CHAPTER-VII
SUMMARY AND CONCLUSIONS

7.1 STATEMENT OF THE PROBLEM

Even today state bureaucracy dominates the scene of rural development in the third world countries and India is no exception to this. State bureaucracies development effort even today tends to be "top down" approach with out taking into consideration the felt needs of the people and without making concerted efforts to seek the participation of the people as equal partners in their own development. Even after the initiation of the process of democratic decentralization and creation of local self government in the country in general and in rural areas in particular the bureaucratic development process suffers with many drawbacks like indifference, dictatorial attitude, ignorance of local needs, negative attitude towards involving the people in the development activities and finally rampant corruption.

On the other hand non government organizations though their geographical area of operation is small in the country and their efforts only touch the miniscule population are supposed to be more successful in the development and welfare programmes. The NGOs claim that they are successful because their approach is "bottom up" and they make all the efforts to mobilize the people to participate in their own development. Their set up and approach is democratic and they act only as facilitators of development but not as imposers.

Of late, apart from their own initiatives in developmental, welfare and advocacy activities, a few of the NGOs have become partners with the government agencies to initiate and manage a few developmental programmes. One such programme is development of watersheds particularly in the rural areas of the country.

The importance of watershed development is well recognized by all the development experts. Watershed programme is an integrated one addressing the problems in rain fed areas. It addresses the environmental and ecological problems like afforestation, water conservation and most importantly it is supposed to achieve
sustainable agriculture besides providing increased employment to the farmers as well as to the labourers.

Of all the beneficiaries, the most benefited under watershed programme are the farmers of all types, like large, small and marginal farmers. Watershed brings them many favours like improvement in the ground water levels, restoration of eroded soils, crop rotation, improved agricultural technology, increased and improved animal husbandry, more green fodder to their milch and draught cattle etc.,

Principal objective: The present study makes an attempt to understand and analyze the NGOs who claimed success in the watershed management and the impact on the farmers participating in the watershed programmes claimed as success by the NGOs.

Specific Objectives:

5. To understand the approach of the NGOs which claimed success of watershed programmes initiated and the end results.

6. To study the extent of participation of the farmers in the various stages of watershed programme.

7. To find out the extent of knowledge internalized by the farmers on various aspects of watershed programme and the extent of adoption of the knowledge internalised.

8. To understand the impact of the watershed programme on the economic and social life of the farmers.

Methodology:

Area of the study:

Prakasam district in Andhra Pradesh was purposefully selected for this study. The district was selected because of two reasons, firstly in most of the areas in the district, agriculture is rain-fed and the rain fall is scarce and erratic. Secondly it is
one of the few districts not only in Andhra Pradesh but also in the country where a number of watershed programmes have been launched in the rain-fed areas and a number of NGOs were entrusted with the initiation and management of watershed programmes.

Sample Selection:

**Selection of NGOs:** Between 1999 and 2003, 19 NGOs were entrusted with watershed programmes in the Prakasam district. The 19 NGOs covered 114 watersheds in 114 villages in 19 mandals of the district. 9 NGOs which claimed success in the watershed programme and further confirmed by the government agencies which entrusted the programme were selected for the study.

**Selection of Villages:** Since each watershed covered 500 hectares of land in 1 village, 9 villages, one under each of the 9 selected NGOs were selected for the study. The NGOs themselves were asked to select one village each which they considered as most successful in implementing the watershed programme.

**Selection of the Sample Farmers:** in each of the selected 9 villages 16 percent of the farmers were selected to make are in-depth analysis of watershed impact on them. In the selection of the sample farmers, care was taken to select almost equal percentage of farmers from different social divisions in each of the 9 villages. The sample farmers were classified into four social divisions namely (1). Forward castes (2). Backward castes (3). Scheduled castes and (4). Scheduled tribes. It means all the castes found in each of the 9 villages were classified under four social divisions for the sake of convenience of the analysis. Further care was taken in the selection of the sample farmers to provide representation to the large farmers, small farmers and marginal farmers.

