ACCION FRATERNA
ecology centre
sustainable . human . nature

Fruits of
PARTICIPATORY WATERSHED DEVELOPMENT

A social activist walks through some watershed villages of
Accion Fraterna Ecology Centre

S M Basha
Human Rights Activist

Our Vision

1. Every farmer/farm labourer lead a respectable life with social equity, gender equity and human dignity, in an atmosphere of democracy and peace.

2. People and nature live in harmony with each other showing due care for sustainable environment and bio-diversity.

Our Mission

1. AFs mission is to organize and strengthen the organization of distressed farmers and farm labour for their empowerment, self-reliance, food and nutritional security.
2. AF is committed to work with small and marginal farmers and committed to promote Integrated Sustainable Farming Systems, with low external input and eco-friendly (as against high cost, high-tech, chemical based).
3. AF is committed to promote sustainable healthy environment and bio-diversity where people and nature live in harmony and support each other.
4. AF is committed to work with women and youth and promote Diversified Livelihoods including agri-processing, marketing and non-farm skill based employment.
5. AF is committed to work for gender, social equality, human dignity, and to create a responsible social environment with peace and democracy.
6. AF is committed to work with Government, like minded NGOs, Civil Society Organisations and individuals. In this process it is committed to strengthen and coordinate the role of different organizations, intellectuals, experts and individuals in the interest of social well being.
7. AF is committed to being a strong, dynamic, dedicated and sustainable organization. It builds itself into an organization, learning from experiences and always working for people's well-being. It strives to be positively influencing the society and changing itself to be relevant to the changing contexts.

Our Dharma

1. Concern for the poor
2. Work beyond duty
3. Pursuit of excellence in work
4. To reach as many needy people as possible

Our Core Values

1. We believe in social equality of all people and are particularly committed to the treatment of women, the disadvantaged and the poor with respect and dignity.

2. We ensure that all our policies and programmes have due consideration for sustainable environment and ecological balance.

3. We are committed to being gender-sensitive both within AF and in all our programs and interactions with people.

4. We are committed to working with Government and like-minded NGOs & CSOs in order to produce the best synergies in our combined and co-ordinated efforts.

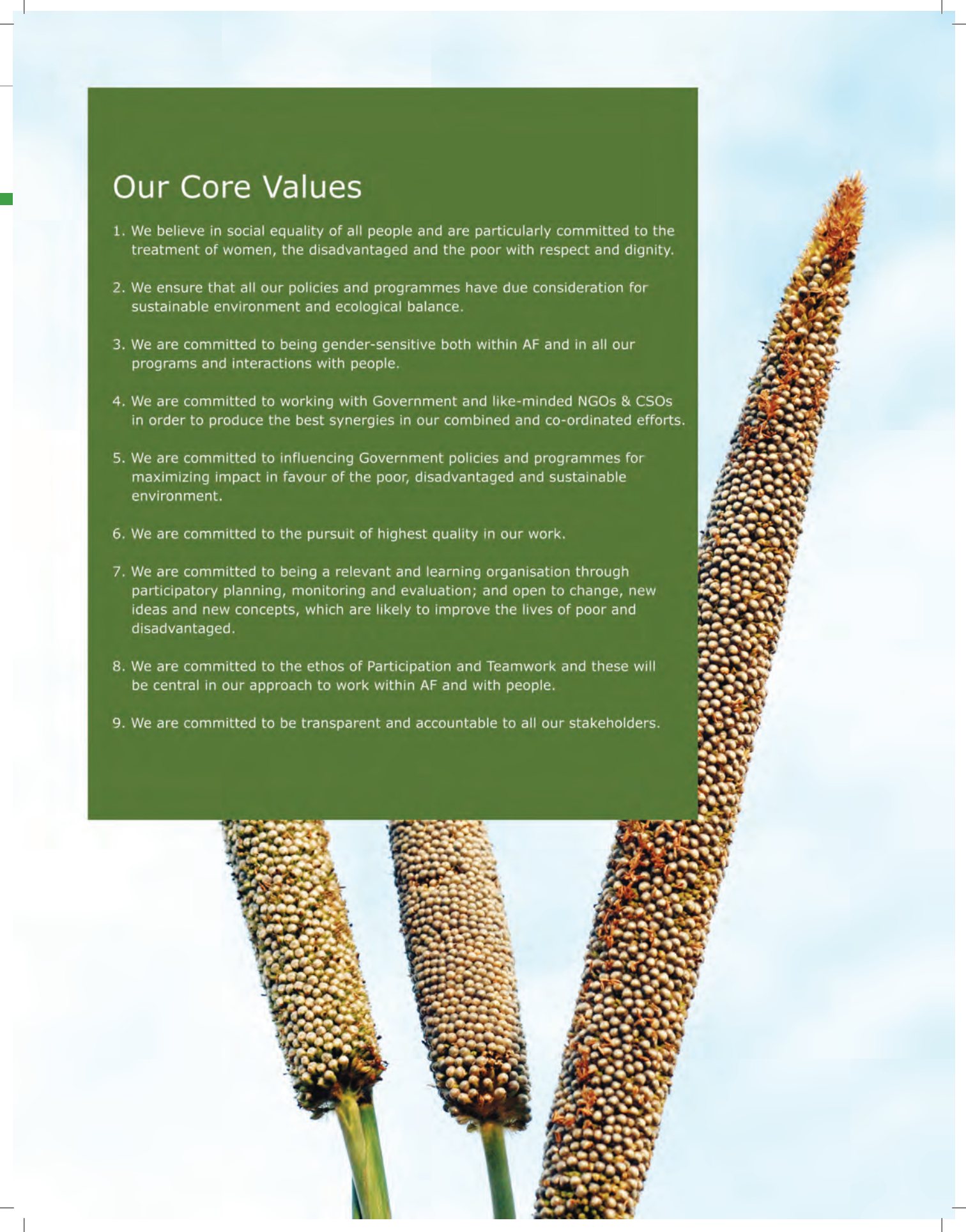
5. We are committed to influencing Government policies and programmes for maximizing impact in favour of the poor, disadvantaged and sustainable environment.

