PROGRESS REPORT

For the period 01.10.2012 to 31.03.2013

Submitted to

EED : Project No. : 20120225 G (2012-15)
ICCO : Project No. : 71-03-03-035 (2012-15)

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# LIST OF ABBREVIATIONS

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<th>Sl.No.</th>
<th>Abbreviation</th>
<th>Expansion</th>
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<tr>
<td>1</td>
<td>AF-EC</td>
<td>Accion Fraterna, Ecology Centre</td>
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<tr>
<td>2</td>
<td>ATL</td>
<td>Area Team Leader</td>
</tr>
<tr>
<td>3</td>
<td>BIFSRA</td>
<td>Bio-intensive Farming System in Rain fed Areas</td>
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<td>4</td>
<td>CDM</td>
<td>Clean Development Mechanism</td>
</tr>
<tr>
<td>5</td>
<td>CER</td>
<td>Certified Emission Reduction</td>
</tr>
<tr>
<td>6</td>
<td>FYM</td>
<td>Farm Yard Manure</td>
</tr>
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<td>7</td>
<td>CBO</td>
<td>Community Based Organization</td>
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<tr>
<td>8</td>
<td>IKG</td>
<td>Integrated Kitchen Garden</td>
</tr>
<tr>
<td>9</td>
<td>Ha.</td>
<td>Hectare</td>
</tr>
<tr>
<td>10</td>
<td>E&amp;E Coalition</td>
<td>Empowerment &amp; Entitlements Coalition</td>
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<tr>
<td>11</td>
<td>FCN</td>
<td>Fair Climate Network</td>
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<td>12</td>
<td>FCRA</td>
<td>Foreign Contribution Regulation Act</td>
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<tr>
<td>13</td>
<td>FFS</td>
<td>Farmer Field School</td>
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<td>14</td>
<td>GHG</td>
<td>Green House Gases</td>
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<tr>
<td>15</td>
<td>GSS</td>
<td>Grama Sasyamithra Samakhyas</td>
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<tr>
<td>16</td>
<td>HEIDA</td>
<td>High External Input Destructive Agriculture</td>
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<tr>
<td>17</td>
<td>ICRISAT</td>
<td>International Crop Research Institute for Semi Arid Tropics</td>
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<td>18</td>
<td>IFS</td>
<td>Integrated Farming System</td>
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<tr>
<td>19</td>
<td>ICAR</td>
<td>Indian Council of Agricultural Research</td>
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<tr>
<td>20</td>
<td>IWMP</td>
<td>Integrated Watershed Management Program</td>
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<tr>
<td>21</td>
<td>KK</td>
<td>Karyakarths</td>
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<tr>
<td>22</td>
<td>LCF</td>
<td>Low Carbon Farming</td>
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<tr>
<td>23</td>
<td>LEISA</td>
<td>Low External Input Sustainable Agriculture</td>
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<tr>
<td>24</td>
<td>MFTC</td>
<td>Multiple Fruit Tree Cropping</td>
</tr>
<tr>
<td>25</td>
<td>MGNREGS</td>
<td>Mahatma Gandhi National Rural Employment Guarantee Scheme</td>
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<td>26</td>
<td>MSS</td>
<td>Mandal Sasyamitra Samakhyas</td>
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<tr>
<td>27</td>
<td>NABARD</td>
<td>National Bank of Agriculture and Rural Development</td>
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<td>28</td>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>29</td>
<td>NPM</td>
<td>Non-pesticidal Management</td>
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<td>30</td>
<td>NRM</td>
<td>Natural Resource Management</td>
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<tr>
<td>31</td>
<td>PGS</td>
<td>Participatory Guarantee Systems</td>
</tr>
<tr>
<td>32</td>
<td>PPME</td>
<td>Participatory Planning Monitoring &amp; Evaluation</td>
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<td>33</td>
<td>PME</td>
<td>Planning Monitoring &amp; Evaluation</td>
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<td>34</td>
<td>SA</td>
<td>Sustainable Agriculture</td>
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<tr>
<td>35</td>
<td>SC</td>
<td>Scheduled Caste</td>
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<td>36</td>
<td>SMGs</td>
<td>Sasya Mitra Groups</td>
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<td>37</td>
<td>SRI</td>
<td>System of Rice Intensification</td>
</tr>
<tr>
<td>38</td>
<td>ST</td>
<td>Scheduled Tribe</td>
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<tr>
<td>39</td>
<td>STO</td>
<td>Socio-Technical Organizer</td>
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<tr>
<td>40</td>
<td>UNFCC</td>
<td>United Nations Framework Convention on Climate change</td>
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<tr>
<td>41</td>
<td>LMV</td>
<td>Light Motor Vehicle</td>
</tr>
<tr>
<td>42</td>
<td>HMV</td>
<td>Heavy Motor Vehicle</td>
</tr>
<tr>
<td>43</td>
<td>AEO</td>
<td>Agricultural Extension Officer</td>
</tr>
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<td>44</td>
<td>EDF</td>
<td>Environment Defense Fund</td>
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<tr>
<td>45</td>
<td>VERs</td>
<td>Verified Emission Reductions</td>
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## General Information

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<tr>
<th>Name of organization</th>
<th>ACCION FRATERNA ECOLOGY CENTRE</th>
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<tr>
<td>Physical Address</td>
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<td>Postal Address</td>
<td>Upparapalli road, Bangalore Highway Anantapur – 515 002 A.P. – India</td>
</tr>
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<td>Telephone</td>
<td>+91 8554 244222 / 246884</td>
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<td>Contact Person (with cell phone no.)</td>
<td>Dr. Y.V. Malla Reddy (0)98490 56555</td>
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<td>+91 8554 244990</td>
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<td><a href="mailto:actionf@sancharnet.in">actionf@sancharnet.in</a>; <a href="mailto:action_atp@dataone.in">action_atp@dataone.in</a></td>
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<td>01.09.2012 to 31.03.2013</td>
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<td>Date of the Report</td>
<td>04.07.2013</td>
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<tr>
<td>Author of the Report</td>
<td>Dr. Y.V. Malla Reddy</td>
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1. DIRECTOR’S REPORT

1.1 Introduction:

We have observed that gradually more and more farmers are moving towards Sustainable Agriculture (SA) due to intensified efforts of AF EC in promoting Sustainable Agriculture. During the reporting period, we had demonstrated different crop designs and cropping practices of Sustainable Agriculture suitable for Anantapur District through crop demonstrations in all project villages. Farmers in general showed an inclination towards SA as a result of these demonstrations. SA campaigns had been organized to spread awareness to farmers, farmer’s organizations, civil society organizations and Government functionaries. Altogether our efforts created a rethinking among farmers on Green Revolution model of Agriculture and a more favorable atmosphere for Sustainable Agriculture.

All the GSS Bank Accounts and financial transactions have been streamlined and financial transparency was ensured in the field. The capacity building activities for strengthening SMGs, GSS and MSS have been geared up. Consequently CBO functioning has improved. People participation in meetings and trainings was encouraging. Training programmes had been organized for improving staff motivation, attitude and skills.

To put in a nutshell, we feel that we are moving in right direction with appropriate pace towards achieving the goals of sustainable Agriculture and sustainable rural livelihoods.

1.2 General Situation of Anantapur District

1.2.1 Deficit rainfall cause drought:

During the year 2012-13, the rainfed crops were affected by severe moisture stress due to deficit rainfall in September and October 2012. The crop yields of Groundnut crop went down by as much as 50% to 80% in the project area. This year the Government introduced Weather based Insurance in place of crop insurance for GN crop. However, its actual operational aspects have been unclear and so far no compensation has been paid to the farmers. This has caused a lot of stress to 700,000 rainfed farmers in the district.

Due to deficit rainfall, the groundwater table also began to deplete very fast by January 2013. It has affected the yields in irrigated crops under bore well irrigation. The Groundwater prospects for the summer months (April – June) seemed very bleak!

However a saving grace has been that the farmers who have followed AF’s recommendations and have gone for diversified food crops with millets and pulses under rainfed conditions have benefitted with better yields and saved a lot compared to those who have gone for mono crop of Groundnut. Further they all have food grains at home. The SA practices recommended by AF were also helpful for irrigated farmers as it has reduced their costs in Agriculture.
1.3 Crop demonstrations on Sustainable Agriculture created an impact:

To fight drought and to stabilize incomes in Agriculture, AF had designed 9 diversified crop models (7 rainfed & 2 irrigation) and motivated farmers to experiment them. In this year 6000 farmers had diversified their crops by adopting mixed crop models designed by AF in about 6000 acres (each plot 1 acre). The different crop models adopted by farmers in 2012-13 were 1) Groundnut + Red gram + other pulses, 2) Foxtail millets + Redgram, 3) Jowar + Redgram, 4) Bajra + Redgram, 5) Castor + Redgram, 6) Finger millet + Redgram, 7) SRI, (under irrigation), 8) Paddy with SA practices (under irrigation) and 9) Bengal gram + Coriander. Other pulses like Green gram, Cowpea and Field beans were sown as intercrop in all the above rainfed models. 5 types of vegetables were also grown in these models. AF had some provided inputs like Seed (pulses, millets and vegetables), pheromone traps, Delta traps and Neem cake to farmers who came forward to take up demo plots.

The demo plot farmers have expressed happiness that the cropping models propagated by AF performed better when compared to the mono crop of Groundnut. Of these models, the top three performers in 2012-13 in terms of better yields and higher net incomes are 1) Foxtail millet + Redgram, 2) Castor + Redgram and 3) Groundnut + Redgram + other pulse. The Bio diversity and Biomass content have improved.

Most of the farmers have maintained farmer’s diaries for these demonstration plots. All the diaries were collected by AF and compilation work is in progress. We will understand the efficiency of these crop models clearly only when the data is collected over a period of 5 to 10 years and analyzed.

1.4. The use of output has been improving:

The use of output for local cows, cow urine pits and Jeevamrutham drums has increased from about 40 to 50% to about 60 to 70%. It means more and more farmers are using the material for preparation of bio-fertilisers and bio-pesticides. Preparation and use of Jeevamrutham is a critical element in practicing Sustainable Agriculture. The use of solid jeevamrutham is also observed for rainfed crops like groundnut.

1.5 CBO involvement enhanced at all levels:

A more systematic involvement of Community Based Organizations (CBOs) and women participation was emphasized at every stage of planning and implementation. The SMGs and GSS have been taking active part in in implementation and monitoring of activities at village level. The MSS have been actively taking part in Planning and implementation of events and activities at Mandal level and Area level.
1.6. Changes in Staff:

During the reporting period 12 staff members, mostly new ones (8 men and 4 women) resigned for various reasons and 12 candidates have been newly recruited, of whom there are 9 Women. By the end of reporting period, AF has 36% women staff (25 out of 70 regular staff). In addition to this there are 12 trainee STOs (8 women and 4 men) working in the field.

1.7 Better Project management:

AF-EC has strengthened its systems of internal control, transparency, accountability and monitoring. We had introduced a new Finance Manual for efficient and diligent conduct of all financial transactions. The PME team now has a finance person in order to track, monitor and streamline all financial transactions in the field including at village (GSS) level. The quality of work has improved in the field with rigorous monitoring of output and use of output. We have introduced performance based incentive systems for field staff and karyakartas. More energy and seriousness was observed in our field staff in implementing activities and ensuring quality in the work.

1.6 Update on other Programs of AF

1.6.1 Update on NABARD watersheds

AF-EC is implementing 6 NABARD watersheds in Mallipalli, Garudapuram, Papampalli, Battuvanipalli, Dasampalli and Gubanapalli villages of Kalyandurg Mandal of Anantapur Dist. All the watersheds are under Full Implementation Phase (FIP). A senior staff is coordinating these watersheds and their performance has improved a lot during this reporting period. During the reporting period October 2012 to March 2013, 1,127 ha of land was treated with watershed activities with expenditure of Rs. 3.6 million generating 17,993 man days of labour benefitting 420 farmers. 
(For more details please see the Annexure 3 & 4 on Watershed Development Programme)

1.6.2 Update on IWMP watersheds

AF-EC is also implementing 3 IWMP watershed projects with financial assistance of Government of India. They are Muttala watershed in Atmakur mandal, Bandameedapalli watershed in Rapthad mandal and Kuderu watershed in Kuderu mandal. AF has been rated by the Government as the best performer up till now in implementing these watershed projects at state level. During the reporting period, October 2012 to March 2013, 1,050 ha of land was treated with watershed activities with expenditure of Rs 12 million generating 7,750 man days of labour directly benefitting 282 farmers. 
(For more details please see the Annexure 3 & 4 on Watershed Development Programme)
1.6.3 Update on Low Carbon Farming (LCF) project

1.6.3.1 LCF Research Lab:

AF’s LCF is a research Project to measure Carbon Emission Reductions in Groundnut and Paddy crops following SA practices compared to mainstream Green Revolution Agriculture practices and explore the potential for generating carbon revenues for farmers of SA. It also involves developing methodologies for measuring emission reductions. EDF is funding, guiding and supervising the research Lab and also conducting the research on measuring the Emission Reductions. During 2012-13 Emission Reductions were tested for irrigated Groundnut and paddy crops.

The experiment involved measuring Green house gases like N2O, CO2 and CH4 from three kinds of treatments, SA (Sustainable Agriculture), MA (Mainstream Agriculture) and SAN (Sustainable Agriculture with Nutrient Management). The Package of Practices for SA were prepared by agricultural experts at AF and the MA input parameters were obtained from about 100-150 surveys conducted for a particular season. Three replicates of all the treatment were measured for Green House Gases emitted during various events.

Gas samples were collected from these treatments and subsequent analysis of the samples using a Gas Chromatograph in the GHG lab exclusively set up for carrying out this experiment. The difference between high emissions from MA and comparatively low emission from SA treatments will give the final emission reduction potential in units of tCO2/acre and this can be extrapolated by modeling exercises.

Nitrous oxide emissions from Groundnut crop during Kharif and Rabi were measured. CH4 and N2O emissions were measured from Paddy during Kharif season. The sowing and harvest events were closely monitored and the harvest parameters were deducted by extensive exercises. The numbers obtained from these two seasons are still being processed to get the final emission reduction figures, but the estimates show that the maximum reduction potential for N2O from Groundnut is 0.14tCO2/acre for irrigated groundnut and 0.06Tco2/acre for rainfed. For Paddy it is 0.55tCo2e/acre Nitrous Oxide reduction and 0.15tCO2e/acre Methane reduction. (not to be quoted as the measurement work is in progress and not concluded)

As per initial indications the Emission Reductions in irrigated groundnut were found negligible while there were better Emission Reductions Paddy crop. However, one season is not adequate to conclude the emission reductions. A longitudinal research has to be done for 4 to 5 seasons to see the trends in Emission Reductions. So the research will continue for both crops for more seasons.

1.6.3.2 LCF (Sustainable agriculture) practices by Farmers:

Fair Climate Network (FCN) is exploring the possibilities of generating carbon revenues to LCF farmers based on “guestimates” of Carbon Emission Reductions. It is also communicating with Indian Industry to convince them to go in for purchase of VERs (Verified Emission Reductions). LCF practices are essentially practices of
sustainable Agriculture. So AF EC is promoting these practices among farmers as they are low cost, eco friendly and healthy. We are presently working on developing systems and practices with high rigor to stand for third party verification by a designated authority.

During Rabi 2012, LCF was practiced by 4525 farmers (113% of the planned 4000 farmers) in 3609 ha (144% of the planned 2500 ha). However, they are not yet ready for third party verification as the required rigor in practices, documentation and IT systems are yet to be perfected. AF plans to go for third party verification in 2013 crop season.