Below given Table shows the scheme of sample selection.
<table>
<thead>
<tr>
<th>Name of the NGOs</th>
<th>Name of the Mandal</th>
<th>Name of the Village</th>
<th>Total Farmers Families</th>
<th>Sample families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongole Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HELP</td>
<td>Korisapadu</td>
<td>Pamedipadu</td>
<td>455</td>
<td>72</td>
</tr>
<tr>
<td>RDS</td>
<td>J.Pongalur</td>
<td>Chandalur</td>
<td>466</td>
<td>74</td>
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<tr>
<td>RASO</td>
<td>Ballikurava</td>
<td>Vemavaram</td>
<td>730</td>
<td>116</td>
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<tr>
<td>Markapuram Division</td>
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<td></td>
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</tr>
<tr>
<td>CALL</td>
<td>Donakonda</td>
<td>Badapuram</td>
<td>139</td>
<td>22</td>
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<tr>
<td>SNIRD</td>
<td>Dornala</td>
<td>Bommalapuram</td>
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<td>49</td>
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<tr>
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<td>Markapur</td>
<td>Bhupatipalli</td>
<td>100</td>
<td>16</td>
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<tr>
<td>Kandakur Division</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>SARDS</td>
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<td>Pedagolla palli</td>
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<td>42</td>
</tr>
<tr>
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<td>Lingasamudram</td>
<td>Muttamvaripalem</td>
<td>376</td>
<td>60</td>
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<tr>
<td>PDES</td>
<td>V.V. palem</td>
<td>Polineni cheruvu</td>
<td>187</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>3025</strong></td>
<td><strong>480</strong></td>
</tr>
</tbody>
</table>

Data Collection: The data for the study were collected from both primary and secondary sources from January to December 2005. During the period of one year, several visits both extended and short were undertaken to the selected villages.

Primary data were collected through a structured schedule, informal interviews (using detailed checklists), key informant interviews and observation. Secondary data were collected from DPAP, DWMA project directors, Mandal Revenue Officers (MROs), Mandal Development Officers (MDOs), and selected NGOs of the Prakasam district and books and journals.

7.2 APPROACH OF THE NGOs:

It is clear from the activities and works undertaken under watershed programme by the NGOs that they went about it systematically and methodically. The approach of the NGOs is holistic and people-oriented. The NGOs prior experience of working with various peoples' problems, dealing with welfare, health, child labour etc., seems to have came in handy in mobilizing the people for participation and in attempting to address the other problems related directly to the watershed management and indirectly other problems like literacy, health and exposure to mass media etc.
It is also clear that before launching the watershed programme the NGOs surveyed the existing water sources, recorded the rainfall particulars, tested the fertility and salinity of the soils, identified waste lands, vegetation etc., Further they also identified the works to be undertaken under watershed programme, surveyed the socio-economic conditions of the households being covered under the programme.

Most important aspect of any developmental programme particularly in the rural areas is "people's participation" which really makes a difference between the failure and success of a programme. The NGOs initiated a number of social mobilization programmes so that people's participation is achieved in the watershed programme. It may be mentioned here that the areas selected by the nine NGOs under watershed programme were not new to the NGOs. All the NGOs have long back initiated a number welfare and health programmes in these villages. Hence their entry into the watershed programme was not so difficult. However according to the NGOs, they did not want to take it for granted that the people would come forward to participate voluntarily in the watershed programme, hence they initiated social mobilization process.

To achieve people's participation in the programme the NGOs initiated and put into practice many mobilization programmes. Most important of them are (i) Initiation of new SHGs (Self Help Groups) and providing them with revolving funds. They also networked with the existing NGOs as well as helped them to start income generating activities. (ii) Shramadanam seems to have played an important role in bringing the families and people covered under watershed together to participate in the programme. Under the shramadanam programme people were motivated to repair the drinking water wells, school buildings and lay the roads in the villages. (iii) villagers were taken to different parts of the district as well as of the state on exposure visits to see for themselves the benefits accrued to the people under watersheds. (iv) Kalajathas were organized in all the nine villages to motivate and create awareness not only about the importance of watersheds but also about health and sanitation in their lives. (v) Awareness programmes and video shows were arranged not only on the watershed programmes but also to create awareness on various problems faced by the villagers. (vi) Training programmes were
organized in the technical aspects in cultivation, like seed processing, inter cropping, crop rotation, drip irrigation, pest management, use of organic manure, management of soil erosion, reduction of salinity in the soil, judicial management of ground water, management of cattle both milch and draught cattle etc.

(vii) Production of education material to help the primary schools in the watershed areas (viii) Organization of young girls in the villages to train them to address their own problems: it is a kind of empowerment process of the young girls.