6. We are committed to the pursuit of highest quality in our work.

7. We are committed to being a relevant and learning organisation through participatory planning, monitoring and evaluation; and open to change, new ideas and new concepts, which are likely to improve the lives of poor and disadvantaged.

8. We are committed to the ethos of Participation and Teamwork and these will be central in our approach to work within AF and with people.

9. We are committed to be transparent and accountable to all our stakeholders.



Dr Y V Malla Reddy
Director
Ecology Centre, Anantapur

Interview

by S M Basha

Q What was AF's vision for the Watershed Development Programme?

My vision of watershed development is where every village has an atmosphere of democracy, peace and where every farmer/farm labourer lives in dignity with security of income every year. This is because Anantapur district is known for chronic drought-proneness and poverty on one side and factions, violence, groupism, tensions and domination on the other side. Our watershed programme was born out of a crisis and distress in agriculture that came in mid-eighties. If we look back, 1984, 85, 86, 87 were consecutive drought years and there was a terrible all-round crisis in the District at that time. AF had been implementing other developmental programmes in the district at that time like education, health, credit and community organisation programmes. But we found that because of severe drought conditions, whatever impact these other programmes had was getting wiped out. One saw large-scale distress migration of able-bodied people, children who did not go to schools, sicknesses that loomed large, starvation deaths, severe malnutrition due to inadequate food and so on. The women, children and the elderly suffered the most. Families were disintegrating because men were migrating to cities. Wife, children and elderly were left and men went in search of employment. Scores of social problems cropped up.

We realized that if we do not address the issue of drought in agriculture, all other programmes, however good, will not be effective. We felt that, first people here have to be able to make at least a minimal living to undertake any other development effectively. That is how we conceived this Watershed Development Programme - to create necessary conditions for the people of this District to be able to live in their own villages. So we wanted to create enabling conditions for agriculture to cope with the recurring droughts. And we wanted to create the required democratic and social conditions in each village where people can sit together and discuss peacefully all the issues affecting them; and where the marginalized poor and women can also take active part in the process of development. It should create a kind of confidence among all sections of people to live in peace, dignity and with income security in this area. That is what we wanted to achieve through Watershed Development Programme.

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Q Is your approach different from the already established watershed concepts of Mr. Anna Hazare, Rajendra Singh and others?

Yes, it is somewhat different. One important difference is that it is micro-level village-based watershed. When we say micro-watershed development programme, we focus on village as a unit in as much as a micro-watershed development itself is a unit. For us it is a combination of hydrological unit as well

as all the people living in the village. Two aspects we try to combine together. This is one important difference. Another thing is, it is different from Rajendra Singh (Rajasthan) model. What Rajendra Singh has done is that he took one stream or river and concentrated on harvesting of rainwater by constructing water bodies along the course of the stream. It can be one of the components in the watershed programme but cannot be called integrated watershed development. However, revival of streams through harvesting of rainwater by itself is very good. This has been done in Rajasthan. The people also participate in that programme.