1.7 Update on E&E coalition and Food & Water Security Coalition
During the reporting period, AF had actively participated in E&E coalition meetings conducted. The discussions during the meetings were on preparing plans for the coalition, Electoral Reforms, Programmatic Approach and review of programs. The issue of land right and democracy was also discussed. The purpose and objectives of the coalition were reviewed. AF had taken the support of coalition and conducted the gender trainings. AF also participated in FSW coalition meetings and followed up the field activities.

1.8. Important Events / Trainings
During the reporting period, AF had organized some trainings and workshops which were aimed at improving the motivation, skills, attitude and overall capacities of its staff. The trainings and workshops were:
   a) Gender training to core team (see Annexure 1 for detailed report)
   b) Organization Development Program with senior staff (see Annexure 2)
   c) Basic yoga course to all staff
   d) Entrepreneurship training to rural youth by efarm, Chennai

1.9. Awards & Recognition
“International Status Award for Individual Contribution for International Integration” was awarded to Dr. Malla Reddy by Global Achievers Foundation. The award was presented to Dr. Y. V. Malla Reddy by Deputy Prime Minister of Thailand Mr. Korn Dabarnasi, at Bangkok, hotel Holiday Inn on 4th January, 2013. The Award carried a memento and a certificate.

After the award presentation Dr Malla Reddy had a personal discussions with Mr Korn Dabaransi. They discussed at length about poverty and underdevelopment affecting India, Thailand and other Asian countries; and the role of international cooperation in addressing poverty and underdevelopment across Asia. Both Dr. Malla Reddy and Mr. Dabarnasi felt that educated and capable human resources only can contribute to national growth and equitable development.
1.10 The challenges ahead

a) Our grass root staffs now are mostly young and inexperienced and their turnover is high. So, we need to create favorable conditions and opportunities for them to continue in service. The challenges at present are i) retaining and capacitating the field staff ii) to train and orient the karyakartas (*village volunteers*) to be agents of change, iii) to capacitate and strengthen the SMGs and their federations and iv) to stabilize the processes of PME in the field.

b) The CBOs are beginning to take responsibilities. They need to be strengthened with knowledge, skills and appropriate attitudes to be able to play a meaningful role in achieving the goals. So special attention need to be given to build the capacities of CBOs at various levels and also build appropriate systems and practices for their effectiveness.

c) The groundwater situation is worsening in the district due to inadequate rains coupled with over exploitation. So there is crisis both in irrigated and rainfed farming. There is need to adapt AF’s activities and implementation processes to match the crisis in the field. There are both challenges and opportunities in front of us.

d) We also have to look at any emerging Carbon revenue opportunities in Biogas CDM project and Low Carbon Farming Projects.
2. OUTCOME & IMPACT

PROJECT GOAL:
To enhance the quality of life of 62,000 resource poor farmer and farm labor families with dignity, gender equality and social equity.

2.1 PROJECT OBJECTIVE:
To increase and stabilise the income levels of the target families and improve their access to basic needs like Employment and Food & Nutritional Security by promoting; (a) Sustainable Agriculture, (b) Natural Resource Management, (c) Alternate Livelihoods for Rural Women & youth d) Public opinion building and Lobbying with Government for Pro- LEISA policies.

2.2 Objectives of Project components (specific objectives) and their indicators:

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>INDICATORS</th>
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<tbody>
<tr>
<td>1) To reduce the cost of cultivation and mitigate drought (by diversified cropping) in 11200 ha of land belonging to 5600 farmer families through SA practices by 2015.</td>
<td>1.1 35% of 16000 farmer families practicing atleast 3 of 5 main sustainable agriculture practices. 1.2 856 SMGs of 21400 farmers and farm workers and their federations work in a collective manner in order to adopt sustainable agriculture.</td>
</tr>
<tr>
<td>2) 15000 farmers introduce Low Carbon Farming in their 12000 ha of land in order to gain access to the Indian CO2 market by 2015.</td>
<td>2.1 The methods of low Carbon Farming is introduced in 12000 ha of land and is validated and certified for the Indian Co2 market. 2.2 The certificates are offered at the Indian carbon market.</td>
</tr>
<tr>
<td>3) The livelihood of approx. 3200 women and youth from the target families is diversified through alternate off farm/ nonfarm livelihoods by 2015.</td>
<td>3.1 Approx. 3200 women and youth are trained to contribute additional livelihood to the family with skill based employment.</td>
</tr>
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2.3 Achievement of Project Component Objectives:

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicator (or) Desired End Result by 2015</th>
<th>Achieved during October 2012 to March 2013</th>
<th>Achieved during April 2012 to March 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) To reduce the cost of cultivation and mitigate drought (by diversified cropping) in 11200 ha of land belonging to 5600 farmer families through SA practices by 2015.</td>
<td>1.1 35% of 16000 farmer families practicing at least 3 of 5 main sustainable agriculture practices.</td>
<td>Of the 16000 small and marginal farmer families enrolled into AF’s SA program: During the reporting period October 2012 to</td>
<td>Of the 16000 small and marginal farmer families enrolled into AF’s SA program: During the year April 2012 to March 2013:</td>
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diversified cropping) in 11200 ha of land belonging to 5600 farmer families through SA practices by 2015.

<table>
<thead>
<tr>
<th>5 main sustainable agriculture practices.</th>
<th>March 2013:</th>
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<tr>
<td></td>
<td>975 families (6%) have used Pest traps in their crops covering 395 ha.</td>
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<td>1000 families (6%) have applied Bio-pesticides to their crops covering 405 ha.</td>
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<td>900 families (6%) have used Bio-fertilizers like Jeevamritam to their crops covering 365 ha.</td>
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<td>31 families have practiced SRI in paddy covering 13 ha.</td>
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**Totally in FY April 2012 to March 2013, 2880 families (18% of the enrolled farmer families) have adopted in 1506 ha of land (13% of 11,200 ha) at least 3 of 5 LEISA practices.**

<table>
<thead>
<tr>
<th>1.2) 856 SMGs of 21,400 farmers and farm workers and their federations work in a collective manner in order to adopt sustainable agriculture.</th>
<th>During the reporting period October 2012 to March 2013:</th>
</tr>
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<tbody>
<tr>
<td>81 SMG groups were reorganized. About 80 SMGs (10%) and 800 (4%) families are practicing mutual cooperation in farming activities (eg: exchange of labour, implements…)</td>
<td>Out of 856 SMGs formed 820 (96%) groups were reorganized. Reorganizing the SMGs was an opportunity to strengthen the leadership in SMGs.</td>
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<th>During April 2012 to March 2013:</th>
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<td>Out of 856 SMGs formed 820 (96%) groups were reorganized. Reorganizing the SMGs was an opportunity to strengthen the leadership in SMGs.</td>
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<tr>
<th>2) 15000 farmers introduce Low Carbon Farming in their 12000 ha of land in order to gain access to the Indian CO2 market by 2015.</th>
<th>During the reporting period October 2012 to March 2013:</th>
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<tr>
<td>LCF was practiced by 4525 farmers (113% of the planned 4000 farmers) in 3609 ha (144% of the planned 2500 ha).</td>
<td>In both Kharif and Rabi season together LCF was attempted by 7008 farmers (109% of the planned 6420 farmers) in 4621 ha (115% of the planned 4000 ha).</td>
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<table>
<thead>
<tr>
<th>2.1) The method of low Carbon Farming is introduced in 12000 ha of land and is validated and certified for the Indian CO2 market.</th>
<th>2.2) The certificates are offered at the Indian carbon market.</th>
</tr>
</thead>
<tbody>
<tr>
<td>This activity has not yet started. This can be done only after the carbon revenue viability of LCF is established.</td>
<td>This activity has not yet started. This can be done only after the carbon revenue viability of LCF is established.</td>
</tr>
</tbody>
</table>
| 3) | The livelihood of approx. 3200 women and youth from the target families is diversified through alternate off farm/nonfarm livelihoods by 2015. | 3.1) Approx. 3200 women and youth are trained to contribute additional livelihood to the family with skill based employment. | During October 2012 to March 2013 Youth (Girls & Boys) from 244 families (60% of the planned 400) have acquired skills to diversify their occupation. Of them
- 160 Girls have been trained in garment making and
- 77 Boys trained in LMV Driving and
- 7 boys trained in HMV driving.
AF is planning to train more youth and link them with industry in coming years. | During April 2012 to March 2013 Youth (Girls & Boys) from 518 families (74% of the planned 700) have acquired skills to employ or self employ and diversify their family livelihood. Of them
- 284 Girls have been trained in garment making
- 204 Boys trained in LMV Driving
- 30 boys trained in HMV driving. |

2.4. What other observations did you make? Please mention any thing that may be enlightening for the progress of the project, provide case stories if any in the annexure.

Some important observations:
- Farmer’s confidence in SA increased: Progressive SA farmers are benefitting from SA practices propagated by AF EC. (Please see the case study of Ramanjineyulu).
- Food and Nutritional Security: More Millets and Pulses consumed because of millet and pulses production in village (See case study of M. Obulesu, Gotkur).
- Kitchen Garden: Kitchen garden help in providing Nutritional Security. (See case study of Kirsti Bai of Yalagalavanka)
- Biodiversity with the introduction of food crops, the birds came back to the fields which were not seen otherwise in the past years.
- The use of output for local cows, cow urine pits and Jeevamrutham drums has increased from about 50% to 70%. It means more and more farmers are using the material for preparation of bio-fertilisers and bio-pesticides.
- A more systematic involvement of Community Based Organizations (CBOs) and women participation is found in planning and implementation. The SMGs and GSS have been taking active part in in implementation and monitoring of activities at village level. The MSS have been actively taking part in Planning and implementation of events and activities at Mandal level and Area level.

All these observations indicate a positive movement towards the achievement of AF’s development goal (enhanced incomes and food & nutritional security) considerably.
2.5 In case that you observed any Negative Outcome please describe.

No Negative outcome is observed.

2.6. Could any impact (Positive or Negative) be observed in the wider context of the project that might be related to the project interventions? Do those observed facts contribute to achieving the development goal?

_A slow shift in cropping pattern is observed:_ The sowing area of mono crop of Groundnut in the project area is showing a declining trend. It is due to intensive campaigning for diversified food crops in place of mono crop of Groundnut and also due to increasing costs of cultivation and continuous crop failure. Groundnut Crop is replaced largely by Castor, Redgram and to some extent by millets and other pulses. The dry land horticulture has also picked up in the district, with support of MGNREGA. Thus mono cropping of groundnut is changing though slowly (for better) towards a more diversified cropping including tree crops which AF Ecology Centre has been propagating and advocating vigorously for many years.

AF’s program to strengthen the farming and small farmers with LEISA practices and through mutual cooperation is becoming more and more relevant in changing situations.

2.7. Which methods did you use for assessing Outcome and Impact?

The outcome was measured using participatory methodology with the Indicators set against Objectives and Impact Chain involving the participants and their groups (SMGs). The participatory tools like FGDs required for assessment of outputs, use of output and outcomes were used, in order to assess the trends and patterns. The use of output and outcome of the activities was measured every 3 months or at the end of every crop season as the case may be. These outcomes were assessed to understand the intended and unintended effects of project intervention. The Information was also collected from village level records maintained in each of the 214 villages by KKs like Village Activity Registers, Minutes of Meetings, Monthly progress reports etc. Information on Outcomes was also collected from other means like Random Physical Verification, Interviews with some specific farmer & farm labor families etc. The findings were triangulated with field verification and monitoring reports of STOs, AEOs, subject matter specialists and PME team members. The Action learning cycle was used to reflect, learn and put the learning’s back into the Action plan.
3. ACTIVITIES:

Following are the main activities implemented by AF during October 2012 to March 2013:

3.1 AWARENESS ON SUSTAINABLE AGRICULTURE AND FACILITATION OF CBOS:

Promoting Sustainable Agriculture is AF’s core program. AF is not only promoting LEISA practices but also developing suitable farming systems for the agro climatic and socio-economic conditions of Anantapur District. AF is intensely spreading awareness and building public opinion on sustainable Agriculture through Campaigns, Trainings, CBO meetings and Exposure visits. AF is also working on creating awareness on Climate Change and its consequences on the agriculture and livelihoods; and the ways for mitigation and adaptation to Climate Change.

3.1.1 Campaigns on; (a) Sustainable Agriculture, (b) Gender and (c) Adaptation to Climate Change

These Campaigns were organized at different levels like village level, area level and project level. The farmers, the agriculture scientists, the activists, NGOs, Government agencies, media and elected representatives were brought together in these campaigns. The Farmer groups (GSS, SMGs) and Federations (MSSs) had played an active role in organizing these campaigns. In these campaigns awareness was created on; (a) various SA practices including Crop Diversification with millets, pulses, and multiple tree crops, (b) Integrating cattle and livestock into the farming system and (c) Adaptation measures to cope with effects of climate change like changing rainfall patterns etc. The practicing farmers shared their experiences in SA with other farmers. Good cropping practices, Bio-fertilizers, Bio-pesticides were demonstrated to the farmers in these campaigns.

- **During the reporting period October 2012 to March 2013,** 210 Village level Campaigns (95% of the planned 222) were conducted. 10,208 women farmers (95% of the planned 10,700) had participated in the campaigns, of whom 2,800 (27%) were from SC & ST families. 11590 men farmers (108% of the planned 10,700) had participated of whom 3,840 (33%) were from SC & ST families.

- **During April 2012 to March 2013,** 401 Village level Campaigns (92% of the planned 436) were conducted. 21,560 women farmers (100 % of the planned 21,400) had participated in the campaigns, of whom 6,200 (29%) were from SC & ST families. 11590 women farmers (108% of the planned 10,700) had participated of whom 3,840 (33%) were from SC & ST families.
A Note on Exposure visits: AF Ecology Centre had organized 4 exposure visits during the reporting period October 2012 to March 2013. Two visits were organized to Cooperative Development Foundation, Warangal and the other two to a progressive farmer Veerabhadrappa’s farmland in BG Kere. About 60 farmers had participated in each visit, so about 240 farmers had participated in 4 exposure visits. Majority of the participants (about 150) were women.

In CDF visit, the farmers had practically understood the importance and benefits of mutual cooperation and Cooperative Organizations. All the participants had understood the benefits and possibilities under 1995 MACS ACT. The participants from Cholasamudram, Kalagallu, Madigubba and Kurlapalli after the exposure visit have started thrift groups in their villages and saved Rs 35768/-. It was direct impact of the exposure visit.

In exposure visit to Veerabhadrappa farm at BG Kere, farmers have understood importance and benefits of tree crops, biodiversity and water conservation. The farmers were inspired with scientific approach and crop planning of Mr. Veerabhdraiah.

The exposure visits also helped to improve personal relations, communication among farmers and enhanced their enthusiasm.

3.1.2 Trainings on (a) Sustainable Agriculture, (b) Gender and (c) Group dynamics & leadership development

The trainings for SMG members were organised at cluster level, wherein gender issues like cultural division of labour & sharing of work load by men, prevention of domestic violence, girl child education, economic freedom to women, household food security, nutritional security at home, participation for women in decision making in family matters, cropping choices, livelihoods, women and child health etc were discussed and dealt with. Also concepts and experiential learning in Group Dynamics such as participation, conflict resolution, cooperation and leadership processes were imparted in these trainings.