(viii) Establishment of girl child resource centres as well as for adolescent girls etc.

Watershed works undertaken, consisted of check dams on the streams, repair of existing tanks and wells, contour bunding, avenue plantation, social forestry, introduction of horticulture, stone terracing, grass land development, agro forestry, raising of kitchen gardens, digging ponds, plantation on bunds, construction of drains, widening channels to the tanks.

When the results or impact of watersheds in the nine villages as reported by the NGOs themselves are examined, it is clear that the NGOs are sure about some of the tangible impact but not intangible impact on the people. For example, area of cultivation under different crops increased, in some cases substantial increase was recorded while in other cases only marginal increase was achieved. Yields of crops also increased, but from the figures, no drastic increase was achieved, it was only marginal, prices of the land increased substantially. There seems to be substantial increase in the green fodder production and the result was increase in the number of cattle in the villages and increase in the milk production. Another substantial impact was increase in the number of days of employment and particularly this is beneficial for land less labourers, under-employed marginal and small farmers. Unfortunately the NGOs did not speak about the level of success achieved in the control of soil erosion, reduction in soil salinity, change in the cropping pattern etc.

NGOs are also not clear on the aspects of health, sanitation, literacy, except making a general statement that they have improved. No information is provided on intangible aspects like, the process of decision making, empowerment etc.
7.3 CHARACTERISTICS OF SELECTED SAMPLE FARMERS:

Out of the 480 respondents, 160 (33.40 percent) are from backward castes followed by 120 (25.0 percent) each from forward castes and scheduled castes and 80 (16.60 percent) from scheduled tribes. Among the total 120 forward castes respondents 43.3 percent are marginal farmers standing next only to backward caste respondents whose percentage is 43 percent. But at the same time out of the total large farmers of 112 are from forward castes.

93.3 percent of the total respondents are males and 6.7 respondents are females. Out of the total 448 male farmers (93.3 percent) majority of them (34.2 percent) are from backward castes, 24.3 percent are forward castes, 24.1 percent are from scheduled castes and 17.4 percent are from scheduled tribes. Out of the 32 female farmers 37.5 percent are from scheduled castes, 34.4 percent are from forward castes, 21.9 percent are from backward castes and 6.3 percent are from scheduled tribes.

When the size of the farmers is examined, 40 percent of the respondents are marginal farmers holding land between 6 to 10 acres and 36.67 percent are small farmers (1 to 5 acres of land). Only 23.33 percent are large farmers (holding more than 10 acres).

Out of 480 respondents, 30.4 percent are found in the age group of 31-40 years, 27.1 percent between 21-30 years, 18.8 percent between 41-50 years, 11.5 percent in 51-60 years, 7.3 percent 60 and above and only 5 percent of the farmers belong to 20 years of age.

82.5 percent of the farmers are married followed by 9.8 percent widowed. Only 4.6 percent farmers are unmarried and 3.1 percent are divorced. Out of the total 120 forward caste farmers 88.3 percent are married. In the case of backward castes it is 80 percent, scheduled castes 80 percent and scheduled tribes 82.5 percent.

In all the social divisions of the respondents, nuclear families are predominant. Out of the total 480 farmers’ majority 74.0 percent belong to nuclear
families, 21.0 percent belong to joint families and only 5.0 percent belong to extended families. Out of the 160 backward caste farmers majority 71.3 percent belong to nuclear families. Same in the case of forward castes (77.5 percent), scheduled castes (71.7 percent) and scheduled tribes (77.5 percent).

Out of 192 marginal farmers' majority 68.2 percent belong to nuclear families followed by 26 percent joint families and only 5.7 percent extended families. Majority of the farmers belong to nuclear families in the case of small farmers (78.4 percent) and large farmers (76.8 percent).

Out of the 480 farmers 31.5 percent belong to five-member families followed by 31 percent to six-member families. Four-member families are 18.8 percent, 8.3 percent belonging to seven-member families, 4.8 percent belong to three member families and 3.5 percent belong to two-member families. Only 2.1 percent belong to one-member family. It is clear that majority of the families of the respondents have five or more than five-members. The average size of the family works out to 4.32.

