. This gap is filled up by purchasing food grains from PDS or open market. Small land-size holdings, loss of working members, large family size are some of the factors responsible.
5. Interestingly, though the program heavily emphasizes on food crops, the total cash income flows in to the households increased. Increased control over their own wage labour and reallocation of production/ land-use are the two major factors contributing to this phenomenon.
6. Produce from some of the food crops from land within and outside the watershed area was sold. Income from sale of produce increased by 6 times over the pre-watershed level i.e. from Rs.444 to Rs.2778 per household and income per acre also increased from Rs.440 to Rs.1500 in the old watersheds. The land treated under watershed program contributed to 33% of the food grains sold.
7. Before the watershed program about 94% food grains consumed used to come from lands owned by the households but are located outside the watershed. This has reduced to 42% as the fallow lands brought under cultivation supplied much of the food grains for consumption after the program. In the new watersheds the share of treated land in the household food grain consumption increased from 25% to 40%.
8. As increased production from the land within the watershed area supplied the food grains required for household consumption, the farmer has greater choice of crops in the rest of her land holding. Allocating the regenerated (relatively)

low quality land for food grain production provides greater crop choice in the productive land.

9. As the level of food sufficiency at the household increased, there is withdrawal of labour force from the market. The number of wage labour days within the households reduced by 25%. However, the wages earned in cash increased by 40% and wages earned in kind (grain) decreased by 12%. These indices show the increased negotiating capacity of the wage labour. As observed by the members, they are now free to choose their work and are no longer dependent on the big farmers for wage labour. The choice is for work in sugarcane and cotton fields that provides cash wages i.e. a pronounced shift towards high wage rate works resulting in increased real wages.
10. There is a drastic fall in the members serving as attached labour (*jeetham – annual contract work*). Another observation is that the women and aged are now employing themselves in their own lands.
11. The households obviously are in better control of their own labour after the program.
12. As plough bullocks are a part of the program investments, their number increased from 11 to 18 (39%). The overall livestock holdings increased by 77%. Increased fodder availability from owned lands is a major contributory factor for the increase in livestock.
13. Wage income from bullocks has significantly contributed to the total income of the households who have taken bullocks on loan.

Once the household is food grain-sufficient they can participate in the free wage market and make better choices on their land use. It is important in this process to keep the cost of production low and internalise all the agriculture inputs. Manures, non-pesticide management methods and crop diversity though imposed as program conditionalities, have ensured keeping the costs and vulnerability at low levels.

The following lessons emerge for the mainstream land development and poverty programs in the rainfed regions including watershed development program.

1. The experience and study results point to the significance of land related investments in poverty elimination programs
2. The need to make comprehensive investments aimed at
 - a. regenerating the productive capacity of soil/ land and
 - b. easing all the production constraints like plough bullocks

3. Flexible program components evolved from intensive participatory exercises and rigorous conditionalities to ensure focus on food grains/ crops and to promote genuine production interests.
4. Control over the program investments in the hands of women
5. The criticality of initial wage employment provision (eco-employment) till the households could get reasonably assured food grains from their lands
6. The experience also underlines the need for insulation of at least a patch of the rainfed land from rainfall fluctuations per each household.

The above experience of Dalit Watersheds emphatically proves how comprehensive land development can contribute to the process of poor people taking control over their own lives.

Annexure : 1

Dalits, Women, Tradition and Watersheds: Can there be a harmony ?

*- a case study of exclusive dalit watersheds of Deccan Development Society
by P V Satheesh, Director, Deccan Development Society, Hyderabad, India*

(An extract from the paper)

The context of exclusive watershed for dalits has to start with some fundamental questions about the present watershed approach in various parts of this country. Many of these questions have been raised in various fora individually and collectively. But not many answers have been found. Therefore it is imperative to raise them once again.

The first question relates to equity. Most watersheds are not evaluated for who they are benefitting . What about the outcaste lands which are generally owned by dalits and the poor? How much are these people benefiting ?

In the conventional watershed is there a risk of poor people's lands changing hands at the end of the watershed development? In these watersheds the results are expected to come thick and fast. This results in the lands suddenly acquiring a new value and the poor owner of the land is not able to realise and handle this value addition. As against this, a slower, incremental improvement of lands allows the poor land owners time to absorb the development. This has the potential to facilitate the continuing ownership of lands by the poor.

The top priority of the conventional watershed is to treat the ridge. No problem with that. But is the question Who owns the ridge ? ever asked ? Isn't the ridge made up mostly of poor people's lands ? By making them to grow grasses and trees, do we always treat these lands as blotting pads only to absorb water ? The way the North wants the South to be its carbon sink, is investment being made on the ridge (owned by the poor) so that they act as a water sink and release water to better lands in the valley (owned by the rich) get further better ?

Another strong cause advanced in favour of conventional watershed is the ecological cause. How much of the benefits of this cause will go to the poor directly? The environmentalists in the sixties, seventies and eighties made environment a people's movement. But the fruits today are going to transnationals working on a myriad of money spinning projects. Environment has become a flourishing industry and the poor who lead the movement in

.....
A Case for Comprehensive Public Investments

the past are left gazing behind.