Anna Hazare did another type of watershed development work at Ralegoansiddi. Anna Hazare certainly did extraordinary work in his village, Ralegoansiddi. He pursued holistic village development including soil conservation, rain-water harvesting, common lands development, ground water development, horticulture, agriculture, dairy, livestock, marketing of agri-produce, health, education and so on. He has done excellent integrated work. What people do not see is his struggle for decades to bring the people of the village together, build unity, build consensus on various village issues, organize and build village level institutions, build cooperation, bring the concept of social regulation ... This is a very big, long years of effort that caused holistic development in the village.

Certainly, it is outstanding work done by an outstanding leader of the same village continuously for over 30 years. Whereas ours programme is different from that kind of work. We are trying to see what ordinary farmers and farm labour can achieve in their villages. My impression of Ralegoansiddi is that it is the result of Anna Hazare's 30-35 years of personally dedicated work concentrating in just one village, that too his own village. Though it is a good model for village development work, the ordinary village people did not do it. Had the work of Anna Hazare been easily replicable, in Maharashtra thousands of villages would have become Ralegoansiddis by now. That has not happened. It is extraordinary work that is not easy to implement and replicate unless each village has a dedicated leader like Anna Hazare.

In AF what we tried to do was to organize and activate ordinary villagers in a short time, and across a number of villages at a time, so that they can do better and more. The men and women in these villages came together burying their differences, sat together, planned and implemented watershed development. Seeing one village, the other villagers also came forward for similar development work. As a result of this, more number of villages came forward and their living conditions have improved considerably as you have seen.

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Scale of the Programme

Perhaps ours was the largest watershed programme in NGO sector with over 100 village projects implemented at any given time. About 150 full time trained workers and professionals have been working in the programme.

Q What prompted you to adopt this different concept of watershed programme in Anantapur District?

We have a good understanding of what kind of watershed development work is relevant to Anantapur district. It is based on socio-economic and agro-climatic conditions of Anantapur District. We have kept in our view some predominant factors of Anantapur District, such as:

a) Anantapur district is a resource-poor arid region. It has very low and erratic average rainfall of 522 mm annually. It witnesses droughts in 3 out of every 5 years.

b) Anantapur district depends predominantly on rain fed farming. Ninety percent of the land and 80% of the farmers depend entirely on rain fed farming. Only 10% of the land is under irrigation, benefiting about 20% of farmers.

c) Anantapur district has predominantly small and marginal farmers with 90% of the farmers owning less than 10 acres of dry land.

d) The district is predominantly covered with red and shallow gravelly soils where moisture retention is very low compared to deep soils.

e) Anantapur does not have any worthwhile forest area or vegetation, and bio-mass is very poor.

So, if you take the above factors in to account, a watershed development programme should benefit the small and marginal farmers and rain-fed agriculture on a sustainable basis. Our Watershed Development Programme is designed to suit to these local agro-climatic and socio-economic conditions.

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Q What prompted you to implement the very novel idea of rain-fed horticulture in a low rainfall area like Anantapur?

It is an old practice but forgotten!

I do not think that rain-fed horticulture is really a novel idea at all. It is a very simple idea that once existed in the culture of the people of Anantapur. But forgotten. There are some fruit trees like tamarind and mango for ages in the district. Our forefathers had planted them and we are still enjoying their fruits. These two fruit trees survive in spite of all sorts of onslaughts of frequent droughts. This is a fact. How we have missed this simple living truth for so long is a real mystery! We all have missed it for hundreds of years. Sir Thomas Munro planted tamarind trees 200 years ago, even now people call them Munro thopes. Similarly, we can also find old mango trees in the district. Seeing all this, we believed that there are some very useful trees in the district that we can propagate and multiply. My good fortune is that our family owned a mango garden and a tamarind garden. They must have been planted at least 150 years ago by our forefathers. I am at least the fifth generation enjoying their fruits. The experts suggested that tamarind and mango trees can survive and bear fruit in the district provided they are initially established. Initially establishing means initially providing water for survival, say for three years, then they would survive on their own under rain-fed conditions. Normally they will take six to seven years for bearing fruit. So it has a long gestation period of about 7 years. Another important factor is that it needs relatively high investment in the beginning, which farmers could not afford. Long gestation period together with high initial investment have put-off farmers from rain-fed horticulture.