At village level, Farmer Field Schools (FFS) were conducted during the cropping season. FFS is an experiential based learning where farmers “learn by doing and observing.” The main objective of FFS is to empower the farmers to manage their crops effectively without agro chemicals by adopting Integrated Crop Management practices. FFS is conducted from sowing to harvest of the crop, so that the farmers can observe and analyze the dynamics of crop ecology across the season. STOs and KKs facilitate the FFS sessions. The topics dealt in FFS sessions are seed treatment, sowing methods, Jeevanrutham preparation and application, bio-pest and disease management, benefits of FYM, multiple crop cultivation & crop rotation.
Organizing FFS and PGS: Generally an FFS session started at 7 am in a selected plot of a farmer in each village. The FFS group of about 30 farmers attended the sessions. The farmers were further formed into small groups according to their sown crop. After a recap session the small groups went to their respective selected crop plots, performed Agro Eco System Analysis (AESA) and noted the findings. After AESA all the groups came together and presented their observations in the large group. The decisions for follow up actions were taken in the group.

Next the groups reviewed and discussed PGS practices and ensured that all the farmers followed the practices related to Sustainable Agriculture. Each PGS Group farmer had agreed and pledged to follow a calendar of operations/practices of Sustainable Agriculture for the crops sown. The PGS group reviewed whether each farmer had followed the practices as per the calendar or not. If any farmer had not followed the protocols agreed appropriate action was taken by the group.

During the reporting period October 2012 to March 2013,
- 36 cluster level trainings (120% out of planned 30 trainings) were organized. 1410 GSS leaders and SMG members had attended these trainings. Out of them 775 (55%) were women. Of the total participants 437 members (31%) were from SC/ST communities.
- 1901 Farmer Field Schools (111% of the planned 1712) were conducted in 214 villages. 5420 farmers (84% of the planned 6420) had attended these FFS sessions, out of them 3252 (60%) were women participants and 1680 (31%) farmers were from SC/ST communities.

During April 2012 to March 2013,
- 55 cluster level trainings (92% out of planned 60 trainings) were organized. 1680 GSS leaders and SMG members had attended these trainings. Out of them 855 (51%) were women. Of the total participants 640 members (38%) were from SC/ST communities.
- 3,026 Farmer Field Schools and PGS group meetings (88% of the planned 3424) were conducted in 214 villages. 5640 farmers (88% of the planned 6420) had attended these FFS and PGS sessions, out of them 3384 (60%) were women participants and 1820 (32%) farmers were from SC/ST communities.

3.1.3 CBO Meetings (SMG, GSS, MSS)
There are 4 SMGs and 1 GSS functioning in each of 214 project villages. In 16 Watershed Villages, Village Watershed Development Committees (WDCs) and User groups (UGs) are functioning. Each SMG meets once a month and every GSS meet twice a month. The Karyakartas and the STOs facilitate the regular meetings of SMGs and GSSs. The topics discussed in the meetings were Sustainable Agriculture, Planning and implementation of various project activities and importance of mutual cooperation. Selection of deserving and eligible beneficiaries for incentive based
activities considering Gender & Social equity was a key responsibility of the SMGs and GSS. The resource poor, small and marginal farmers, willing to practice LEISA/NPM practices were given preference in selection of beneficiaries. Further the management of the common equipment and services like sprayers, Sprinklers, NPM Shops etc are also the responsibility of GSS in each village.

Sharing sprinkler sets – mutual cooperation with support of GSS:
Ipperu village of kuderu mandal is situated 25 km’s away from Anantapuram town. AF is promoting Sustainable Agriculture in this village since 2009 with 4 SMG groups of 25 members each. AF had supplied 3 sets of Sprinklers to GSS (Grama Sasyamithra Samakya) in 2012 in order to help farmers to support each other and provide critical irrigation to rainfed crops. The responsibility of maintaining the sprinkler sets was given to Karyakartha (village volunteer) and GSS was monitoring them. As per the guidelines prepared by GSS with support of AF EC, one sprinkler set has been hired by 3 farmers i.e., 2 Irrigated farmers and 1 Rainfed farmer. The 2 Irrigated farmers provided irrigation to the Rainfed farmer at critical stage of the crop. Because of two critical irrigations the rainfed farmers also got better yields. As a result all the 3 farmers harvested good crop yields in 2012. In this way, 9 farmers had benefitted using 3 sets of sprinklers during last Kharif and Rabi seasons in Ipperu village. The Hire charges of sprinkler set decided by GSS were Rs 500 per farmer for every crop season. This amount is shared equally by the GSS and KK.

The GSS had played key role in selection of deserving farmers for sharing sprinkler sets. It has also ensured proper use and maintenance of sprinkler sets, timely collection of hire charges and depositing it in GSS bank account. The GSS also gave guidance to farmers in selection of crops and maintenance of sprinkler sets. The GSS also faced some opposition from few farmers who did not get opportunity to use sprinkler sets. The total hire charges collected in 2012 was Rs 7000/-; GSS has earned Rs.3,750/- and KK earned Rs.3,750/- as their share. The benefitted farmers said “we are mutually supporting each other and all of us are benefitted as our yields and incomes have increased.”

There are 8 MSSs functioning in 8 mandals in the project area. The MSS meetings were facilitated at Mandal level by Area Team Leaders (ATLs) and Agriculture Extension Officers (AEOs). The MSS members have been playing an important role particularly in organizing mandal level awareness campaigns such as International Women days, Drought and Desertification Days and Ecology days. These large campaigns were attended by about 600 to 1200 farmers, civil society groups, writers, artists, Govt functionaries etc. They played an important role in mobilizing public opinion on issues concerning agriculture, environment, gender etc.

Role of MSS in organizing International Women Day :
In Dharmavarm area 11 leaders from Dharmavarm mandal and 9 leaders from Rapthad mandal had formed a committee (20 members) and took responsibility of organizing International Women’s Day on March 8th 2013. Ms. Anusuyamma of Darsinamala was elected as convener of the committee. The committee had organized the Women’s Day event successfully by sharing the responsibilities among themselves. The committee had met several times before event and planned and organized the program meticulously. They have taken the support of AF staff wherever required. All the works like inviting guests, food arrangements, venue and conducting the actual programme were done by MSS leaders.
The committee also reviewed the programme in the following MSS meeting.

During the reporting period October 2012 to March 2013,
- 4288 SMG meetings (125% of the planned 3424) were conducted for 856 SMGS in 214 villages.
- 2734 GSS meetings (106% of planned 2568) were conducted in 214 villages.
- 49 MSS meetings (102% of the planned 48) were conducted for 8 MSS in 8 mandals.
- 24 KK (Karyakarta) review meetings (92% of the planned 26) were conducted.
- 3 Campaigns on Women’s day were organized in 3 different areas Dharmavaram, Kalyandurg and Kundurpi.

During the year April 2012 to March 2013,
- 8054 SMG meetings (78% of the planned 10272) were conducted for 856 SMGS in 214 villages.
- 4622 GSS meetings (90% of planned 5136) were conducted in 214 villages.
- 92 MSS meetings (96% of the planned 96) were conducted for 8 MSS in 8 mandals.
- 42 KK (Karyakarta) review meetings (88% of the planned 48) were conducted.
- Combat Drought & Desertification day and 3 women day campaigns were organized.

3.2 CROP DEMONSTRATIONS ON SA PRACTICES IN ANNUAL AND TREE CROPS:
AF is educating and advocating Sustainable Agriculture practices to all the farmers in the project area in order to stabilize farm returns, create food and livelihood security and to improve soil health. As part of this effort, AF has developed 10 rainfed seasonal cropping models considering different soils and different crop combinations suitable for Anantapur agro climate and for rainfed lands. The crop management guidelines regarding the management of cropping models, farming systems and different SA practices were prepared, printed and circulated widely among the target group farmers. The models incorporated were ‘multiple & diversified cropping systems of food crops’ as alternative to or as crop rotation to groundnut mono cropping. The crops advocated were inter crops of pulses and millets like red gram, pearl millet, sorghum, foxtail millet, field beans, cow pea, castor, etc,

These crop demonstrations also included the demonstration of bio fertilizers and bio pesticides integrated into the same crop demonstrations. The important practices included Jeevamritam application, use of various herbal pest control solutions, Pheromone traps, border crops, trap crops etc for pest management. Agro chemicals are totally avoided in these demonstrations.
Women were encouraged to actively participate and play an important role in deciding the crop models suitable for them as they tend to prefer food crops compared to men who tend to prefer non food cash crops.

**Seed Banks:** Seed Banks were managed in 127 villages by the respective GSSs. These Seed Banks played an important role in procuring quality millet and pulses seed and distribution to farmers to extensively promote above said food crops.

**Functioning of Seed Bank in Muddalapuram village, Kuderu Mandal:**

In Muddalapuram Village of Kuderu Mandal, Seed Bank is managed by Grama Sasyamitra Samakhya. During the 2012, the Pulses, Millets, Vegetables seed was purchased and supplied to 20 farmers through the seed bank. The seed requirement was assessed well before the sowing time considering the needs of farmers from all the 4 SMG groups. Multiple cropping was encouraged. The terms and procedures of seed purchase, distribution and repayment were formulated in GSS meetings. Accordingly a seed purchase committee was formed to purchase seed for the year. GSS leader Ms Laxmi was the convenor of the purchase committee. GSS approved to withdraw required amount from the Bank account. The Seed was purchased at Anantapuram and distributed to farmers based on the indent. The repayment from the farmers was collected and deposited back in to the bank account. All the processes were recorded in the GSS Minutes. The committee has purchased the seed as given below:

<table>
<thead>
<tr>
<th>Seed type</th>
<th>Qty in Kgs</th>
<th>Cost/Kg</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jowar</td>
<td>30</td>
<td>28/-</td>
<td>840</td>
</tr>
<tr>
<td>Red Gram</td>
<td>50</td>
<td>58/-</td>
<td>2900</td>
</tr>
<tr>
<td>Cow pea</td>
<td>20</td>
<td>60/-</td>
<td>1200</td>
</tr>
<tr>
<td>Green Gram</td>
<td>30</td>
<td>70/-</td>
<td>2100</td>
</tr>
<tr>
<td>Black Gram</td>
<td>20</td>
<td>60/-</td>
<td>1200</td>
</tr>
<tr>
<td>Bajra</td>
<td>20</td>
<td>34/-</td>
<td>680</td>
</tr>
<tr>
<td>Vegetables - 5 types</td>
<td>20 sets</td>
<td>80/-</td>
<td>1600</td>
</tr>
</tbody>
</table>

**TOTAL**

Farmers felt very happy that they had saved at least Rs 200/- per person in the form of bus fares, transportation and miscellaneous expenses. They also saved one day labor. Purchasing through seed bank not only ensured good quality seed but also saved them about 8% amount because of collective bargaining. The seeds are quite useful for farmers.

**During the cropping season (2012),**

- Annual Demonstration plots were taken up on a big scale with 6000 farmers in 6000 acres (1 acre plot each). Only some additional SA Inputs (*legume and vegetable seeds, Pheromone traps, Delta traps, white and yellow boards and 30 kgs of Neem cake*) were supplied and the other costs such as ploughing, sowing, weeding, harvesting etc were borne by the farmers themselves. These demonstrations created a lot of curiosity and a continued debate on crops and SA practices in all the villages.
3.2.1 Non-Pesticide Management (NPM)

The purpose of Non Pesticide Management (NPM) is to dispense with agro-chemicals which are expensive and hazardous and promote cost effective and eco-friendly practices of Pest management. NPM is a set of activities to control pests and diseases using locally available resources which include both mechanical pest control and bio pest control. AF is intensively promoting NPM methods to reduce the cost of pest management and to grow healthy crops, without using agro-chemicals.

AF has helped GSSs in setting up 26 NPM shops in 26 project villages to provide low cost local made NPM inputs to farmers. These shops are managed by identified entrepreneurial rural youth trained in Sustainable Agriculture and as well in preparation of bio-manures and bio-pesticides with locally available resources. Concerned GSSs had extended financial assistance to these youth to set up the shops. The Pest traps, Bio-pesticides, Herbal pest repellents and Jeevamritham are available in NPM shops for sale. During the reporting period all the NPM shops were functional and provided necessary inputs to the farmers. One Sprayer set each was supplied to GSS in 214 villages to enable farmers to use them and spray Bio-pesticides at nominal rent.

NPM SHOP in Cholasamudram Village of Kuderu Mandal:

NPM is a set of activities to control pests and diseases using locally available resources which include both mechanical pest control and bio pest control. As number of farmers adopting SA practices was increasing in Cholasamudram village of Kuderu mandal, AF EC had motivated GSS leaders of the village to set up NPM shop to provide low cost local made NPM inputs to the farmers. The GSS members discussed about NPM shop in all the SMG meetings and felt that there is need in the village. GSS took the responsibility of identifying the suitable person and selected Mr. Veeranjineyulu, a young man trained in Sustainable Agriculture and extended him a loan of Rs 10,000/- to set up the NPM shop.

Mr Veeranjineyulu set up the shop at his house and prepared bio-manures and bio-pesticides with locally available resources. He kept Pest traps, Bio-pesticides, Herbal pest repellents and Jeevamritham in NPM shops for sale. The products were prepared based on the indents placed by SMG leaders and farmers. Veeranjineyulu prepared various herbal pest repellant like Brahamastram, Neemastram, Agnastram, Lanterna kashayam, 5% Neem solution and Bio agent like Tricoderma viridi. He sold Bio-fertilizers like solid Jeevamrutham, liquid jeevamrutham, Rhizobium and Pseudomonos. He also supplied Phermone traps, Delta traps, White & yellow boards and Azolla to farmers based on the request. Brahamastram, Nemastram, Agnastram, Ghana Jeevamrutham, Beejamrutham were sold well during the season. He earned an average of Rs.8000 per month during the crop season. He demonstrated the preparation and use of his products by charging Rs 50/- per demo.

Mr.Veeranjineyulu repaid the entire loan amount of Rs 10,000/- within two seasons. He is providing the services as resource person and is available to farmers all the time. NPM shop was helpful to farmers in experimenting and shifting to SA practices in Cholasamudram Village.
Installation of Pest traps (Pheromone traps & Color boards).
Pheromone Traps and Color Boards were used to monitor/control the incidence of pests and to trap them mechanically before they are multiplied.

During October 2012 to March 2013, 975 farmers (46% of the planned 2140) installed pheromone traps, white & yellow boards, in their 441 ha of farm lands (51% of planned 867). Of them 205 farmers (21% of the farmers covered) were from SC & ST families with a coverage of 92 ha (21% of the area covered).

During April 2012 to March 2013, 3022 farmers (47% of the planned 6,420) installed pheromone traps, white & yellow boards, in their 1270 ha of farm lands (49% of planned 2,600). Of them 635 farmers (21% of the farmers covered) were from SC & ST families with a coverage of 268 ha (21% of the area covered). Lower achievement was due to lack of timely rains during the kharif sowing season which resulted in lower sowing.

Application of Bio-pesticides:
Preparation of Bio-pesticides and pest repellants with locally available herbs, spices and cow urine were demonstrated to the farmers. The prevention of pest & disease incidence through usage of bio-pesticides like decoctions was demonstrated. 214 power sprayers have been supplied to 214 GSS in 214 villages. They were rented to farmer for spraying liquid fertilizers and pesticides.

During the reporting period October 2012 to March 2013, 1000 farmers (47% of the planned 2140) have applied various decoctions as bio-pesticides in their 410 ha of farm lands (47% of the planned 867). Of them 320 farmers (32% of the farmers covered) were from SC & ST families with a coverage of 132 ha (32% of the area covered).

During the reporting period April 2012 to March 2013, 2,880 farmers (45% of the planned 6,420) have applied various decoctions as bio-pesticides in their 1171 ha of farm lands (45% of the planned 2,600). Of them 895 farmers (31% of the farmers covered) are from SC & ST families with a coverage of 375 ha (32% of the area covered). Lower achievement was due to lack of timely rains during the sowing season.