Conversely, are conventional watersheds really ecological in nature ? Have these watersheds lead to more organic ways of growing crops or have they encouraged increased use of chemicals in agriculture ? Rainfed areas are the last ecological niches we are left with as far as agricultural is concerned. Farmers in these areas are hesitant to use chemicals for fear of non-availability of water for protective irrigation. Once watersheds are established and a confidence that unending water supply is available, what kind of shift takes place in this attitude? In some of the most famous watersheds in this country, hybrids have replaced traditional and more adapted landraces. Monocultures have displaced crop diversity. Chemicals have replaced more earth-friendly soil nutrients. Pests have made their vibrant appearance for the first time. The ultimate loser in this process has been ecological agriculture.

Another question. How do we ensure food security through watersheds ? What kinds of crops does a watershed support ? Are there regular shifts from food cropping to cash cropping in these watersheds? Will there be an inevitable sense of de javu at the end of a watershed, with high external input agriculture coming in and displacing more diverse traditional agricultural systems? Will this lead to food security or a new food scarcity? Increasing commodity yields have decreased food security and increased vulnerability. In 1998 the unending suicides by a number of cotton farmers in South India should ring loud alarm bells for watershed people all over this country. Will conventional watersheds spread this canvas of disaster far and wide ?

Then the issue of water itself. Dr Hanumantha Rao, a leading watershed specialist puts forth an unexceptionable four waters theory. But the point that water levels will rise in the open wells and so people will take that water for irrigation might be a bit of misreading of people. As water retention capability increases, people will run after deep tubewells. More so in the era of globalisation and privatisation which seriously entertain the idea of declaring agriculture as an INDUSTRY.

Those who are working with dalits and women need to be bothered increasingly with these questions. Their basic interest lies in protecting the livelihood systems of the poor. In their concern to do good to the poor if they follow conventional watersheds, they may snatch away even the available livelihood systems from the poor.

In this context, is there a new watershed paradigm that we can think of ? A watershed, not so dramatic, not so expensive, but very incremental. A watershed that works exclusively on poor people's pariah plots. A watershed that increases the soil fertility and moisture levels gradually and incrementally. A watershed that can answer a series of questions:

.....
A Case for Comprehensive Public Investments

- * Questions of Equity
- * Questions of Food Security
- * Questions of Food Production
- * Questions of Ecological Agriculture
- * Questions of increasing stake on the land
- * Questions of technology

On the last point there are serious arguments that need to be heard with rapt attention :

- * Watershed is a conceptual hangover from Tennessee Valley Project where the twin objectives were to see that maximum water was disposed off to the reservoir and minimum silt went to the reservoir. It was a strategy meant for the reservoir and not for the people who lived on the lands where the structures were built. Still it worked in the temperate climate of Tennessee Valley. But in a dry place like Kansas it collapsed.
- * Technology can be a barrier for people's participation.
- * Check dam is a disposal device; not as a storage device. Its priority is to see how much water should be disposed how quickly. However, water should be seen in totality. Not as head end collection at the ridge itself (the way check structures do it) but as tailend collectors (like ponds in Indian Hydrology).
- * Structures must be built to support vegetation; not vegetation to support structures; While trees grow, structures deteriorate.

It is in the background of these questions that the Deccan Development Society took up three micro-mini watersheds exclusively meant for dalits and managed either partially or totally by dalit women. In the following pages I will try to tell the tale of these watersheds.

Background and Rationale

Zaheerabad area in Medak District of Andhra Pradesh, where the Society works, lies at the centre of the semi-arid tract. Ravaged by years of drought and plummeting ground-water table, agricultural lands sport a sorry face here. Year after year fallows expand as more and more people desert parcels of their agricultural lands, unable to cope with the rising costs of cultivation and depleting ground water table.

Unlike in the regions endowed with fertile soils, where farm lands are invariably owned by the rich, most people in Zaheerabad own agricultural lands, however small they may be. For the poor these lands have either been gifted by the erstwhile feudal landlords for services done or by the democratic government as a part of its land reforms programme. But these lands are mostly of very poor quality. The landlords gifted those lands which were of less use for them. The government distributed degraded lands declared surplus

under the land ceiling act.

One of the early strategies employed by DDS to cope with the problem of these degraded lands was to provide the women members of DDS sanghams 100 days of eco-employment every summer to better their own pieces of degraded lands through bunding, top soil addition, destoning etc. In other words what we did was to treat each farmer's land as a tiny watershed.

The scale on which this was done was not enough. To bring a qualitative improvement in the lands and lives of the people, it needed a lot more investment and much more planned work.

An important step in this direction was the programme on Alternative Public Distribution System, which had three aims : Local food production, local food storage and local distribution. Under this programme we made an investment upto Rs. 6000 per hectare. This has given an extra advantage to the poor people's lands by offering them the advantages of ploughing it with tractors and softening it and fertilising it with farmyard manure With this lands have become more productive. With that the stake for the poor on their lands has increased manifold.

Still the threat of Structural Adjustments hangs on their head. Big seed companies are eyeing cheap lands in large stretches of hundreds of hectares. The poor people's lands maybe the first casualty in this buying spree unless we further improve the productivity of these lands and with it the poor people's stake in it.

Wasteland plantations are also a new asset to the poor. DDS sanghams have started growing richly diverse plantations in their villages. Since 1994 more than 1000 hectares of public lands were brought under tree cover by the sangham women. These plantations comprise of a number of trees which give them fuelwood, fruit and minor timber in a sustainable fashion from the year 2002.

The DDS watersheds are another step in this path.