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A crisis turned into an opportunity

During the 80s and the 90s, there were very frequent droughts. The groundnut, which is a mono-crop failed more often. Consequently, agriculture in Anantapur ran into a crisis and farmers were in severe distress. We effectively used these distress and crisis conditions as an opportunity to motivate the farmers to go in for fruit trees. We asked the farmers as to why they are not getting groundnut crops. Groundnut crop dries even when rain is missed once. Then we asked why this mango tree did not dry when rains are missed once or even twice? They knew the answer that it can survive long dry spells. We designed the horticulture programme with the farmers in such a way that it enabled them to support initially for three years. The farmers' responsibility was to care for and protect the plants. We gave plants, labour for pitting and critical watering for the first three years. The farmers themselves made arrangements for watering the trees with tankers, drums on bullock carts or watering with pots. Some of them who do not have facilities, water the plants by carrying water pots on their shoulders. I remember one farmer from

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Settur area who came forward at first instance and really toiled for watering the mango plants. He had no water nearby up to one kilometre. The family carried water on their shoulders all the way for 3 years and made sure that 200 mango plants survived. Whenever I happened to see him, I could see his face glitter in spite of such hard work. After seeing such farmers responding, we got our confidence. Then we also discussed with the Government. It cannot be done by one NGO alone and it has to be scaled up to cover many farmers and all villages by the Government. The Government was not ready in the beginning. We proved to them that it is important for providing some income security for farmers. Then the District Administration was convinced and began to replicate on a large scale.

My dream for horticulture

My dream and my call for farmers has been to cover 30% of each farmers' land holdings with rain-fed horticulture. If a farmer owned 5 acres, at least 1.5 acres should be under rain-fed horticulture. I called more forcefully, particularly the small and marginal farmers, who are hard hit by frequent droughts. It is very simple logic that a mango tree can give them some income even in drought years, some assured income to the farmer.

Change in land-use pattern to a diversified land-use

The other dimension we wanted to bring in was diversity in the land-use. Farmers have been sowing in their entire lands only groundnut, which is a short duration seasonal crop. If a village had two thousand acres under rain-fed area, groundnut crop was grown in almost all two thousands acres. When monsoon failed, the entire crop and consequently the entire

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income of the village was lost. So I coined the slogan that every farmer and every village, should have 30% of the land brought under perennial tree crops. If a 10-acre farmer is using 3 acres of land for tree crops he is adding vegetation in the cropped area. It will add biomass and enhance the productivity of the lands in the area. When this is the situation in the village with 30% land under rain-fed horticulture covering all farmers, that village ecology and environment is upgraded and the village is drought-proofed. This was what we dreamt about. Now there are watershed villages with 20% to 30% of their land under fruit tree plantation. And we are thrilled to see these villages.

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From land productivity point of view, land use point of view, environmental point of view and income point of view we convinced the farmers to go in for rain-fed horticulture.

Q What role did farmers play in watershed development?

Our approach was, "Farmers as main actors in watershed development". We worked hard and created a participatory environment and organized appropriate forums for people's genuine participation. This process included building unity, cooperation and consensus-based decision-making. It had an inclusive process to involve women, labour and all other sections. Their participation was vital in decision making, prioritization, action planning and implementation. The whole operational system was totally transparent. The people themselves managed all the funds and activities at the village level.

The role of Grama Sabha, Watershed Development Committee and various User Groups were very critical in planning and implementation of the watershed programmes. Further, farmers' participation in terms of cost-sharing for various activities was an important highlight of our programme.

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We had seen earlier that the DPAP programs were top-down and technocrat- driven. The engineers and the contractors built the check dams and percolation tanks. The people had no role in planning and implementation. Similarly, the soil and moisture conservation works planned and implemented by the Soil Conservation Department. These works were excellent in some places. But they did not last because farmers had no role in them. We strongly believed that if farmers participated in planning and execution, the impact will be sustained.

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You have seen the works done by AF. They were maintained intact. I can confidently say that 80% of the works were maintained and sustained. Twenty per cent may have gone for other reasons. That was the role we wanted the farmers to play. It called for a serious change in the mindset for us as well as the farmers. First of all, it was difficult to convince ourselves that farmers have knowledge and have a role to play. We all tended to think that whatever we say to the farmers, they must accept. The farmers also think that it is the job of the NGO or Government and they have nothing to do with it. We tried to change our conventional mindset. We promoted a new pattern of thinking that farmers should be fully involved in the planning and their own traditional knowledge and ideas must be respected. So, the people's traditional knowledge and wisdom is highly valued by AF. Our approach was a good mix of people's traditional knowledge and wisdom combined with scientific knowledge. It had a good success rate. We could confidently say that farmers had a role in anything that was done.

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We have the pride of achieving 40% of cost sharing by farmers in cash for soil & moisture conservation activities. That was a marvellous achievement in terms of enlisting people's cash participation in addition to their role in planning, execution and quality management in work. As you know, in Anantapur district most of the farmers have small and marginal holdings and in spite of such poor conditions we could convince them to pay 40% of the cost!