3.2.2 Promotion of Bio-fertilizers
AF is promoting the use of FYM and Bio-fertilizers (mainly Jeevamritham) instead of chemical fertilizers. Jeevamritham is an indigenous, economical, environment-friendly and highly effective microbial concentrate bio-fertilizer. Demonstrations of preparation and use of Jeevamritham are conducted in SA campaigns and FFS sessions. AF is encouraging farmers to prepare and apply Jeevamrutham to their farm lands at their own cost.

During the reporting period October 2012 to March 2013, 900 farmers (42% of the planned 2140) applied Jeevamritam and FYM to their 423 ha of farm lands (49% of
the planned 867). Of them 252 farmers (28% of the farmers covered) were from SC & ST families with a coverage of 119 ha (28% of the area covered).

**During April 2012 to March 2013**, 3115 farmers (49% of the planned 6,420) applied Jeevamritam and FYM to their 1,320 ha of farm lands (51% of the planned 2,600). Of them 872 farmers (28% of the farmers covered) were from SC & ST families with a coverage of 370 ha (28% of the area covered). The Low level of achievement was due to lower sowings due to lack of timely rains during the sowing season.

3.2.3 Promotion of Rainfed Farmer Cooperatives
AF – EC is planning to establish Rainfed Farmer Cooperatives in 4 villages. It is exploring various models of sustainable cooperatives. The ground work has started in villages Palabhavi and Sirimaggpinapalli. We are looking for an experienced staff member to plan and implement this important activity. It will be followed up in 2013-14.

3.2.4 Tree Cropping Models in wastelands under Rainfed conditions
AF firmly believes that tree crops offer a better option for combating droughts and a better livelihood security to rain fed farmers of Anantapur. So it is campaigning for Tree Crops extensively and advocating that every rainfed farmer should have at least 30% of their land under various economically viable tree crops as safety net against the annual crop failure (droughts). AF has designed some tree-based farming models suitable for Anantapur agro climate and socio economic conditions, that are drought resistant, eco-friendly and remunerative. They are; (a) Integrated Farming System (IFS), (b) Bio-Intensive Farming System in Rain fed Agriculture (BIFSRA), (c) Multiple Fruit Tree Cropping (MFTC) and d) Multiple Tree Crops in wastelands.

a) **Integrated Farming System (IFS) for Rainfed Lands is a** tree crop model in which annual crops, Fruit trees, Biomass trees, Fodder trees and small unit of dairy animals or small ruminants would be integrated in one ha. of rainfed land.

b) **Bio-intensive Farming System in Rain fed Areas (BIFSRA) is a model which aims** at producing adequate bio-mass on farm for mulching the land particularly during summer months, to avoid exposure of soil to sun, rain and wind. This improves the soil organic matter (SOM) and soil biotic life and minimizes the need of any additional manure. It can hold the moisture for longer periods and crop is less stressed for moisture under rain fed conditions.

c) **Multiple Fruit Tree Cropping (MFTC) plot** has multiple rainfed Fruit Tree Crops, like Mango, Sapota, Amla, Custard Apple etc. and a lot of bio-mass yielding trees in plots of a size of one acre to one and half acre. This model is expected to provide continuous income all through the year, perennially, and add tree diversity to the agro-ecology.

d) **Multiple Tree Crops in wastelands:** Tree crops are designed for so called wastelands in order to make the ‘Wasted Land’ into an economically and ecologically productive one.
Due to strong lobby from AF - EC, the Government is now supporting Fruit tree crops extensively through MGNREGS. But the wastelands of the farmers are still neglected. So AF has developed a new tree cropping model suitable for wastelands with a mixture of fruit bearing, fodder, fiber and biomass yielding trees which will grow well in rainfed conditions and as well in problem soils like saline soils, rocky soils etc. This turns wastelands into green and productive lands and enhances farmer incomes and livelihood security.

AF is now following a 3 pronged approach to promote tree crops in Rainfed lands.

a) Extending support for pot-watering and gap filling for existing and eligible IFS, BIFSRA and MFTC plots to ensure their survival. (The pot watering support is needed for the first 3 to 4 years)
b) Setting up new IFS and BIFSRA plots.
c) Establishing Multi Tree Crop model plots in waste lands.

During this reporting period, October 2012 to March 2013, only the planning and follow up work was undertaken in this activity.

During April 2012 to March 2013:

a) Pot-watering support was extended for 6 IFS plots, 4 BIFSRA plots and 35 MFTC plots.
b) Process of setting up new IFS & BIFSRA plots (30 IFS and 30 BIFSRA plots) is in progress.
c) Multi Tree crop plots in 18 ha of waste lands belonging to 10 SC community farmers were taken up in Malayanur village of Kundurpi area.

3.2.5 Home based activities (Kitchen Gardens and Backyard Horticulture)

AF is promoting home based activities such as Kitchen Gardens and Backyard Horticulture to add to household food and nutritional security. During the reporting period, seed was provided for existing Kitchen Gardens and the follow up work was done. The new Kitchen Gardens were not taken up due to deficit rainfall and severe shortage of water.

3.3 ADAPTION TO CLIMATE CHANGE:

LCF Research Lab:

AF’s LCF project is an experiment to measure Carbon Emission Reductions in Groundnut and Paddy crops. The experiment involved measuring Green house gases like N₂O, CO₂ and CH₄ from three kinds of treatments, SA (Sustainable Agriculture), MA (Mainstream Agriculture) and SAN (Sustainable Agriculture with Nutrient Management). The Package of Practices for SA were prepared by agricultural experts at AF and the MA input parameters were obtained from about 100-150 surveys conducted for a particular season. Three replicates of all the treatment were measured for Green House Gases emitted during various events. Gas samples were collected from these treatments and subsequent analysis of the samples using a Gas Chromatograph in the GHG lab exclusively set up for carrying out this experiment. The difference between high emissions from MA and comparatively low emission from SA treatments will give the final emission
reduction potential in units of tCO2/acre and this can be extrapolated by modeling exercises.

Nitrous oxide emissions from Groundnut crop during Kharif and Rabi were measured. CH4 and N2O emissions were measured from Paddy during Kharif season. The sowing and harvest events were closely monitored and the harvest parameters were deducted by extensive exercises. The numbers obtained from these two seasons are still being processed to get the final emission reduction figures, but initial estimates show that the maximum reduction potential for N2O from Groundnut is 0.14tCO2/acre for irrigated groundnut and 0.06TCo2/acre for rainfed Groundnut crop. For Paddy crop it is 0.55tCo2e/acre Nitrous Oxide reduction and 0.15tCo2e/acre Methane reduction. A longitudinal research has to be done for 4 to 5 seasons to see the trends in Emission Reductions. The research will continue for both crops for more seasons.

**LCF (Sustainable agriculture) practices by Farmers:**

- **During the reporting period, Rabi 2012**, LCF was practiced by 4525 farmers (113% of the planned 4000 farmers) in 3609 ha (144% of the planned 2500 ha).
- **During April 2012 to March 2013**, In both Kharif and Rabi season together LCF was attempted by 7008 farmers (109% of the planned 6420 farmers) in 4621 ha (115% of the planned 4000 ha).

3.4 DIVERSIFIED LIVELIHOODS

The objective of the program is to develop job-oriented skills among under-educated rural youth and rehabilitate them by facilitating their access to skill-based employment for occupational diversity and occupational mobility.

3.4.1 Promoting 42 Rural Youth as Entrepreneurs

AF-EC has organized a workshop to potential youth on establishing with support of a resource organization named efarm, Chennai.

3.4.2 Job - Oriented Skills Trainings for Rural youth in Garment making and driving

**During the reporting period October 2012 to March 2013**

- A training session on enterprise development was given to rural youth to motivate them to take up businesses.
- A workshop on “Road Safety” was conducted for the students of the driving school, mechanics and other vehicle drivers. The District transport officials and Motor vehicle Inspectors have attended the workshop. Brochures and Pamphlets on Road safety were distributed.
- 160 Girls have been trained in garment making. About 50% of them are working as tailors in their own villages and earning an additional income of
77 Boys trained in LMV Driving 42 of them are already employed.
7 boys trained in HMV driving and 4 of them have got placement.
 Totally youth (Girls & Boys) from 244 families (60% of the planned 400) have acquired skills to diversify their occupation.

During the reporting period (April 2012 to March 2013)
284 Girls were trained in garment making in 4 tailoring centers. Of them 130 girls (46%) are from SC/ST communities. AF had conducted a test and gave course completion certificates to all the trainees who had completed the training successfully. AF is exploring opportunities for linking the girls trained in garment making to the garment manufacturing companies so that they will have skill based employment and regular income.
204 Boys trained in LMV Driving in 2 Driving schools at Anantapur and Kalyanadurg. Of them 132 boys (65%) are from SC & ST communities. As of now 41% of them are on job working in public and private sectors with a monthly salary of Rs 6000/- to 6500/- per month.
30 boys trained in HMV driving at HMV driving school at Anantapur. Of them 15 boys (50%) are from SC & ST communities. As of now, 20 candidates were settled as heavy vehicle drivers with salary of Rs 10,000/- per month.

3.5 POLICY ADVOCACY ON SA
AF has been playing a key role in sensitizing communities and government authorities on policy issues. AF is helping its target groups to have better access to information of Government schemes and capacitating to have better bargaining. It is facilitating CBOs to identify and debate on issues related to Government policies and represent to concerned authorities. By organizing campaigns and events like Environment day, World Earth Day, Combat Drought and Desertification day and International Women Days, AF is mobilizing public opinion and sensitizing on issues concerning agriculture, rural livelihoods, gender and ecology. Also AF is working with Government and influencing it to make pro-poor policies and take up pro-poor projects.

During 2012-13, AF has been specifically lobbying for taking up “mixed/diversified tree crops” rather than single fruit tree crops like mango. Now the Government has in principle agreed to go in for mixed tree crops in place of single tree crops. AF will further pursue in deciding the potential fruit trees that can be included under rainfed conditions.
4. CHANGES IN THE ORGANIZATION:

4.1.1 Related to Management structure:
There is no change in management structure.

4.2 Related to Planning system
There is no change in planning system.

4.3 Related to Staff Composition:

- During the reporting period 12 staff members, mostly new ones (8 men and 4 women) resigned. (2 AOs + 1 lab Assistant + 2 ATLs + 7 STOs)

- During the reporting period, 12 candidates have been newly recruited, of whom there are 9 Women. (2 Lab Assistants + 10 STOs)

- By the end of reporting period March 31st 2013, AF has 70 full time staff and of them 25 are women (36%).

- In addition to above, there are 230 village volunteers (karyakartas) in 230 project villages working on incentive basis. AF has developed an incentive payment system to village volunteers in 2011 and has later modified it according to the needs and changes in the program.
5. Change in Development Context and Problem Analysis.

5.1 Are there important changes in the direct Political Environment since the inception of the project?

The political situation in Anantapur district is quite the same. The tenure of village panchayats has expired by end Sept’ 2011 and now the special officers of Government are fulfilling the responsibilities of the village presidents (Sarpanches) in 996 village panchayats in the District. The implementation of Govt Schemes and village developmental activities are continuing with the special officers.

5.2 Are there important changes in the Direct Social Environment since the inception of the project?
There is no change in Social Environment.

5.3 Are there important changes in the Direct Natural Environment since the inception of the project?
There is no change in Natural Environment.

5.4 Do those changes have implications for the relevance of the project?
The relevance of project is still intact.

5.5. Do those changes have implications for the project goal?
There are no implications for the project goal.

5.6. Do those changes have implications for the project objective?
There are no implications for the project objective.

5.7. Is the underlying problem analysis of the project still valid?
Yes. The underlying problem analysis of the project is still valid.
6. CONCLUSIONS FOR THE FUTURE WORK

6.1 Do you see a need for changing the planned activities in order to achieve the project objective?
There is no need for changing planned activities right now.

6.2 Any need of updating the project planning?
There is a need for revising the plans and budgets for 2014-15 as ICCO could not contribute its share of funds fully.

The research on understanding the potential of Low Carbon Farming is in progress and the feasibility of carbon revenues is not yet clear. The need may arise to change the planned activities under LCF.

6.3 In case of need for consultancy: In what area?
Yes, there is need for consultancy support in operationalising the PME design of EED, Gender mainstreaming and in Documentation.

6.4 What are the lessons learned? Please refer to gender equality issues also.
- AF has to grow and position itself as knowledge based organization.
- Lessons are learnt in evolving MIS and participatory PME systems for better project management. These are crucial for improving organizational efficiency, effectiveness and also for achieving project objectives.
- CBO strengthening is required. The women participation and leadership in the GSS and SMGs is increasing gradually.
- The gender aspects in the organization and in the program need consistent reinforcement.
Benefits of Sustainable Agriculture - Ramanjineyulu sets an Example.

A piece of five and half acres of poor quality soil has turned out into a fertile one and has become a assured source of income for Ramanjineyulu, which in normal situation, would have remained undependable as any other land of Anantapuram District. Ramanjineyulu, belong to SC community, is living in Uppinesinapalli, Rapthadu Mandal. His family consists of his wife Muthyalamma and 2 sons. He understood the practices and principles of Sustainable Agriculture through trainings, exposure visits organized by AF EC. He also involved himself with AF EC in SA activities in his village. With motivation of AF EC he started farming with LEISA practices. AF supported him by providing local cow to prepare Jeevamrutham, inputs like seed (Millets, Pulses & Vegetables) and other resource material to pursue this practice.

AF team inspired him to go ahead with SA practices while he was ridiculed by peer farmers and also strongly opposed by his wife Ms. Muthyalamma. “My relatives laughed at me because in first year, the farm did not give any additional income though costs have come down to little extent” recollects Ramanjineyulu. He further intensified his efforts in SA by building a shed near his farm with two Cows and a setting up a cow urine collection pit. This made his life easier due to availability of cow urine and dung which are the prime ingredients in preparing ‘Jeevamrutham’ (A liquid concentrated fertilizer).

As per AF team’s advice, Ramanjineyulu made contour trenches and a farm pond.” I do not want even a drop of water to escape from my land” He says. He continued enriching the soil by applying ‘Ghana Jeevamrutham’ once every month and started growing biomass plants around the land. He set up a micro irrigation system and mixed liquid Jeevamrutham while irrigating his crops.

“I witnessed the bountiful returns from my, otherwise low productive, land after couple of years. By the end of second year, Tomatoes grown in my land has become talk of the village. They are large in size very fresh looking and tasting very delicious compared to conventionally grown with chemicals. The buyers at Anantapur Market just grabbed my stuff” Says Ramanjineyulu with pride. He observed that earth worms had returned in his land and the texture of soil has changed.

The net return has been very encouraging for Ramanjineyulu. “My cost of cultivation when compared with chemical practices has reduced by Rs 5000/- per acre in Tomato and by about Rs 8,000/-per acre in Ground nut. And so I have not borrowed from any money lender”, said Ramanjineyulu. His crop income from 5.5 acres land in 2012 is Rs 120,000/-. Gradually he is diversifying his crops with Horticulture, Floriculture; multiple crops (Millets, Pulses and Vegetables). The land is supporting itself with sufficient Bio Mass, proper water harvesting, susutainable farming methods. Now Ramanjineyulu is now purchasing very little external inputs.” In another 2 years I will earn Rs 30,000/- every month through periodical yields of different crops entire year like an employee” says Ramanjineyulu confidently.