44.17 percent of the farmers are living in pucca houses and 33.75 percent have kutcha houses. Only 22.08 percent are living in concrete house. Out of the 162 (33.8 percent) living in kutcha houses, highest percentage (35.8 percent) are from backward castes and least (16.0 percent) from schedule tribes. Out of the total 212 farmers living in pucca houses, 31.6 percent are from backward castes and 20.3 percent from scheduled tribes. In the case of concrete houses which number 106, (33.0 percent) belong to the backward castes and 10.4 percent belong to the schedule tribes.

53.33 percent of the farmers are with 6 to 10 years of experiences in farming while 32.09 percent are with experience of 1 to 5 years. Only 14.58 percent are with above 10 years of experiences.

50.0 percent of the scheduled caste farmers are having experience of 1 to 5 years in farming. 47.7 percent of the farmers who are backward castes are having experiences of 6 to 10 years in farming and 44.3 percent of the farmers who belong to forward caste are having experience of above 10 years.
Literacy rate is high (70 percent) among the sample respondents. The literates are found between primary level of education to intermediate and above level of education. Illiteracy is more among the respondents of scheduled tribes (97.5 percent) than among the other three social divisions. 32.5 percent of the scheduled castes respondents are also illiterate. Illiteracy among the backward castes respondents is 10.6 percent and that of forward caste respondents is 6.9 percent. Seen according to the type of the farmers, that is, small, marginal and large, out of the total illiterates of 144, 62.5 percent come from the small farmer category, followed by marginal farmers with 30.6 percent respondents being illiterate. Illiterates among the large farmers, out of the total illiterates are only 6.9 percent.

7.4 STAGES OF WATERSHED AND EXTENT OF PARTICIPATION:

People’s participation is considered to be an important component for the successful implementation of watershed programmes. People’s participation was measured in five stages of the programmes viz., pre-project, planning, implementation, maintenance and evaluation stages. The extent of success of NGOs in motivating the beneficiaries to participate in all the five stages of watershed management could be looked in two ways. Firstly according to the data in the Table (no 34) majority of the respondent farmers participated only partially and effort of the NGOs may be viewed as partial success. If those who participated fully and those who participated partially are combined, the extent of participation is very high and the effort of the NGOs can be said as success.

Extent of Knowledge and Adoption (Practice):

One of the objectives of the study is to find out the extent of knowledge internalized by the respondents (farmers) on a few aspects related to their cultivation and the extent the internalized knowledge is put into practice. To realize to this objective information was collected from the respondents on four aspects like 1) Soil and water conservation 2) Crop production practices 3) Land use pattern and 4) Alternative practices. Under each of the four practices a number of related aspects have been included.
On soil and water conservation the number of respondents who have the knowledge ranged from 95.8 percent on diversion of channels to 85 percent on graded bunds and ridges and furrows. It means overwhelming majority of the respondents have acquired knowledge on the aspects related to soil and water conservation. But how many of them who have knowledge put it into practice or adopted. The answers have been recorded on three choices. 1) Fully adopted 2) Partially adopted 3) Not adopted. The respondents who fully adopted ranges from 17.7 percent on graded bunds to 62.5 percent on check dams. The number adopting partially ranges from 25 percent on check dams to 66 percent on graded bunds. Thus it is clear that there is a difference in the percentage who have knowledge and those who have actually utilized all the knowledge they have.

Knowledge under crop production, ten practices have been included. Out of the ten practices, more than 90 percent respondents have knowledge in the case of seed treatment, seed pest, fertilizer, weeding, and inter-cropping and plant protection. While more than 80 percent respondents have knowledge in the management of rain fed crops, pests of rain fed crops and sowing across the slope. The number of respondents adopting the knowledge ranged from 44.5 percent in rain fed crops to 73 percent in the management of seed pest. The number of partial adopters ranged from 22.5 percent in seed pest to 54.5 percent in plant protection. Around 85 percent of the farmers adopted seven practices on crop production practices. It may be said that the NGOs did succeed to a large extent in motivating the farmers to adopt the various practices on crops production in their fields.

Knowledge on land use pattern in six aspects has been included. The percentage of respondents who have knowledge on land use pattern ranged from 85.4 percent in land reclamation to 95.8 percent in maximum land use. On the other hand, the percentage of respondents fully making use of the knowledge ranged from 29.2 percent in land reclamation to 60.5 percent in the use of improved implements. The percentage that partially used the knowledge ranged from 31.6 percent in the use of improved implements to 55.8 percent in land reclamation.