Q **What, in your opinion, are the most important areas of impact of AF's Watershed Development Programme?**

Creating some hope in the villages

One of the important impact areas is creating some 'hope' among the farmers and farm labour. That was the time when open wells and bore wells dried up as the ground water was over exploited. A series of droughts occurred and groundnut crop failed more often. Agriculture, irrigated and rain-fed both, was failing the farmers. It had become a real gamble for the farmers. Such a crisis in agriculture caused severe distress to the farmers and farm labour alike. Under such circumstances our watershed programmes created some hope for the farmers and also for the farm labour, who otherwise would have migrated in distress._And the programme was spread across, covering over 100 villages at any given time. It is not an exaggeration to say that not a single labourer migrated in distress from our watershed villages! The watershed programmes created gainful employment for both men and women and equal

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Rain water harvesting and ground water development

We have done excellent work in rainwater harvesting. AF has constructed over 3000 water bodies. We have renovated all the traditional water bodies in watershed villages. We have constructed a series of check dams and percolation tanks on all the streams in the micro watershed. We can say under normal rains not a drop of water goes out of the lands in the village. It is the situation in about 100 watershed villages. Whatever rain falls in the lands of the village is harvested and stored within the village area itself. This is an important contribution our watershed programme has made. Consequently the ground water has recharged extensively in the watershed area. There by is a greater spread of ground water creating special equity in ground water availability.

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New bore wells have come up extensively even in the upper reaches of the watershed. And the old ones revived. Even the open wells, otherwise abandoned have been recharged. The number of bore wells has at least doubled as a result of the watershed programme. This contribution is very significant. Certainly, one thing I can confidently say is that more poor rain-fed small and marginal farmers have gained access to ground water. Earlier, only a few better-off farmers had that privilege. Some kind of social equity in utilization of ground water has come about.

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Diversified cropping and land use

The other significant impact we brought in is the shift, at least partially, from seasonal cropping pattern to perennial tree crops - that is horticulture. Our dream was to bring 30% of every farmer's cultivated area under rain-fed horticulture like mango and tamarind. Though our dream is not yet fully realized, we have made a significant achievement in this direction. Our watershed programme covered about 30000

acres with about 18 lakh fruit plants, benefiting about 20000 farmers. We have successfully proved that rain-fed horticulture is very much feasible. You have seen it yourself and documented it in this report. So I don't need to say more on this aspect.

A democratic and peaceful environment in villages, free from violence and tensions

You are aware that Anantapur villages are strongly divided by factions and groupism and apposed each other violently. Another important contribution is that the people in every village have come together to work in watershed programme and created a democratic and peaceful environment in the villages. They would come and sit together, lead the whole village and manage the watershed programmes. It is our major social achievement. Many people said that implementing the watershed development programme is difficult in the villages because of factions and groupism. Then we decided to go to villages and sit together with all the villagers and talk to them. We showed them how in other villages they buried their differences and came together. We told them that this is the program that all of them must participate in as it is about their village development and is a question of people's livelihoods. We were able to convince them. Later, we could see a tremendous change in the attitude of all the people.

It is our major social achievement. Many people said that implementing the watershed development programme is difficult in the villages because of factions and groupism. Then we decided to go to villages and sit together with all the villagers and talk to them.

One outstanding example is Bhanukota village, which is well known for violent factionalism. Though they had violent factions and party politics, they came and sat together for the watershed programme and lead the programme with open mind. They participated objectively beyond factions. Actually, one correspondent of The Hindu came to visit as he had heard about Bhanukota factions. He visited that village and was very surprised at how they worked together, and wrote a good article about the village. There are many villages like that where democracy and peace was restored because of watershed programme, and it is sustained in the post-programme period.

Increased the bargaining capacity of labour

The best contribution we made for the farm labour was a substantial increase in their wages and an improvement in their bargaining capacity. While implementing the programme, the labourers were paid as per the Government schedule of rates for the work done by them. The schedule of rates is much higher than prevailing agricultural wages. Consequently, the labourers began bargaining for higher

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wages with farmers. The labourers felt empowered. In watershed programme, the labourers worked in groups, not individually. This culture of group work spread into agriculture. Consequently, instead of individuals working on pro-rate daily wages, they demanded a work contract. The work contract is like a 10 acre groundnut harvesting, a labour group bargain a lump sum contract for it. This kind of work contract system has taken away the feudal relations of the lord and the serf. It has restored human dignity to the poor.