Ramanjineyulu, an independent and eco friendly farmer has become a role model among his peer farmers. Now he is on a mission to educate other farmers on sustainable Agriculture and converted 4 farmers already to sustainable Agriculture. He says “Many farmers are suspicious of SA practices and I want to share my experience with all of them and I want them to visit my farm.”
Case study - 2

Food and nutrition security ensured with millets and pulses crops

I am Obulesu living in Gotkur village of Kuderu Mandal of Anantapuram Dist. My family consists of my wife Arunamma and 2 daughters Bharathi and Nirmala. The Government has assigned me 3.8 Acre of Rain fed land under land distribution scheme some 10 years ago as I belong to Schedule caste. Since then I had been cultivating the land and growing Groundnut crop like any other farmer in my village. The returns from Groundnut crops were always negative as the investments were increasing every year and crops are failing more often due to drought. So, all my family worked as wage labour under MGNREGS to make both ends meet.

In 2011, AF EC staff explained to me about Sustainable Agriculture and motivated me to join the Rainfed Sasyamitra group (SMG). I learnt about SA practices from the trainings and meetings. I have also purchased a local cow with AF’s support.

In the first year, I followed SA practices on my Groundnut crop. The crop has failed as usual due to prolonged dry spell, but I realized the cost of cultivation has reduced and so the loss was less than usual. In GSS meetings, I understood that the risk is greater when a single crop is grown like all eggs in one basket. AF suggested me to go for inter crop and crop rotation with millets and pulses. So, this year, I have taken up ‘Korra and Red Gram’ demonstration model in one acre of land. I followed the ratio as 7:1 (Korra: Red gram). As per the crop design suggested, I have sown Green gram and few types of vegetables as mixed crop along with Castor and Bajra as border crop.

I took my father’s help in sowing Korra as my generation has literally no guess about the sowing techniques of minor millets. My father Laleppa is quite happy to see millets crop again. I used 3 cart loads of FYM (Farm Yard Manure) for this acre plot. Seeds were sown after treating with Bheejamritam and 200kg of Ghana jeevamrutham is applied as basal dose. I sprayed Jeevamrutham once a month and sprayed Neem solution once. I had noted everything in my farmer dairy. My korra crop gave good yields and this has triggered discussion among the villagers. I never had the experience of growing vegetables earlier in Rainfed land. But to my surprise, I could get fresh and organic vegetables {Gongura, cluster bean, Ladies finger, Ridge gourd} enough for my household consumption for 4 months. I could reap Bajra -30kg (good quality), Cow pea – 15 kg, Green gram – 15 kg and a little Redgram. I had visited my land frequently to collect the vegetables and observed lots of birds have flocked to feed on Bajra crop and also ate lot of hazardous pests.

I had sent 250 kgs of Korra to Anantapur Mill for de-husking and got korra rice of 162 kg which my family has consumed along with paddy rice for 5 about months. It is a nice experience that we consumed millets and pulses grown in our own land. I have some food stock at home. My wife is feeling very happy now. She says, “I am happy that together with the rice we buy in PDS shop, our family will have nutrition food for the whole year.”

Remaining 2.0 acre Ground nut crop left me with a net loss of Rs 3000/-. Now my wife insists that we go for Korra in entire 3.8 acre in SA method. I had shared this experience in a Field Day in my village. I am happy that 1 acre of my land has given me high nutrition food for 5 months and I will continue this practice every year.
Nutritional Security and additional income from Kitchen Garden:

Kristi Bai is a poor tribal woman living in Yalagala Vanka Thanda (a tribal Hamlet) of Belguppa mandal of Anantapuram Dist. AF has been working on Sustainable Agriculture in this village since 2007 and about 60 families in the village are practicing Sustainable agriculture.

Kristi bai family consists of 8 members (couple and 6 children). They own 2 acres of Rainfed land which they leased out to a neighbor as they could not cultivate due to continuous loses. Kristi bai family’s only source of livelihood is wage labour.

Krisit bai had joined Labour SMG and was attending meetings conducted by AF in the village. She was impressed with the idea of Kitchen Garden and took up the Kitchen garden activity in 3 cents land in her back yard.

AF had provided vegetable seeds to Kristibai. She has grown Tomato, Chilli, Brinjal, Ladies finger, Bitter gourd, Ridge gourd, Coriander and Leafy vegetables in her Kitchen Garden. As she does not own cattle, she collects the dung from neighbors, prepares and uses Jeevamrutham regularly. She uses waste water from her house to irrigate the Kitchen garden. She also carries water from local tap.

In the first year itself she got a good yield of vegetables. The taste and quality of vegetables were very good. “I stopped buying vegetables for my family and still my family is eating more vegetables than ever, thanks to my Kitchen garden. My family is eating well and my children are healthy,” said Kristibai. She also sold vegetables to her neighbors when she has surplus. “I have earned about Rs 10,000 in the year 2012 and I am very happy about it as I managed some expenses of the family with the money” says Kristi Bai with confidence.

Now Kristi bai is working more in her Kitchen garden to improve yields. She has constructed a fence to the garden. All her neighbors have appreciated her work and two of them Manjula bai, Rajamani Bai started kitchen garden inspired by Kristi Bai.
Annexure 1

A Report on Gender Training held at AF – EC

I. Introduction: - AF – EC (Accion Fraterna Ecology Centre) had conducted a 3 day gender sensitization training for the 24 senior core team members during 6th to 8th December 2012 at AF-EC. The training was facilitated by 2 eminent consultants i.e. Ms. Kalamani and Ms. Nalini form Hyderabad.

II. Content and Methodology: - The content covered in gender training was very much relevant to the work of the organization.

(a) Socio – Gramming
(b) Gender and Sex
(c) Gender Tree
(d) Aspects of Gender
(e) Status of Women in Society
(f) Barriers for Women and Men in Society
(g) Different forms of violence against Women
(h) Women and Human Rights
(i) Indicators of Power
(j) Gender Needs
(k) Women Empowerment and
(l) Gender mainstreaming (Internal and External etc)
(m) Development Approaches

The Methodology used in the training like Group Exercises, Showing of Personal Experiences, Group Work, Role play etc were very effective and participatory. The participants understood that sex is natural and Gender is created by society. The SEX is Biological and cannot be changed. But, the “Gender” is culturally acquired and can be changed as it is a social construct. A Brief understanding was given on various development approaches like.

(1) Welfare approach.
(2) Equity approach – Top down – not effective.
(3) Antipoverty programmes – Top down – income generation
(4) Efficiency programmes - Top down – Skills, Technology etc,
(5) Empowerment approach – Bottom up

- Awareness, Knowledge
- Revise their Knowledge
- Listen to their voice
- Participation

The people in the “Power” are addressing only immediate pressing practical gender needs and neglect long term strategic needs while dealing with gender. The pressing gender needs include Housing, Education, clothing, health, sanitation, food, water, etc, and the strategic needs include – self esteem, economic freedom, Land, Property, Political Participation, and Skill development etc. It was well discussed and understood that to build a gender sensitive society each programmes should address both the two needs.

III. Conclusions: - The Gender Sensitization training was very much useful in enhancing the commitment of the participants towards gender. This training sensitized the participants to work towards gender mainstreaming in programmes and organization. The organization decided to extend the gender training to the field staff.
Organizational Development Program (ODP)

A 4 day Organizational Development Program was conducted for Accion Fraterna Ecology Centre (AF EC) from February 6th to 9th, 2013. All the senior staff of AF EC had participated in the programme. An experienced OD trainer and consultant from The Netherlands Ms. Anne Marie Schreven and the Director of AF EC, Dr.Y.V.Malla Reddy together facilitated the programme.

The contents covered in this program were refreshing on Vision, Mission and Values of AF, Organization Road Map, Mile stones achieved, Strengths and Weaknesses of the organization, Enabling and disabling factors of the organization (External and Internal). The program also dealt with Personality development aspects like understanding SELF, Personal Values vs Organization Values, Johari window, Feedback, Communication, Leadership etc. The methodology followed in this program was participatory, experiential and very effective.

The training was helpful in enhancing the motivation, energy and spirit of the participants. The story of “Tortoise and Hare” gave new lessons to the staff on complementary strengths, competence and consistency in organisational team work. The key learning from the story was that “Fast and Consistent with team work” will succeed in work. The participants learnt that each individual have both strengths and weaknesses and one has to minimize weakness and synergize to achieve goals. It also helped to understand each other and respect and value the differences.

This program gave a clear understanding to all the senior staff on the purpose of the organization and inspired them all to rededicate and work for achieving the goals of the organization. It also helped the participants to reflect and understand their role in the organization.
1. Introduction:

Accion Fraterna has vast experience in the implementation of participatory watershed management empowering the people in planning, implementation, monitoring and management. Integrating natural resource conservation, and development activities through peoples participation and collaboration with CBOs is being recognized as an ideal approach, to sustainable natural resource management. In this direction AF is committed to transforming semi desertic land of Anantapur into a land of capable of sustaining its population, and living in harmony with nature. Accion Fraterna, aims at long term intervention rather than implementing short term piece meal projects withdrawing and moving on. The objectives of the organization is combating drought and desertification and improving the productivity of land on sustainable basis by.

- Soil & Moisture Conservation
- Restoring traditional water bodies
- Harvesting rain water and developing surface and ground water resources
- Changing land use pattern partially from seasonal crops to drought resistant tree crops like mango, sapota etc.
- Changing the paradigm of agriculture from HEIDA (High External Input Destructive Agriculture) to LEISA (Low External Input Sustainable Agriculture)
- Promoting multiple utility vegetation & tree species through afforestation and farm forestry in CPRs and farm lands.
- Promoting non-farm income generation particularly for women and skill based employment for rural youth, particularly girls with emphasis on landless and other poorer sections.

The above objectives are being achieved through participatory watershed development by creating awareness on issues of drought & desertification and how to address the issues and building, strong community based organizations such as Village Watershed Development Committees (VWDCs) for effective participatory watershed development.

Over the last one and half decades, Accion Fraterna has covered 250 villages of Anantapur district under its participatory watershed development programme. These villages are spread over a geographical area of 3,195 sq.km. The programme has had a direct impact on 70,072 households, and a population of over 3,92,000 people.

Renovation of traditional water bodies resulted in ground water development and increased irrigation ensuring better livelihoods for the people. Integrating dairying, livestock and dry land horticulture helped fetch enough and assured income to meet the needs of marginal and small farmers. Further Accion Fraterna has,

- Contributed to the wide public awareness and build public opinion on challenges faced by drought prone and resource poor areas and how to combat drought and desertification.
• Organised mass campaigns, workshops, cultural and print media to create awareness among the people about the need and importance of conservation and sustainability of natural resources.
• Influenced Government policies and programmes of NRM to be people centred and conservation oriented
• Developed and demonstrated participatory approach and village based institutional systems to promote and institutionalize people’s participation for sustainable micro watershed development.
• Shown that, success of watershed programmes is highly dependent upon the level of participation of people, and in particular women.

1.1 Equity, Gender and Watershed Development:
Watershed programmes in a way gave the opportunity for women to participate in several programmes and prove their capabilities not only to cope with the problems but face the challenges posed by nature. AF felt that in order to enhance effectiveness of its intervention, social equity gender mainstreaming are extremely important together with strengthening village level institutions. AF began its efforts in early 1990 to increase the participation of women in community based organizations (CBO’s) and their involvement in decision making of watershed development. The landless and other poor are provided with adequate opportunities not only as labor lent in all non-farm livelihood activities and job oriented skills like driving, garment making. Gradually, the AF has taken into its fold the Sustainable Agriculture, along with watershed management inorder to benefit more the vulnerable drought hit rainfed farmers.

2. Present status of Watershed Programmes:
Against this backdrop, Accion Fraterna is implementing watershed development programme under IWMP (Integrated Watershed Development Programme), funded by Dept of Rural Dept. A.P. and WDF(Watershed Development Fund) funded by NABARD(National Bank for agriculture and Rural Development)

2.1 NABARD Watersheds:

2.1.1 Process:
The implementation of watershed development under NABARD guidelines is done in two phases namely i) CBP (Capacity building phase) and ii) FIP (Full implementation phase).

The area to be treated in each watershed is approximately 1000 ha. In the beginning, under CBP(Capacity building phase) the people of the watershed village will be prepared through campaign, meetings, and PRA to understand the concept conservation of natural resources through participatory watershed development. Besides in order to build their capacities, an area of 100 ha. in the ridge portion will taken up for treatment under CBP, for a period of one year. Initially people are motivated to take up construction of one or two structures like a percolation tank, gully treatment etc., through shramadan (voluntary labour). After assessing their interest, participation and performance for one year some Grama Sabhas (Village Assembly) will be conducted by P.F.A. inorder to explain about Watershed
Programme, the guidelines of implementation, the role of people and the formation of village level institutions needed for full implementation of watershed programme. The Grama Sabha will select VWDC members (14 to 15) from among villagers with adequate representation of small & marginal farmers, landless poor, women, weaker sections etc., The FIP will then begin with a tripartiate MOU between PFA, VWDC and NABARD. Then, participatory net planning is carried out to prepare 4 year Watershed development plan year wise. The funds for watershed activities will also be released directly to VWDC. The administration part of the funds will be refed to PFA (AF in this case). So, VWDC is in effect responsible for implementing watershed programme in the village.

2.1.2 Roles & Responsibilities of VWDC(Village Watershed Development Committee):
1. The committee will be selected by Grama Sabha and headed by an elected member from among the committee members, called chairperson.
2. Chair Person is joint cheque signatory to draw funds for activities, along with one staff member of P.F.A.
3. The committee will meet once in 15 days or as and when necessary to review the work progress and pass resolutions, for payment of works, and to plan activities to be undertaken in next fortnight.
4. The committee with assistance of PFA selects 3 watershed supervisors from among unemployed, educated active youth to oversee the works & livelihood activities.
5. The committee is responsible for selecting the eligible beneficiaries, under livelihood programme. The beneficiaries should be selected only from the poor, landless and disadvantaged who can take up non-farm income generating activities the selection process should be done with full transparency.
6. The committee members will be divided into subgroups (subcommittees) to supervise and monitor works like drainage line treatment, soil conservation, vegetative measures, dry land horticulture, livelihood activities etc.,
7. The committee will also undertake field visits periodically to cross check the quality and quantity of works.
8. The committee is responsible for all payments for activities implemented. It is done through resolution in the VWDC transparently for every payment.
9. The committee acts as project implementing Agency (PIA) of the watershed as the funds also will be released directly to VWDC by NABARD for all activities being implemented.

2.1.3 Watershed Supervisors:
1. Three supervisors are employed in each watershed village to undertake supervision of works being executed as per plan within the watershed village.
2. The 3 Supervisors will oversee separately the activities of :
   i. Drainage line treatment
   ii. Area treatment, and
   iii. Livelihood activities
3. The supervisors have to assist the Watershed Technical team of PFA, in organising labour, material and taking measurement of works and ensure quality.
4. They will be paid an incentive on the basis of progress of works and their performance.
Regular trainings are being imparted by PFA to supervisors to build their capacity in implementation and monitoring of watershed activities.

Besides AF is facilitatory the convergence of programmes through other agencies like RDT, DWMA (MGNREGS) Agriculture Department, Horticulture Department etc., For example drip irrigation, and solar pump sets are provided by RDT, to the dry land horticulture farmers, in the watershed villages and many soil and moisture conservation measures also have been undertaken under MGNREGS.

2.1.4 Watershed Development Fund (WDF):
The farmers and the villagers who are benefited by creation of watershed assets, contribute certain amount in cash to a fund called Watershed Development Fund. These funds will be utilized by the committee after the project period of (5 years) for maintenance of the assets. The livelihood amount released by NABARD will also remain with the VWDC in the post-programme period which can be utilized as revolving fund for enhancing livelihoods of the poor, on repayment basis. The VWDC is responsible for implementation of the watershed activities as well as livelihood activities.