Eight items on the knowledge of alternative practices have been included. The percentage of the respondents who are knowledgeable on alternative practices
ranged from 82.5 percent in timber fiber system to 87.5 percent in agro forestry. When the extent of adoption is examined the number of respondents who fully adopted or practised ranged from 31.2 percent in timber fibre system to 55.2 percent in social forestry. On the other hand the percentage who partially adopted ranged from 31.6 percent in social forestry to 41.6 percent in agri horti system.

7.5 IMPACT OF WATERSHED ON THE SAMPLE FARMERS:

Ultimately what is important is the extent of impact on the selected respondents (farmers) on their agricultural, economic and social life? To find out the answer to this question enquiry was made using the following indicators. They are crop yields, yields in specific crops, extra land brought under cultivation, crop wise land utilization, increase in the days of employment, increase in the annual income, average expenditure per month, other indicators like, migration, membership in political parties, voting pattern in the elections, contesting in village panchayats and ZPTC elections, participation in the grama sabhas, membership in school education committees, membership in SHGs and watershed committees, participation in awareness programmes organized by the NGOs, interaction with government officials, opening of bank account, ownership of radio and television and reading newspapers.

In the case of more land brought under cultivation majority of the sample farmers (55.6 percent) reported only marginal increase in the land under cultivation while 28.3 percent reported moderate increase. Only 16.0 percent of the farmers reported high increase.

Out of the 77 respondents who reported large increase in land under cultivation, 39.0 percent of them come from backward castes and the lowest (16 percent) from scheduled tribes. Out of the 136 respondents who said that there was moderate increase highest percentage 30.9 percent is from forward castes and again lowest percent (22.1 percent) is from scheduled tribes. Out of the 267 respondents who felt that there was only marginal increase higher percent is from backward castes (36.7 percent) and lowest is from scheduled tribes (13.9 percent).
Out of 77 farmers reporting high increase in the land brought under cultivation 57.1 percent of them come from small category of farmers. On the other hand 16.9 percent come from marginal farmers while 26 percent are from the large farmer category. Out of the total 136 who opined that there was a moderate increase in the land brought under cultivation 39 percent is from small farmers 33.8 percent from the marginal farmers and 27.2 percent come from large farmers. Out of the 267 who opined that there was marginal increase in the land brought under cultivation 49.8 percent of them come from marginal category of farmers 29.6 percent come from small farmers and only 20.6 percent from the large farmers.

In the case of land increase under different crops, land under chili crop increased from 229 to 303 ha after watershed programme followed by tobacco from 526 to 762 ha, gingili from 369 to 435ha, ground nut from 335 to 480ha, red gram 385 to 500ha, castor 310 to 380 and black gram 72 from 95ha.

Crop wise yields indicate that ground nut and red gram achieved more increase than the other crops like chili, tobacco, gingili and black gram after the introduction of watershed programme.

With regard to crop yields after the introduction of watershed programme 48.5 percent (233) of the sample reported only marginal increase in crop yield while 22.3 percent (107) reported high increase and 29.2 percent (140) reported moderate increase. Out of the 107 farmers reporting high increase in the crop yields 37.4 percent are from backward castes followed by 21.5 percent from scheduled castes, 20.6 percent each from forward castes and scheduled tribes. On the other hand out of the total farmers of 140 who reported moderate increase higher percentage (30.7 percent) are from forward castes followed by backward castes and scheduled castes (each 25 percent) and scheduled tribes (19.3 percent). Out of the 233 farmers reporting only marginal increase in the crop yields 36.5 percent are from backward castes followed by 26.6 percent from scheduled castes 23.6 from forward castes and 13.3 percent are from scheduled tribes.

Among the 107 farmers reporting high increase in crop yields majority of them (54.2 percent) are from small farmers group, followed by large farmers (34.6
percent) and the least is (11.2 percent) from marginal farmers. On the other hand
40.7 percent of the 140 farmers reporting moderate increase are from the marginal
farmers followed by small farmers (32.9 percent) and large farmers (26.4 percent).
Out of the 233 farmers that reported minimum increase majority them are (52.8
percent) from marginal farmers.