Women's leadership development

The other significant achievement was the emergence of women's leadership in decision making at family and community level. Our policy was that at least 50% of the members of WDC should be women. Thus, women got an excellent opportunity to participate in decision making for watershed activities and in planning and execution of works like soil conservation, check dams, horticulture, crop diversification, kitchen gardens, bio-gas, farm forestry, smokeless chulhas, backyard poultry, inter-cropping, etc. These activities offered women an opportunity to participate in decision making at the village level and at the family level. Mono-cropping pattern of groundnut crop did not leave much scope for anyone for any decision making. But when crops were diversified to rain-fed horticulture and food crops, there was better intra-family consultation process, and women emerged as advocates of bio-diversity and crop diversity.

The leadership role of women emerged in decisions regarding cropping choices. They are able to grow crops of their preference like millets, pulses and vegetables. Earlier, men did not count on their ideas. Now the men are willing and able to see the strength in the ideas of women. We had some watershed villages where the (WDC) Watershed Development Committee members were all 100% women. They totally managed the watershed development programmes. Men in those villages respected the leadership of women

and cooperated. The all women WDCs did very well. Mallapuram and Kundurpi are the best examples of outstanding leadership of women in watershed development.

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Q What is the impact of AF's watershed programme on other NGOs and Government Watershed Programme?

Our watershed development programme has contributed significantly to the watershed practice and policy at the State-level and at the National-level also. Accion Fraterna itself has played a key role in formulating watershed and rural development policies. I was a member in the Andhra Pradesh State Level Advisory Committee of Watershed Development. I was a member of Andhra Pradesh Water Conservation Mission, which was chaired by the Chief Minister himself. There was a national consultative group consisting of Anna Hazare, Rajendra Singh, Vilasrao Solanki, Anil Shaw and a few others who are involved in watershed programmes. This was an informal national network to influence policy changes at the national level. Our watershed practices and field experiences contributed to the progressive changes in policy guidelines. For example, about contour-bunding. Contour-bunding earlier was not a priority activity in the watershed programme. Our experience showed how important contour-bunding was in watershed development.

Similarly our experience was the key for formulating guidelines for dry land horticulture activities. The conventional approach to horticulture was always associated with irrigation facility. The experts did not think of rain-fed horticulture. Another important contribution was, the entire APRLP (Andhra Pradesh Rural Livelihood Project) was formulated on AF's experiences. I was one of the key consultants in formulating the project. Recently, the Government has appointed Parthasarathi Commission to review and revise the watershed guidelines. He visited

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our programme for two days. The main focus of his visit was to see how watershed committees and Gram Panchayats can work together. We have shown a model, where Gram Panchayat and Watershed Development Committee work in tandem and play complimentary roles for better transparency, accountability and effective people's participation in the watershed programs.

Important visitors to our watershed programme

The then Chief Minister of Andhra Pradesh, Mr. Chandra Babu Naidu, visited our Watershed Programme. The Central Ministers, Mr. Sathyanarayana Rao, Mr. Dattathreya and Agriculture Minister of A.P., Mr. Vadde Sobhanageswara Rao, also visited our watershed programme. T. Hanumantha Rao, a renowned specialist in water management visited for three days to study our programme. He was highly impressed with the people's participation in the watershed programme. Nearly 30,000 other visitors from NGO and Governments across the country have visited our watershed programme. They saw our programme and we also have learnt from them of their experiences. We also visited and learnt from Ralegaonsiddi and Myrada Watershed Programmes.

The then Chief Minister of Andhra Pradesh, Mr. Chandra Babu Naidu, visited our Watershed Programme. The Central Ministers, Mr. Sathyanarayana Rao, Mr. Dattathreya and Agriculture Minister of A.P., Mr. Vadde Sobhanageswara Rao, also visited our watershed programme.

Thus, it has contributed significantly to the practice and policy of watershed development of Government and other NGOs in the country.

Q Are you satisfied with the success of the watershed programme? And what are the future priorities?

I am satisfied. But still a lot needs to be done in this direction. What I am satisfied about at the moment is that we evolved an effective watershed programme that can benefit rain-fed farmers in drought-prone arid areas. This is beyond doubt. Now it has to be scaled up and scaled-out with a passion. However, our watershed programme was strong in measures aimed at upgrading and stabilizing the natural endowment. Now a lot more needs to be done on sustainable agriculture. The present conventional agriculture is very high tech, high chemical-based and high cost intensive. This has to change to a Low External Input Sustainable Agriculture (LEISA). It calls for a concerted effort. These days people

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do not get involved in the time consuming long-term programmes. But there are no shortcuts for rain-fed farmers in drought-prone areas.