2.1.5 Future Institutional Arrangement:
Further it is also proposed to transform each VWDC into MACTS (Matually Aided Cooperative and Thrift Society) to sustain the programme in the post-programme period a legal body to sustain the post-programme activities and infuse legal body to sustain the post-programme activities. This arrangement will ensure ownership and responsibility of the people, for effective post project management.

2.1.6 Physical and Financial Progress as on 31.03.2013

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<th>Livelihood Amount Distributed</th>
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3. Integrated Watershed Development Programme (IWMP):
Accion Fraterna is also implementing Integrated Watershed Development Programme funded by department of Rural development, Govt. of India through State Government of Andhra Pradesh. The Govt. of India (Ministry of Rural Areas & Employment) have communicated the “common guidelines for watershed development” in the year 2008. As per new guidelines, each watershed covers an area of 2000 to 3000 ha, called ‘Mega Watershed’. Each mega watershed is subdivided into 3 to 5 micro watersheds, depending on the number of villages, within the mega watershed three mega watersheds are being implemented by Accion Fraterna viz 1. Muttala (2009-10) Atmakur Mandal 2. Bandameedapalli (2010-11) Rapthadu Mandal 3. Kuderu (2011-12) Kuderu Mandal. Muttala
Mega watershed is divided in 4 micro watershed, namely, Papampally, Muttala, Goridindla, D.K. Thanda Bandameedapalli mega watershed is divided into 3 micro watershed namely Bandameedapalli, Yerragunta, Varimadugu. Kuderu watershed has 5 microwatersheds viz., Kammuru, Kuderu, Antharaganga, Aravakuru, and Kadadarakunta.

The period of implementation of each watershed project is 7 years from the date of entering MOU with PIA.

3.1 **Process and formation of Watershed Development Committee:**

After subdivision of the Mega watersheds into miro watersheds several Grama Sabhas (Village Assembly) have been conducted in each of the micro watershed village. The details of the programme, guidelines, and procedures were explained to the villagers, emphasizing the need for conservation of natural resources through “participatory watershed management”.

Later, the Gramsabha selected the VWDC members (14 to 15), by consensus. At the time of selection of members, small and marginal farmers, landless poor are given importance, with due importance to SC,ST, weaker sections & women, so as to involve all sections of the society in the programme.

3.2 **Roles & Responsibilities of VWDC (Village Watershed Development Committee).**

1. The VWDC will be headed by a chair person selected member from among the committee members.
2. The VWDC meets once in 15 days to review the progress of works and pass resolutions to take up new works, as per the detailed project report.
3. The VWDC selects, one active educated unemployed youth to work as “watershed assistant” to oversee the day to day works and report to committee & PIA periodically.
4. The VWDC undertakes the field visits periodically to ensure the quality and quantity of works.
5. The VWDC along with V.O. (Village Organization ie., federation of women self help groups) selects the beneficiaries, from poor and landless poor families under non-farm livelihood programme component of the watershed.
6. The VWDC & V.O. are responsible for recovery of the loans sanctioned to beneficiaries under livelihoods.

3.3 **Payment system:**

The payment for works in the watershed programme is done through EFMS (Electronic Fund Management System). For this purpose, one W.C.C (Watershed Computer Centre) is set up at AF and the Computer Centre is linked on line to SLNA (State level Nodal Agency) Hyderabad, from where all the payments will be made directly into bank account of labor beneficiary (Skilled & unskilled labour) after through verification of muster rolls & M-Book. Through this online system, progress of works & expenditure of each watershed, will be captured by State level Nodal Agency every hour.

This system is highly transparent with regard to financial transactions of the programme as anybody can have access to website to know the details of implementation of the programme activities and financial information.
PIA is given directly 10% of the total expenditure towards Project Administration.

3.4 User Groups:
User groups of farmers within the watershed are formed to inculcate a sense of ownership and responsibility among smaller groups over the programme components. Farmers within a contiguous area of 100 to 120 Ac, of cultivated land are formed into a group called “User group” Sometimes affinity groups are also formed who can take up same type of activity (For example, Dry land horticulture, fodder development etc.,) Each member of group will save an amount of Rs.50/- per month, and group members meet periodically to discuss about the execution of activities within their farm lands. The SLNA sanctions matching grant to the user groups to take up purchase of implements, seed etc., The following table gives the information of U.Gs and savings in Mega (IWMP) watersheds.

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name of Mega Watershed</th>
<th>No.of U.G’S</th>
<th>Saving amount Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Muttala</td>
<td>44</td>
<td>3,98,000-00</td>
</tr>
<tr>
<td>2</td>
<td>Bandameedapalli</td>
<td>45</td>
<td>3,60,000-00</td>
</tr>
<tr>
<td>3</td>
<td>Kuderu</td>
<td>98</td>
<td>8,90,000-00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>187</td>
<td>16,48,000-00</td>
</tr>
</tbody>
</table>

Best performance Award Consecutively for 3 years: 
AF is implementing the IWMP Projects giving high priority to participatory approach. Recognising the efforts of AF in implementing the projects, the state level and district level administration awarded “Best Performance Award” consecutively, from 2009 to 2012. Muttala watershed is a model watershed, which is being visited for exposure by many implementing agencies, in order to emulate the processes of participatory watershed.

3.5 Watershed Development Fund (WDF):

An amount equal to 5% of the total cost of the watershed assets created in in farmers land will be contributed by the farmer to WDF. This fund will remain with the VWDC, which will be used for post project maintenance of the assets created.

3.6 Table showing the expenditure particulars of IWMP watersheds upto 31/03/13

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of Watershed</th>
<th>Area to be treated (ha.)</th>
<th>Area treated (ha.)</th>
<th>Expenditure (Rs. in Lakhs)</th>
<th>No. of farmers benefitted</th>
<th>No. of labour families benefitted</th>
<th>No. of person days generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Muttala</td>
<td>2535</td>
<td>1974</td>
<td>287.68</td>
<td>349</td>
<td>1556</td>
<td>1,40,000</td>
</tr>
<tr>
<td>2</td>
<td>Bandameedapalli</td>
<td>4942</td>
<td>1243</td>
<td>117.55</td>
<td>205</td>
<td>567</td>
<td>51,000</td>
</tr>
<tr>
<td>3</td>
<td>Kuderu</td>
<td>4331</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11808</td>
<td>3217</td>
<td>405,23</td>
<td>554</td>
<td>2123</td>
<td>1,91,000</td>
</tr>
</tbody>
</table>

An amount of Rs.13.00 Lakhs is released towards livelihood activities by the SLNA to Muttala Watershed. The process of selection of beneficiaries is in progress. The Amount will be the livelihood groups after the finalisation of the list of beneficiaries and approval by VWDC and VO.
Apart from the activities related to conventional watershed development, A.F ha initiated the implementation of Low External Input Sustainable Agriculture (LEISA) programme in all the watershed villages, from 2012.

The Research Unit for Livelihoods and Natural Resources (RULNR), of CESS (Centre for Economic & Social Studies), have assessed the Watershed Development Programme with reference to women empowerment. An extract of their report is given separately in Annexure

4. An extract from “Beneficiary Perceptions of Accion Fraterna’s Watershed Development Programmes with reference to women empowerment”

Women’s Leadership Development:
As a result of the A.F’s programmes and, subsequently, the AF watershed development programme, the active participation and leadership of women in decision-making has become an important characteristic of many villages. In particular, many women have taken the opportunity through SHGs to increase their participation in a variety of activities.

Since the inception of the watershed programme, women’s attendance has increased at GP (Gram Panchayats) meetings, as well as Mandal and District-level meetings. Formerly, most women would not attend government meetings. Now, many feel that they can approach officials about issues of concern to them, such as drought-relief works, equitable distributions of benefits, compensation for agricultural losses, and other issues.

Equal wage for men and women through watershed works has been an improvement over the gender disparity in traditional agricultural labour. Due to this, the gender disparity in agricultural wages was reduced substantially, as increasing number of women asked farmers why wages were not equitable. Women reported increased productive activities available for themselves through SHGs. In addition, instead of borrowing from rich farmers, they use the groups as an alternative source for loans. In one village, women’s management of common property land near a tank has increased its value. Fund-raising for village development through auctioning of the land, has led to greater funds for roads, lighting, and school improvements

The lack of local schooling above primary level causes some students (especially girls) to dropout. To rectify this situation, women have been advocating for school upgradation. Another issue of concern to them was the demands on women to do both income-generating activities and household work.

Mainstreaming Gender and Organisational Development
It is in this process of continuous organisational change, that AF realised that to enhance the effectiveness of its work, apart from strengthening village level institutions, further understanding and addressing organisational issues (e.g. mainstreaming gender, PME, OD Processes) is extremely important. Thus, AF entered into a new phase of institutional learning and development.

AF began in early 1990s with efforts to increase the participation of women in Community
Based Organisations (CBOs) and their involvement in decision-making of watershed development. Since 2002, gradually AF has been making efforts to integrate gender in AF and in programmes through recruiting more women staff at senior level and developing greater contact with women at village level. The learning’s from these attempts created a demand for building perspectives on gender across the organisation and work towards mainstreaming of gender.

The process of organisation level reflection and learning on this issue resulted in

- Moving towards a holistic perspective on gender and its mainstreaming in the organisation and in programme;
- Increased women's participation in watershed activities and institutions;
- Promoted women leaders with an objective that they take up village issues;
- Efforts made to understand the role and participation of women and innovative attempts to integrate women in Natural Resource Management (NRM).

Apart from the above, a holistic 'ecological perspective' started emerging as an integrated framework to address issues related to agriculture, NRM, livelihoods and community empowerment. AF feels the need to further explore this perspective that enables further understanding on interfaces and linkages between NRM and gender, social institutions and technology.

Gender is a cross cutting theme in all AF’s program activities. In order to bring the gender balance in programme activities, gender trainings / (separate and combined) are organised in all 240 villages twice in a year.

The main aspects focused in the trainings are: disparities between men and women in education, health, employment, income opportunities, control over assets, personal security, work load, early marriages, and participation in AF’s programme activities, and decision-making, power etc. Under each training 30 men and 30 women were covered.
A Study report by: Research Unit for Livelihoods & Natural Resources (RULNR)
Beneficiary Perceptions of Accion Fraterna's watershed development programmes with reference to women empowerment.

Watershed development refers to the conservation, regeneration and the judicious use of all the resources—natural (land, water, plants, and animals) and human—within a particular watershed. Watershed management tries to bring about the best possible balance in the environment between natural resources on the one side, and human and other living beings on the other. Watershed development, where implemented effectively, will have wide ranging impacts upon the recipient villages; however, these impacts may not be in conformity with the principle of equity or sustainable development. In order to realize the full potential of watershed development, pro-poor programmes that complement the benefits of watershed development need to be introduced. The present study highlights the women empowerment through watershed programme taken up by Accion Fraterna (AF) funded by external agencies.

Watershed programmes, inter-alia, changed the very face of rural India. This has resulted, to some extent, stopping the migration of rural population to towns and cities in India. Smaller and marginal farmers could earn their living without succumbing to various undesired pressures. The watershed programme has come to stay in rural India. This research paper highlights the perceptions of beneficiaries of watershed programmes taken up by Accion Fraterna (AF) (1) a Non-Governmental Organisation (NGO), which earned the positive reputation for having been engaged in the rural development arena. AF, an active NGO in Anantapur district of Andhra Pradesh had entered into several areas of rural development. The office bearers of AF are associated with several programmes taken up by Panchayat Raj Institutions (PRIs). The office bearers of the NGO are on most of the development committees of PRIs. In a way, the NGO under discussion had officially become a party in the rural development activities undertaken by PRIs.

Watershed is one of the rural development programmes actively sponsored by AF. The study desired to understand the perception of beneficiaries of watershed programmes managed by it and know the merits and demerits of the said programme. The research describes in detail about the perceptions of beneficiaries on several aspects associated with the watershed programmes and suggests certain corrective measures in the light of the findings of the research study.

Andhra Pradesh (AP) is a drought-prone and resource-poor area of southern India, where issues pertaining to the livelihoods of the poor particularly, water resource management are of vital importance. Approximately three-fourths of the state's population i.e. around 75 million people still live in rural areas. While the share of the state's overall income from agriculture has been declining in comparison with other sectors, the overwhelming majority of the people continue to be employed in agricultural work. As so many people depend on rainfed agriculture, the loss of productivity due to drought can have serious consequences in many areas of the state. The Government of India is spending over $500 million annually on watershed development projects (Rao, 2000). Thus the successes and shortcomings of these initiatives have potentially enormous financial outcomes.
This paper is based on a study was undertaken at the request of the Andhra Pradesh Rural Livelihoods Programme's Programme Support Unit (PSU) Coordinator, in order to better understand and document the perceptions of the intended beneficiaries of the various projects of AF. There has been increasing recognition over the past several years, especially, with the adoption of the new guidelines for watershed development in 1995 that the success of many watershed programmes is highly dependent upon the level of participation of the community members it aims to benefit (Saxena, N.C.: 1999). It is hoped that an investigation into stakeholders' perceptions of programme impacts may provide insight into aspects of projects they believe have been most beneficial, challenges to be met, and potential areas for future focus.

Watershed programmes in a way gave the opportunity for women to participate in several programmes and prove their capabilities not only to cope with the problems but face challenges posed by the nature. This article gives an insight of women participation in various watershed programmes and also their perceptions about the activities taken up by AF.

**Methodology**

Background information on the main villages included in the study, as well as on facets of AF's various programmes, was provided by AF staff from their fieldwork and previous studies. The perceptions of villagers regarding the impacts of AF’s projects were gathered through Focus Group Discussions (FGDs) and individual interviews. The researchers, accompanied by a team of six AF staff members familiar with the villages, made six field visits, to conduct discussions and interviews. FGDs involved participants selected according to the primary projects they benefited from one of the six sectors: horticulture, rainwater harvesting, employment generation, bio-gas promotion, soil moisture conservation, and women's leadership development. These categories were not meant to be mutually exclusive, as many of the participants often benefited from more than one type of AF project. Practical considerations also limited the number of participants that could be included from any given list of potential beneficiaries. It should be noted that this was not a random sampling procedure, and the participants were largely male land owners from the non-poor castes, and in many cases they were part of decision-making bodies (for example, as members of the watershed committees). The group sessions were conducted in a semi-structured format, lasting between 1.30 to 2.30 hours. Semi-structured interviews were conducted with some individuals selected from among the participants in the group discussions, which lasted from one to two hours. Semi structured formats were chosen for discussions and interviews in order to balance the desire on the part of the researchers to investigate specific topics, while still allowing some flexibility for the participants to discuss issues that they saw as relevant.

It should be noted that participants' comments in this study may have been influenced by, among other factors, their familiarity with one of the researchers (in some instances, leading to a clear desire to make a case for more funding), and their unfamiliarity with the other (whose presence, as a foreign national, caused more than a little disturbance in the villages). Truly "individual" interviews were also almost impossible to conduct, as other family members, former employers, husbands and other men (in the case of interviewing women), random onlookers, and occasionally AF staff were present for most of the duration. In addition, when referring to project donors, funding sources, and implementing agencies, there was frequently confusion in people's minds as to which entity or organisation was responsible for which project- particularly regarding the distinction between those projects under the support of the RDT, and those undertaken by AF. Any such ambiguities were left uncorrected- as part of people's perceptions throughout the report. The villages selected for in depth study are here under: 1. Mallapuram; 2. Kadiri devarapalli and Thimmapuram; 3. Settur; 4. H.R. Palli and Seeboi; 5. Kundurpi; 6. Karriganipalli; 7. Bandameedapalli, and 8. Nijavalli.