With regard to the increase in the days of employment, 50.2 percent of the
farmers reported that there was moderate increase in employment days while 28.5
percent reported marginal increase and only 21.3 percent felt that there was high
increase in the number of days of employment in the year. Out of the 102
respondents who opined that there was high increase in the days of employment,
37.3 percent are from forward castes and least (7.8 percent) from the scheduled
tribes farmers. Among 241 respondents who opined moderate increase, highest
number (31.5 percent) is found among the backward castes farmers while least (18.3
percent) are found among the scheduled tribes. 35.0 percent of the total 137 sample
who opined marginal increase belonged to backward castes and again least
percentage (20.4 percent) among the scheduled tribes felt that there was only
marginal increase.

Out of the total 102 farmers who opined that there was high increase in the
number of days of employment 46.1 percent each from marginal farmers and large
farmers were of the same opinion while only 7.8 percent of the 102 are found among
the small category of farmers with similar opinion. Out of the 241 farmers who
opined that there was only moderate increase, higher percentage (49.0 percent) are
from the small farmers and least (20.3 percent) from large farmers. Out of the
137 farmers who felt that there was only marginal increase, majority of them
(51.8 percent) are from the category of marginal farmers and least (11.7 percent) are
from large farmers.

All said and done main objective of any development programme apart from
others is the increase in the income of the beneficiary. When this aspect is examined
majority (52.9 percent) of the farmers felt that the increase in their annual income
was only marginal and 29.2 percent felt that increase was only moderate while only
17.9 percent opined that the increase was high. It is interesting to note that when the
total respondents from each social division is considered more percentage (19.2 percent) of respondents from scheduled castes reported high increase in the income than from the other social divisions. But when the total respondents (86) from all the social divisions together who reported high increase are considered, respondents from backward castes top the other three with 33.7 percent.

Out of the 86 farmers who opined there was high increase in the annual income as a result of watershed programme majority of them (52.3 percent) come from small farmers and the least percentage (17.4 percent) come from the marginal farmers. In the moderate increase category (total 140) 40.7 percent of the small farmers fall in this group while least percentage (25 percent) of large farmers also opined only moderate increase. Out of the 254 who opined only marginal increase 50.8 percent of them come from marginal farmers and the least percentage of 20.1 come from large farmers.

Except in the case of power/fuel which remained same during pre and post watershed programme, in the rest of the items the average monthly expenditure has increased post watershed programme. In the post watershed programme, education seems to have received great impetus, because the average monthly expenditure on education after the watershed has risen by 18 percent. Next comes, spending on medical care and post watershed increase in expenditure on this item is by 7 percent.

About 86.6 percent (1st rank) of the farmers observed that enrolment increased in the schools after watershed programme. 83.5 percent (2nd rank) of the farmers believe that there was decrease in the rate of migration and 73.9 percent (3rd rank) observed improved sanitation and health.

Socio-political impact:

The socio-political impact before and after watershed programmes on various aspects in the life of farmers shows that membership of respondents in SHGs increased from 17.1 percent to 87.9 percent, like wise opening of bank accounts increased from 17.7 percent to 87.9 percent. There was also large increase in reading news papers among the respondents and the increase noticed was 53.0 percent after the watershed programme.

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As for membership in political parties is concerned only 34.1 percent of the total (480) respondents were members in political parties during pre-watershed but in the post-watershed period the membership increased to 59.5 percent and the percentage of increase was 25.4. Considered social division wise percentage of increase (10 percent) was more among the respondents from backward castes followed by 6.6 percent increase among forward castes, 6.3 percent increase among scheduled castes and 2.5 percent increase among scheduled tribes.

In the pre watershed period, out of the total respondents 58.3 percent voted in the elections to legislative assemblies and local bodies. During and after the post-watershed programme 86.0 percent participated in voting. The percentage of increase from pre to post watershed is 27.7 percent. When division wise voting pattern is examined it is interesting to note maximum increase of 9.1 was found among the respondents of backward castes while the least percentage of increase (2.9 percent) was found among the forward castes.

Participation in grama sabhas increased from 30 percent to 63.1 percent. There was 33.1 percent increase in the respondents participating in grama sabhas after the introduction of watershed programme. Once again it is noticed that there was 9.7 percent increase among the backward castes respondents 6.4 percent found increase among the respondents belonging to scheduled tribes.

With regard to SHGs, the NGOs were most successful in increasing the membership of SHGs (70.2 percent) among the respondents. Once again largest percentage of increase was found among the backward castes (25 percent) during the post-watershed period. Next to the backward castes come the scheduled castes respondents with 18.7 percent increase and that of forward castes with 17.1 percent. Least increase (9.4) in membership was found among the respondents from the scheduled tribes.