Our present priorities and strategies

The present priorities are built on the past achievements of our watershed programme. In other words, it is up-scaling on the natural resource endowment created by the watershed programme. They include the following:

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Our Strategic Priorities for 2007-12 are worked out keeping in view the situational analysis, the SWOT analysis and our vision & mission. They are:

1. Enabling the farm labour and rain-fed farmers to effectively access the Government programmes like NREGP and other basic services.
2. Protecting rain-fed small and marginal farmers from the onslaught of high-tech, high cost unsustainable conventional paradigm of agriculture through Small Farmers Cooperatives, Sysamitra Groups and their Samakhyas.
3. Intensifying and expanding the campaign for LEISA (Low External Input for Sustainable Agriculture) including NPM (Non-Pesticide Management) in order to
   (a) Create an Integrated Sustainable Farming System (ISFS) with the sub-systems of diversified land use, crop diversity, dairying, livestock etc.
   (b) Reduce the cost of cultivation and increase the net earnings from the farming system.
   (c) Mitigate the risk of drought; prevent pollution of natural resources to make agriculture ecologically sustainable.
   (d) Enhance the farmers' capacity to cope with drought.
4. Promoting additional livelihoods like Dairy & Livestock Management, through credit support, connecting with banks and other financial institutions and facilitating better marketing opportunities, in order to spread the risk and provide a safety net of income.
5. Enhancing post-harvest returns through value addition of agri-produce and better marketing by establishing linkages and strategic alliances with the government, financial institutions, private sector firms, etc.
6. Equipping youth, both girls and boys, to join mainstream (Modern Economy) in the non-farm sector through

a) Job-oriented Skills Training for Youth

b) Entrepreneurship Development

This has to be done in order to gradually reduce the pressure on agriculture, diversify the occupational base and create upward occupational mobility.

7. Promoting and emphasizing gender and social equity in the programmes and to enhance the role of women in family decisions and equitable opportunities for socially disadvantaged.

8. Operationalise the above programme priorities, influence and catalyze change, build democracy and peace in rural areas by:
   a) Promoting Small Farmers' Cooperatives and developing their capabilities and leadership,
   b) Working in collaboration with existing village institutions like SHGs, VOs, Raithumitra groups, etc.,
   c) Collaborating with Government for effective implementation of Government programmes.

9. Promoting Advocacy and Policy Promotion by networking with CBOs, NGOs & CSOs and creating a voice for the people for favourable policies and pro-people programme implementation.

FRUITS OF WATERSHED DEVELOPMENT

From Parched Lands To Lush Green Orchards: A Tireless Pursuit

by S M Basha

In January 2008 I had the opportunity to travel from Anantapur to villages in Kundurpi Mandal in Kalyandurgam area along with Dr. Malla Reddy, Director, A. F. Ecology Centre. Dr. Malla Reddy was to attend a farmers' campaign on sustainable agriculture jointly organized by the farmers of the villages of Kadarampally, Kenchampally and Mahanthapuram of Kundurpi mandal. When Dr. Malla Reddy invited me to join him on this trip I readily agreed for two reasons. Firstly, it was a few years since I travelled in that part of Anantapur and was curious to see if there is any change in the villages. Secondly, I was told that the farmers in the region are taking to sustainable agriculture practices by following 'Non Pesticide Management', NPM for short. I have been a proponent of the theory that use of chemical fertilisers and pesticides would increase moisture stress on crops when there is a dry-spell of about 25 to 30 days between two consecutive rains. The plants would either wither away fast or would be more susceptible to diseases and pests. This was my hypothesis based on many years of observation of agriculture practices. I strongly believed that there is a direct correlation between reduced use of chemical fertilizers and pesticides and revival of sustainable agriculture.

While travelling, I was filled with these thoughts and reflections. To my surprise, I was welcomed by lush green orchards of mango, sapota and other fruit trees, laden with bloom on either side of the road. This was not just in one isolated village. Village after village had patches of green orchards as far as one's eyes could see. I was surprised and delighted at such a visual treat. Normally during January in Anantapur region, all the dry lands would be barren, exposed with rock out-crops, pebbles and crop residues as the crops would have been harvested by then. The scenario would be reminiscent of a village ransacked by an enemy army. Only the hills and rocks would have stood out boldly in the parched area. There would have been no visible greenery apart from the small thorny bushes. There would have been no place to take shelter from the scorching sun.

About 10% of the land in the district is under forests, the Government statistics claim. However, most of the greenery in these 'forests' is nothing but thorny bushes. Over the last 25 years or so, the Government has spent considerable amounts on social forestry, with little impact. Attempts were also made to increase the green cover by motivating the farmers to take up fruit plantation for secured incomes. However, the drastically reduced groundwater table forced some farmers to cut down their orange orchards. In 2002-03, some teams of CSOs and NGOs visited the villages extensively to understand the drought situation. The drying up of 30 to 40 years old mango and tamarind trees agitated them. The people of the district were confident that the neem, mango and tamarind trees could survive the worst of droughts. The drying up of even these hardy trees is an indication of the worsening ground-water table and the intensity of the prolonged drought. We were worried that, not just the water for irrigation, even drinking water would become a major problem resulting in large-scale misery of the population across all sections.