**Women's Leadership and Empowerment**
In most instances, women face greater vulnerability compared to their male counterparts though both men and women face deprivation and exploitation of their basic human rights. Women face social and cultural discrimination, have less access to resources, lack in agency and are less likely to be involved and represented in decision-making bodies. AF believes that any development effort which is not gender sensitive will lead to further marginalisation and inequity. In recognition of this, AF strives to address gender issues in all aspects of its functioning.

Understanding gender issues has to be accompanied by a thorough understanding of the context of its occurrence. The paper has tried to mainstream the gender issue by examining the role of women in the context of watershed development. FGDs and personal interviews with women groups and women members had thrown light on their activities.

The women group with whom FGD was conducted had nine women members. However, during the discussions it was the watershed committee president who did all the talking. Livelihood activities reported by this group included small business, rainfed farming, agricultural labour, labour exchange (landed women working in each other’s fields), paddy and sunflower cultivation, horticulture, and watershed works (such as contour bunding). Some do tailoring (for both household and business purposes)—which they learned in Kalyandurg from tailor shops—and basket making during non-work hours. Some also purchase fruits and vegetables from Kalyandurg and within the village, and sell these in the village or surrounding areas. One member owns a store, and one is a teaching assistant in the Integrated Child Development Service (ICDS) projects/anganwadi centre.

All present in the group are active in the watershed committee and various watershed works. Some of the important activities and achievements of the committee were then discussed. These included the promotion of horticulture and associated works (pit-digging, planting, etc.). The motivation of residents to participate in shramadan (cooperative, voluntary labour) has also been one of their objectives. Other areas included family planning, encouragement of school dropouts to re-enroll, lobbying for school expansion (to include students above 7th class), and discouraging agricultural labour for children under 14.

They conveyed that women’s participation in village meetings has increased, as has their participation in other events—such as International Women’s Day—since the inception of the RDT programme, and the SHGs in particular. They now feel more free to approach officials about issues of their concern. They have also participated in “exposure trips” to learn more about agricultural management practices for implementation in their own fields.

The main benefit of the RDT programme that they repeatedly stressed was their increased ability to express themselves at various levels. One tangible benefit of this was felt recently, as they were able to resolve an ongoing dispute with a wealthy person who had barred their access to some of the temple lands, which are an important Common Property Resources (CPR). The women used funds from their SHG to pay for transportation to visit various officials—including the collector—and seek action concerning this unjust situation. As a result, the wall that the person had constructed was eventually recognised as illegal and dismantled. For the future, they plan to use the watershed development funds that are collected from people’s contributions to pay for needed projects and maintenance of watershed related structures. They did not mention any other significant challenges.

Village Profiles and Case Studies

The watershed development programme was initiated in Kundurpi in 1999. It is notable that both the Kundurpi and Karriganipalli watershed committees are comprised solely of women members. All four villages have watershed projects funded by AF. There are 33 SHGs in Kundurpi, six of which are supported by RDT.

Kundurpi, which is the Mandal headquarters, is located 33 kilometers from the town of Kalyandurg, and 80 kilometers from the district headquarters Anantapur. It has a population of 7061, and out of
a total of 703 households, less than 1 per cent are Scheduled Tribes (ST), 26 per cent are Scheduled Castes (SC), 58 per cent are Backward Castes (BC), and remaining 15 per cent are Other Castes (OC). Eighty of the families are landless. The landed farmers irrigate an area of about 758 acres.

**Findings from FGDs Women’s Empowerment and Leadership**

This group consisted of 13 women from Kundurpi and the nearby villages of Karriganipalli, Bandameedapalli, and Nijavalli.

Participants in this discussion included farmers with irrigation facilities, as well as landless labourers. Some managed small businesses and others did agricultural wage labour and watershed work. Many reported participating with their husbands (as "helpers") in such activities as sheep and goat rearing, sericulture, blacksmithing, carpentry, and cutting hair in barbershops. Many of their activities were promoted through RDT SHGs. In addition to income-generating work they did household work such as fetching water and collecting fuel wood.

Members from the three villages near Kundurpi all reported involvement in avenue plantation work. The Watershed Committees of their respective villages monitor their work and pay them Rs. 15 per plant for watering and maintenance. The high survival rate of the plants (around 95 per cent) has led to their reputation as being good caretakers.

When asked about the effects of drought, their first concern was the reduced agricultural employment. One woman in the group indicated that she was eating less. Many are now involved in separating seeds from the groundnut harvest (for which they are paid by the kilograms). For those with land, some exchanged labour by working in each other’s fields.

One participant indicated that the women’s groups are using their power to strike for better government assistance through increased drought-relief works. They have also given presentations to various officials regarding this need. Incidentally, during our discussion, a few members of the group left to participate in a demonstration demanding more government assistance during the drought.

Over a year ago, some of the members fought for a drought relief fund (DRF) to help cover the losses they incurred from the rainfed groundnut crops. As a result of their action Rs. 500 per acre were paid this year. They believe that if the present drought continues, they will have to resume demonstrating for government assistance as soon as possible, especially for help with obtaining inputs for future crops. There have been problems regarding inequitable distribution of the relief assistance given to date, so they have to continue fighting for those who have been overlooked.

Their advocacy on other issues has led to benefits provided for the elderly and widows, as well as ration cards for the landless from the government.

One of the challenges they expressed was the lack of time to do both agricultural and household work. In order to help alleviate this problem, they requested gas cylinders for cooking use—as an alternative to wood-fired stoves. Two group members have acquired gas cylinders, as well as biogas generation systems. The cylinders were made available through a government scheme, with RDT facilitation. It costs Rs. 300 to buy one cylinder, and it is difficult for them to afford it during the drought, but using gas saves time and energy that would otherwise be spent on collecting fuel wood. Burning gas instead of wood also produces less pollution in their homes. Others in the group reported that cost was a factor preventing them from acquiring these systems. They did not acquire the bio-gas systems either, because they required to have at least four cattle for dung. It is not possible to freely collect dung from other people's animals, as it is highly valued as a source of fertilizer for fields.

They gather minor forest produce, fuel wood, and graze livestock in the nearby revenue hillocks. For village development as a whole (including road and lighting improvements), they valued the annual money-raising auctions of village lands near the tanks. In Nijavalli, the village woodlot area was previously not maintained well, and generated only Rs. 12,000 through the auctions. The all-
women watershed committee then took over management of the area, and it now generates Rs. 30,000 through auctioning. A large portion of this money has been used for school improvements.

In Karriganipalli, the unopposed selection of a Scheduled Caste (SC) woman as Sarpanch of the Gram Panchayat was rewarded by RDT with Rs. 25,000, in addition to Rs. 45,000 for an entry-point activity designed to promote collective village development work. Out of this Rs. 20,000 went towards the construction of a watershed office, and the remainder was used for a drinking water pipeline.

In Bandameedapalli, the watershed committee raised money to improve access to the local school. In villages where schooling is available only up to primary level leads to a number of students--especially girls--discontinuing school. School upgradation, expanding to include Upper Primary classes, is thus a very important issue to many families. The scarcity of teachers can overcome in some cases with the temporary employment of volunteers to fill in gaps, with contributions from parents towards their salary.

One woman in the group is the current Village Development Committee (VDC)/Watershed Association president. Proud of her 40 years of service as a communist party member, she says she was impressed with the Watershed Development Programme (WDP) activities from the inception, and so decided to become involved. In her position, she conducts and participates in Gram Sabhas and watershed committee activities without a profit motive. She participates in shramadan, and various watershed works, such as maintenance of the water-harvesting structures. She stated that a 100 per cent rate of collection of contributions has been achieved under her leadership, by convincing farmers to take part in the watershed activities. As a result of the watershed development programme, she has also had the opportunity to approach government officials concerning the implementation of various social programmes for her community.

As a result of the RDT programme, and subsequently the AF programme, women's leadership emerged. In particular, the SHGs have given many women the opportunity to participate in a meaningful way in a variety of activities. Formerly, most women would not attend government meetings. Since the inception of the watershed programme activities, women's attendance has increased at Gram Panchayat (GP) meetings, as well as mandal and district level meetings. Most of the group members attended the recent International Women's Day celebrations in Anantapur. Due to the equal wages paid to men and women for watershed activities, the gender disparity in agricultural wages was reduced substantially, as increasing number of women pressed farmers for more equitable pay.

They cited various watershed works to be most beneficial to them. The wage labour available for watershed works has been important to many during the lean season, when agricultural employment is difficult to find. Additionally, the watershed SHGs offered members a source of loans, as an alternative to the wealthy farmers. The backyard horticulture and kitchen garden projects have been highly useful, as the AF subsidies have made inputs for growing coconuts, sweet limes, and mangoes. AF provided such plants for Rs. 15 per plant, whereas the same plants would have cost Rs. 50 through most private vendors.

As the returns from groundnut crops are never guaranteed, they expressed a need for financial incentives to promote mango cultivation—a more reliable source of income. They also would like to see greater promotion of non-farm activities, through either the government or RDT, in areas such as training for other skills and crafts (for example, making bullock carts) and marketing.

Another area for future development is the promotion of dairy activities. While the men in their
families were doing agricultural work they would prefer to raise milch animals if they could get assistance in acquiring them, and if milk collection centres were available in their local area.

**Individual Interview 1**

M. Gangamma, 45, belongs to SC community. Her family has nine members, including two men and two women who are working. One of her sons received his Bachelor's Degree, and is presently unemployed. Her elderly husband is dependent on her. She is currently a watershed committee member, SHG VO Executive Committee president, and Ward Member of the Gram Panchayat.

She has seven acres of land, two of which are irrigated while the rest is devoted to rainfed groundnut. She also does some sericulture. The main limitation to her livelihood activities at present is the lack of water in her borewell. She also does agricultural wage labour in others’ fields. Her daughter-in-law works with her, but her sons do not work in others’ fields. She does not do watershed work.

The WD P has benefited her with increased water available in her borewell, and allowed her to double the area under irrigation (from one acre, to two). However, due to the drought conditions, two of her crops failed recently, and there has been a lack of adequate water in the borewell.

Six months ago, RDT constructed 10 houses for SC colony, where she lives, and also installed a hand pump for household use. She reported no problems with the drinking water availability or quality. She previously lived in a hut, and considers the RDT housing an improvement.

Prior to the drought, her groundnut harvest amounted to over 40 bags, but has been reduced to only eight bags recently. The loss of income, in addition to major expenses --including her son's bachelor's degree, daughter's marriage, and digging a borewell--has led her to become highly indebted--totaling to Rs. 90,000. Now there is pressure on her to repay the loans and the creditors have threatened to seize her home and other assets. Her positions as a watershed committee member and GP Ward Member have served as a temporary coping strategy for dealing with her creditors.

Important sources of assistance for her have included interest free loans from the permanent drought fund, which enabled her to purchase groundnut seeds this year. As part of her SHG, she promotes dairy activities to raise income for its members. She would like to become involved in tamarind cultivation, which she sees as less risky than growing mangoes.

**Individual Interview 2**

V.S. Premalatha is a young woman (she has passed 10th class) from the O[C.sup.2] Forward Caste community and is President of the Watershed Association (WA). Her family owns 80 acres of land, 20 of which are her since the recent division of land among her siblings. One month ago, she separated from her joint family household, and now lives with her husband and their two daughters.

She has been president of the WA for the past six months, after taking over from her mother-in-law, who quit due to poor health. The watershed committee unanimously accepted her at that time. Her husband is the president of the sericulture farmers' committee, of which she is a member.

All of her 20 acres of land is under irrigation, with 15 acres devoted to mango, along with some
sapota and tamarind. Intercropped with these trees are Ragi, groundnut and sunflower crops. She also has five acres of papaya trees. Last year, the income from these crops was Rs. 45,000; this year, it has been reduced to Rs. 35,000 due to drought.

Watershed development activities in her lands have included the construction of two check dams, contour bunding, backyard horticulture, and kitchen gardening projects. RDT gave them various financial incentives for mango cultivation (pit-digging, watering, and related activities). They now lease out their mango plantation for the duration of the crop year (from January to May or June annually).

From RDT, she also received three units (1 unit = 1000 worms) of vermi-compost. As part of this programme, RDT supplied 10 units of vermi-compost and training to interested farmers in the village, with the expectation that the farmers would provide the necessary labour. As a result, for the past four years she has been practicing vermiculture composting. In addition to increasing the yields on their own plots, she and her husband have also been able to make a substantial sum (Rs. 110,000) selling the surplus vermicompost they have produced.

For the future, she would like the promotion of dairy development in small groups, through assistance in purchasing mixed-breed buffaloes.

**Women's Leadership Development**

As a result of the RDT programmes and, subsequently, the AF watershed development programme, the active participation and leadership of women in decision-making has become an important characteristic of many villages. In particular, many women have taken the opportunity through SHGs to increase their participation in a variety of activities.

Since the inception of the watershed programme, women's attendance has increased at GP meetings, as well as Mandal and district-level meetings. Formerly, most women would not attend government meetings. Now, many feel that they can approach officials about issues of concern to them, such as drought-relief works, equitable distributions of benefits, compensation for agricultural losses, and other issues.

Equal wage for men and women through watershed works has been an improvement over the gender disparity in traditional agricultural labour. Due to this, the gender disparity in agricultural wages was reduced substantially, as increasing number of women asked farmers why wages were not equitable. Women reported increased productive activities available for themselves through RDT SHGs. In addition, instead of borrowing from rich farmers, they use the groups as an alternative source for loans. In one village, women's management of common property land near a tank has increased its value. Fund-raising for village development through auctioning of the land, has led to greater funds for roads, lighting, and school improvements.

The lack of local schooling above primary level causes some students (especially girls) to dropout. To rectify this situation, women have been advocating for school upgradation. Another issue of concern to them was the demands on women to do both income-generating activities and household work.

**Mainstreaming Gender and Organisational Development**
It is in this process of continuous organisational change, that AF realised that to enhance the effectiveness of its work, apart from strengthening village level institutions, further understanding and addressing organisational issues (e.g. mainstreaming gender, PME, OD Processes) is extremely important. Thus, AF entered into a new phase of institutional learning and development.

AF began in early 1990s with efforts to increase the participation of women in Community Based Organisations (CBOs) and their involvement in decision-making of watershed development. Since 2002, gradually AF has been making efforts to integrate gender in AF and in programmes through recruiting more women staff at senior level and developing greater contact with women at village level. The learning's from these attempts created a demand for building perspectives on gender across the organisation and work towards mainstreaming of gender.

The process of organisation level reflection and learning on this issue resulted in

* Moving towards a holistic perspective on gender and its mainstreaming in the organisation and in programme;

* Increased women’s participation in watershed activities and institutions;

* Promoted women leaders with an objective that they take up village issues;

* Efforts made to understand the role and participation of women and innovative attempts to integrate women in Natural Resource Management (NRM).

Apart from the above, a holistic 'ecological perspective' started emerging as an integrated framework to address issues related to agriculture, NRM, livelihoods and community empowerment. AF feels the need to further explore this perspective that enables further understanding on interfaces and linkages between NRM and gender, social institutions and technology.

**Gender Trainings**

Gender is a cross cutting theme in all AF's program activities. In order to bring the gender balance in programme activities, gender trainings / (separate and combined) are organised in all 240 villages twice in a year.

The main aspects focused in the trainings are: disparities between men and women in education, health, employment, income opportunities, control over assets, personal security, work load, early marriages, and participation in AF's programme activities, and decision-making, power etc. Under each training 30 men and 30 women were covered.