Participation of the respondents in awareness-programmes during the post-watershed period increased by 30.2 percent. Once again respondents from the backward castes fared better with 14.2 percent increase in the participation in post-watershed period. Least increase (2.9 percent) was found among the respondents.
from scheduled tribes. The increase in participation in the other two social divisions i.e. forward castes and scheduled castes is 6.9 percent and 6.2 percent respectively.

There seems to be a kind of awakening among the backward castes because once again they outscore the other three social divisions with a 13.5 increase in the interaction with government officials in the post watershed period. Once again least increase in the interaction with government officials (3.1 percent) is found among the respondents from the scheduled tribes.

From pre-watershed to post-watershed there was 70.2 percent increase in opening of the bank accounts among the respondents. Backward castes respondents stand first with 24.9 percent increase and respondents from scheduled tribes stand last with only 9.4 percent increase.

During the post-watershed period increase in the ownership of radios and televisions is 16.2 percent. In this, respondents from scheduled castes have marched marginally ahead (5 percent) of other three social divisions. Once again least increase is found among the respondents of scheduled tribes (2 percent).

Overall 53 percent increase of reading newspapers in the post-watershed period among the respondents is found. Again respondents from backward castes stand first with 23.5 percent increase while scheduled tribes' respondents stand last with least increase (2.7 percent).

Problems faced by the Farmers:

Lack of sufficient rainfall (97.9 percent) was the top most problem experienced by the farmers followed by 92.5 percent faced the problems of pests and diseases. High cost of seeds, fertilizer and pesticides (87.5 percent), difficulty in practicing recommended soil and moisture conservation practices due to the involvement of high risk and cost (80 percent), non-availability of quality and quantity of seeds (75.8 percent), small land holdings (75 percent) and high initial investments (71.6 percent) were considered as some of the constraints that were recognized by the majority of the farmers (more than 70 percent) during the post-watershed programme.
Suggestions from the respondents:

The respondents advanced a few suggestions to solve some of their problems to reap better results from the watershed programme. They are, cloud seeding for good rains (1\textsuperscript{st} rank), supply of drought, pest and disease resistant varieties of seeds (2\textsuperscript{nd} rank), remunerative prices for farm produce(3\textsuperscript{rd} rank), provision of subsidy facilities for seeds, fertilizer and pesticides (4\textsuperscript{th} rank) and financial assistance for soil and moisture conservation practices (5\textsuperscript{th} rank).

Problems faced by the NGOs:

Failure of rainfall (77.7 percent) at critical stages of crop was the major problem faced by the NGOs on which they have no control. Further, 66.6 percent of the NGOs were displeased about the untimely supply of agricultural inputs and less people's co-operation. About 55.5 percent of the NGOs spelled out problems of lack of drought resistant varieties of seeds while 44.4 percent expressed the problem of inadequate and delay in finance release and the frequent transfers of extension personnel. Only 33.3 percent of NGOs viewed small land holdings of the farmers as a constraint in the extension of watershed programme.

Suggestions from the NGOs:

88.8 percent of NGOs suggested that cloud seeding operations should be taken up for getting good rains, 77.7 percent suggested timely supply of agricultural inputs and long term loans for land development programme followed by no frequent transfer of extension personnel. Further, 66.6 percent of NGOs suggested supply of drought, pest and disease resistant seeds.

Finally how should one categorize the NGOs, highly successful, successful, moderately successful and marginally successful? In other words what is the truth in their claim that they are successful in the management of watersheds in terms of impact on beneficiary respondents in the nine villages selected for the study? When examined item wise of watershed impact their success differs from aspect to aspect.

In motivating the respondents to participate in extension activities their success is only moderate. Also in motivating the respondents in the five stages of watershed programme is moderate. When knowledge gained by the respondents on
various aspects of watershed programme, the NGOs were able to motivate very high percentage of respondents to acquire knowledge, so this aspect can be termed as high rate of success of the NGOs. But on the other hand in involving the respondents to practise the acquired knowledge, in most of the aspects they achieved only moderate success. The least achievement of NGOs is found when the impact of watershed on the respondents as a whole is examined. Because in many of the aspects, the number of respondents who expressed marginal impact, is more than those who expressed high and moderate impact.

Overall the extent of success in watershed management by the NGOs can be categorized as moderate.