**Women’s Day**

Women’s day is planned at cluster level, covering 200 women and men from all villages, every year in the month of March. Aspects related to empowerment of women, participation in AF's programme activities, government policies and programme like National Rural Employment Guarantee Programme (NREGP), livelihood programmes, social welfare schemes are discussed in this gathering. The purpose of the gathering is to share their experiences and feelings with others who come from different villages. The women's day is a happy occasion for them to express their
feelings, views and enjoying the day besides taking some decisions related to their future role in family on community / society. From each village, 30 women and 10 men will attend to these women day celebrations;

**Women's Views/Perceptions on Empowerment Through Watershed Development Programme Activities**

G. Indiramma--House Wife, Battuvanipalli Village opined "... is very useful to our family ...". I don't have to go for fire wood collection now. My kitchen is clean because it does not produce smoke. I am free from smoke hazards like burning eyes, cough etc. It is easy to clean cooking utensils also...."

Saraswathi Mahila Women Group Members, Bandameedapalli village stated, "....Tamarind trees on lease has earned me around Rs.25,000/- ...". "....We have mobilised a loan of Rs.98,000/- from Gramyky Sangham/Village Organisation (VO). With this amount we took Tamarind trees on lease and earned Rs.25,000/-. We could provide employment to 60 labourers in the process. Further we mobilised loan from RDT to an extent of Rs.38,500/- and with that amount all the group members purchased two ram lambs (3) each. We reared them for one year and got profits up to Rs.1,000/- on each lamb...."

Anjinamma--SHG member, Palavenkatapuram village conveyed "... Now I don't have to depend on my husband for small needs ..." and "... After joining SHG, I have taken loan and set up a small shop at my house. Now I don't have to depend on my husband for small needs. Now my husband is also taking my opinions in agricultural works, crops etc. I am taking some of the family decisions and my husband is also supporting me. I am feeling very happy now and I thank AF for that ...").

Laxmi Devi--User Group Member, Yerraborepalli village observed "... Village meetings and trainings are helping me ..." and "...I am attending meetings and trainings at Kalyandurg town and sometimes even staying there for one or two days. My husband is also supporting me and he and his mother are even taking care of my small children at home...."

Govindamma--SHG Member--Kambalapalli village felt that, "... Even men are also encouraging us to participate actively and our opinions are also valued ..." and in combined meetings with men, we are sitting in the front rows and freely expressing our opinions. Even men are also encouraging us to participate. So we are very happy that we are participating actively and our opinions are also valued;

Watershed Management Committee Members, Rudrampalli village said, "... Living with dignity ..." and extend their views "....there are four destitutes in our village. We collected contributions from people to help them. We paid them Rs. 1,250/- each during Grama Sabha (GS). We are also collecting food grains. We are trying to make them live with dignity....".

Santhamma, House Wife, Diguva Thanda village opined, "....I am saved from health hazards like burning eyes..., etc.," and ".... AF has supplied smokeless chulha to our family. It is mobile and I can took any where indoor or outdoor. The consumption of fuel wood is less...." etc.

Akkamma, Women farmer, M. Venkatampalli village was of the opinion, "... My husband supported my decisions....".

Rangamma, SHG member, Kariganipalli village stated, ".... Last year we planted fruit plants in our land. I decided on the number of plants to be raised i.e. in one acre. My husband supported my decision. Formally the plantation is also in my name. I am very happy about this ... and ....I got a profit of Rs 4000 ...".

Jyothi--Woman Labour, Veligonda village felt," "....I and my husband are working as labourers in Kariganipalli watershed. During these three years we have saved Rs.2,800/- from our earnings working pebble bunding. Recently we purchased four ramlambs from this amount and we are expecting a profit of Rs.4,000/- after six months. We are thankful to AF for providing us the work....".
Case Studies

A few following case studies are given to show the women empowerment:
A Tailoring Centre is established with Young Girls' Initiative: A Case Study of Mahantapuram Village

There is a high demand for garments in the surrounding areas of Settur. Two girls Roja and Shilpa of Mahanthapuram village in Settur area used to go daily to the Mandal headquarters for learning tailoring and they used to leave at 8.00 a.m. and return by 6.00 p.m. to their village. They felt it was difficult to do so every day. They gathered 23 girls, who were also interested in learning tailoring, contacted AF staff, expressed their problem and asked for a solution. AF staff, in turn contacted JSS (Oana Shikshana Samsthan) a Government Agency at Anantapur which provides skills training for rural youth. Then AF staff conducted a meeting for the girls and their parents and explained the terms and conditions involved for establishing tailoring centre in their village. Within a week's time the contribution amount was collected from the members and handed over to JSS official, who got the proposal sanctioned.

"We are thankful to AF for helping us in the establishment of a tailoring centre in our village. It saved our time and money. Our parents are also feeling relaxed as there is no need for us to go to far-off places to learn tailoring. We are thankful to JSS for the help they have extended to our village—Girls of Mahanthapuram

The centre was started on September 13th and AF staff took the responsibility of follow-up, checking the attendance of the members and the tutor regularly, conducting tests every month etc. Here they learn not only normal cloth stitching but also the fancy hand works, Zig Zag, embroidery etc. After completing this training the interested girls will be sent to nearby towns and cities for learning advanced courses in fashion designing. The other girls can do the garments in the village itself and sell in their village as well as in surrounding villages.

An Initiative by Women Groups to Solve the Seed Scarcity for the Poor Farmers in Manirevu Village

The farmers of Manirevu village were having acute with scarcity of groundnut and redgram seed. They had to purchase seed from the town market or from the middlemen for which they had to pay a high price and there was no guarantee of quality. AF staff noticed this problem and motivated the representatives of the existing 20 women groups (SHGs) from the two Village Organisations called Sai and Sailatha to establish a seed bank in the village itself which could also be a seasonal livelihood opportunity for them.

Later AF staff and group leaders organised a meeting for the farmers and discussed with them, and identified the farmers in need of seed, particularly the poorest farmers. They were formed into a seed user group. The VOs provided Rs.3, 00,750/- credit to the group for starting a seed Bank. (The group purchased 23,200 kgs. of Groundnut and 400 kgs. of red gram from the co-operative society). AF's Agriculture Officer helped them to buy good quality of seed. Then they supplied the entire seed to 48 needy farmers of Manirevu for a fair price. The planning and implementation of this activity was monitored by the Village Organisations. As a result:

* The needy farmers got quality seed, for a fair price and in time, on credit;
* They could repay the credit after the crop is harvested and sold;
* The group also made a reasonable profit from this activity.

The women group’s representatives in the Sanghas expressed their happiness for gaining reasonable profit in this process, while fulfilling the seed needs of poor farmers in the village. The farmers were immensely happy as they got good quality seed at a fair price in time on credit. They were also happy to repay the credit.

Gainful employment is the key for better living of the poor: the story of Mrs. Laxmi Devi, alone labourer in the family

Family Information

Mrs. Lakshmi Devi has been working as labour in Seeboi watershed, being implemented by AF/RDT
since six years. She is the leader for her 15 member labour group. She has been selected as leader since she has studied 5th class and "able to convince others'.

**Family condition before Watershed Programme**

Mrs. Lakshmi Devi -- Family head; Mr. Thippe Swamy -- Husband; Mrs. Thimmakka -- Grand mother; Shanthi -- Daughter -- Studying 8th class; and Chandra -- Son -- Studying in Pre Primary. Mrs. Lakshmi Devi was only earning member in her family. Her husband was not able to work because of his overweight, due to some disease. The family migrated many times from the village as there was no labour work throughout the year and faced many a hardship. They were not having enough food, clothes, house and other basic amenities. They had to depend always on others for their health and other small needs. And they were not able to cultivate their five acres of land due to lack of investment. They were under employed, and lived in severe poverty.

**Effective Use of Earnings from Labour**

Only Mrs. Lakshmi Devi worked in watershed programme for 100-120 days in every season and earned about Rs. 4,000/- per annum at the rate of Rs. 35-50 per day. She had earned about Rs. 25,000/- over the past six years. When the watershed works were not there, she went for agriculture labour work within the village and earned Rs. 20 to 25/- per day. Since the agriculture work was seasonal and not continuous, her earnings in the rest of 240 to 260 days was almost equal to her watershed earnings in 100 to 120 days. She was very wise in spending the amount for her family development.

* One buffalo was purchased in Rs. 5000/-
* Money lent for interest was Rs. 5000/-
* Spent a lot of money for the medical treatment for her grandmother and husband who often fell sick;
* Pebble bunding was done in two acres of her land with the assistance from Watershed Programme. She paid 10 per cent of the cost as farmer's contribution to the watershed committee;
* Spending money for her two Children's Education who are studying at Kalyandurg.

It was really interesting to note that her son who was about four years is sent to Lower Kinder Garden Private School, and her daughter is also studying in a Private School at Kalyandurg town which is 15 kms. away from her village.

That showed how much she liked to educate her Children! It is very unusual for a lone women labourer in the family to send her two children to a paid private school. The family is leading ‘a normal life’ even though severe drought conditions are prevailing in the area for the last three years.

**Change in Quality of Life**

Mrs. Lakshmi Devi expressed that lot of changes have taken place in their daily life of the family. They have now enough food, proper clothing and a place to live. They are cultivating their five acres of land by purchasing inputs viz., seed, fertilizer and pesticides. Food and clothing pattern is changed. They consume milk and curd that come from the buffalo. Their health condition is improved. Both the children are studying in good school. The family established good relationship with farmers and other people in the village and get due respect and recognition from them. Lakshmi Devi is an active member in labour groups and participated four times in a year in Shramadan activities. She said that she would like to participate as much as possible in making her village as a model village!

Mrs. Lakshmi Devi is a living model for other labour in the village in improving social and economic status of a family. Watershed programme is bringing a positive change in the lives of the poor (like Lakshmi Devi) through employment opportunities besides natural resources development. Mrs. Lakshmi Devi is positively motivating and inspiring the labour in the watershed programme.
She was not alone in this category. There are about 5000 such poor families who avail employment opportunities every year in the AFs eco-employment and watershed development programme. They are able to improve their living condition and overcome their poverty. They are able to gain respect and recognition and are able to live with dignity. They are able to create some productive assets, provide education for their children, care for their health, redeem from the bondages, repay the old debts etc.

**Livelihood Diversification Led to Improved Quality of Life**

Rangamma and her husband Obanna are living in Ragulapadu village of Uravakonda Mandal with their seven family members. Both of them are members in AF’s livelihood group. The returns from their five acres of land are very minimal due to frequent droughts. They took loans from the money lenders to meet their family needs like food, health and education of their children. They were struggling a lot to repay the debts and cope-up with drought. Previous year AF’s staff explained them the opportunities of getting more income by developing backyard poultry. Being a member in Velugu group Rangamma took Rs. 3,000/- loan from the group and started back yard poultry with 20 country birds. Today they have 120 birds in their farm. They invested the profits from the poultry on their land and increased their crop yield. With AF staff’s encouragement they bid the tamarind trees produce in auction for Rs. 30,000/-. They borrowed Rs. 20,000/- from bank and Rs. 10,000/- from Velugu group as loan on 12 per cent interest per annum. They harvested tamarind, graded and sold it for Rs. 47,200/- and earned a net profit of Rs. 17,200/- from tamarind business.

"We are very much thankful to AF staff for providing support by suggesting backyard poultry and tamarind business ... By joining AF’s livelihood group we are able to utilise many of the Government schemes and developed profitable livelihoods and solved our economic problems. Now we are in a position to provide higher education to our younger children." - Rangamma, Ragulapadu.

Now they are repaying their loans regularly. Rangamma has also started saris (ladies garment) selling business with Rs.5,000/-. She purchased 25 saris at Rs.150/- to Rs.300/- each from a wholesale shop and sold 20 saris with a profit of Rs.25/- on each sari. She earned a total profit of Rs.500/- and this time she want to increase the investment. She got a house sanctioned under State Government’s Housing programme. Now the family is leading an improved quality of life due to diversification of income opportunities.

**SHG Leaders and Farmers Benefit from Better Marketing Strategy: A Case Study of Gangavaram Village**

Lalithamma, Dhonamma, Mumtaz, Kamalamma, Shivamma, Lakshminarasamma and Erriswamy are the leaders of SHG groups of Gangaveram village in Kalyandurg Area. They discussed the problems in marketing the farm produce and the exploitation by the middlemen in their network meetings. They decided to explore all possibilities to get a fair price for the farm produce from their village. They went to agriculture market yard in Anantapur and learnt about marketing techniques and market prices. Then they created awareness amongst the farmers of their village on the market prices and the tricks played by the middle men in duping the farmers. They also discussed about the benefits and problems in self marketing. All the farmers gave their support to this group. Being members of Velugu group they took loan from the group and purchased 52 quintals of Bengal gram from the farmers for Rs.93,600/- at prevailing rates. Then they sold the stock for Rs.1,09,200/- at market yard after two months. They also appointed a three member committee for better transparency. As a result of this initiative:

* Farmers could get price for the exact quantity of their produce (they used to lose 8-10 kgs of their produce through defective weighing by the middle men);

* They did not lose 2-3 kgs. of their produce, which they had to give as commission (Riwaaj) to middlemen;

* They could get their money, immediately after selling the produce (The middlemen use to pay them in installments);
The SHG leaders earned a net profit of about Rs.14,000/-, which they shared amongst themselves @ Rs.2,000/- per person.

The farmers and SHG leaders are very happy about this. They said they will continue the practice in future and try to avoid middlemen altogether.

**Conclusion**

The detailed study indicates that the women are active in various developmental programmes and are proved to be a partner in the bread earning to the family. Watershed programmes gave scope for women to exhibit their leadership qualities. With this programme, to some extent, the rural face is, changing by stopping migration, mitigating the rural drinking water problems etc. The women participants are happy and vocal in conveying the researchers as to how best they could utilise the opportunities provided to their advantage and bring a meaningful change in their lives and it is appropriate to say that the programmes gave opportunities for women empowerment.

Women reported benefiting from the programme in various ways, from greater empowerment in decision-making (especially for those now serving on the watershed committees), to time-saving on household work by using bio-gas systems. Many also benefited indirectly from the programme, as the gender-equitable wages paid for watershed work led in some cases to less disparity in wages for other agricultural work as well. However, the sample size in the present study was too limited to address the question of how widely the benefits to women were distributed.

This is a micro-study and findings may not be treated as comprehensive and universal. This study leads to suggest macro level study across the country and the resultant findings would enlighten to take steps for a major policy decision.

Further the whole programme may be of no avail if there are no rains for continuously two years. The Watershed Development Programme is meaningful not only in the drought prone area but also in other normal areas as it would also, to some extent, help to raise the groundwater level which ultimately will be useful for the purpose of not only agriculture but also drinking as well. On the whole it is a worth continuing programme in the area of rural development.

**References**


**End Notes**

(1.) Accion Fratema, a non-governmental organisation, established in 1982, as a subsidiary of the Rural Development Trust (RDT), has played a leading role in watershed development in Anantapur District of Andhra Pradesh, by taking up several programmes to strengthen watershed development.

(2.) In India four-way classification (SC/ST/OBC/OC) is generally followed for undertaking development and welfare measures to segregate the society. While SC/ ST are considered to be the poorer sections of the society among the three categories, people from Other Castes (OC) caste groups represent richer section as compared to the other three sections of the society.

(3.) Rearing of young male sheep (He sheep): It is one of the most important income generating activities practiced by the women in the study areas (Rams are purchased at the age of 4 months and reared for 1 year).
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