Under such circumstances, lush green mango orchards and occasional other orchards like sapota and guava were a sight for sore eyes. It is true that the year 2007 saw good rains in the district and that the farmers were happy as the crop yields were promising. But these orchards did not come up in just one year. They came about because of AF Ecology Centre's development programme. I understood that it is

the result of a long, untiring and consistent struggle of AF Ecology Centre and the farmers in the region. It was difficult to believe that a watershed development programme can bring about such a change. The farmers' bold effort to confront droughts and the harsh environmental conditions is commendable. Anantapur farmers are known for their hope in the future and blind courage. I strongly felt that AF Ecology Centre's consistent efforts together with the hope and courage of the farmers was at the core of this success in greening their lands with orchards.

To explore these aspects further, I spent some days with farmers in these villages in February and interacted with them extensively in a free and open environment, to know their experiences and feelings.

UNDERSTANDING THE IMPACT OF WATERSHED DEVELOPMENT PROGRAMME

Irrigation and fruit orchards were rare in Kalyandurg area because of eroded soils and low ground-water levels. I was curious to find out how such an area is now filled with orchards like mango and sweet orange across the villages.

AF has implemented watershed programme in about 100 villages in this area over the last 20 years. So, this post-programme assessment is being done after 5 to 10 years of programme implementation. As it was not possible for me to cover all the villages, I selected villages with more number of orchards. I took along with me a village level AF staff who had good rapport with the villagers and had played a key role in planning and implementation of watershed development at the village level.

Before visiting each village, I gathered basic information (from the concerned village level AF staff) about the socio-economic conditions of the village like the social divisions, agricultural conditions, ground-water situation, water bodies, irrigation, activities implemented by AF and how they responded to the opportunity of watershed programme.

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I interacted freely, informally in an open-ended manner with the farmers in each village in the watershed area, particularly in the zone of influence of the check dams and other water bodies. And with farmers, visited the watershed treatment area and series of check dams constructed in the village. I got first hand from the farmers, their description of the land and agriculture in the village before and after the watershed measures were implemented. I could see the changes that have taken place on the ground after the programme. And the farmers lucidly explained the impact it had in improving their lands and their lives. My free, frank and open interaction with the farmers on their experiences both as individual farmers and as a farming community revealed their opinions, feelings and personal experiences. It was also surprising to see the enthusiasm and the excitement with which they participated in the interviews and discussions, 5 to 10 years after AF has withdrawn from the villages.

I covered about 20 villages for understanding the impact.

Post-programme impact of Watershed Development Programme

All these villages have been dependant on low and scanty rain for their agriculture. It is chronically drought-prone. The wells and bore wells are very few and irrigated agriculture under them is limited. The traditional tanks that provided earlier surface water irrigation are mostly in disuse and are also not very dependable. Competition for groundwater has increased immensely and water-based conflicts began appearing at all levels, even between brothers! Over time, groundnut has become the predominant crop. As this crop does not need cooperation between farmers it makes the farmers solo-operators. The role of women in decision-making with regard to agriculture is also very minimal. This is the context in which conflict-based politics took root in villages rather than development-centred politics.

This region is spread with hills and hillocks. There is not much soil on these hills to support tree growth and hence there are no trees. In agriculture lands, except for the low-lying lands the rest of the lands are strewn with pebbles and rock outcrops. As the topography is rolling with multidimensional slopes, the top soil got eroded over the years. The productivity of these soils is very low. The people of this region are dependant more on Karnataka than Andhra Pradesh for employment as well as marketing of the agricultural produce. There are some big farmers holding 50 acres of rain-fed land. But their economic situation and lifestyle is equal to that of a coastal farmer with 2 or 3 acres. Under canal assured irrigation, farmers bring in 2 to 3 crops in a year. In Anantapur, farmers under rain-fed conditions are able to bring in just 3-4 crops in 10 years! That is the intensity of droughts in Anantapur.

AF Ecology Centre began implementing the watershed programmes since 1987 in the mandals of Kalyandurgam, Setturu, Kambaduru, Kundurpi, Beluguppa, Atmakur, Kuderu. Before this, AF Ecology Centre was involved with facilitating education, health and other programmes for the benefit of SC and ST communities. It stood by the small and marginal farmers during the periods of drought. It encouraged unity among the villagers. It facilitated provisioning of drinking water through community action. It provided livelihood opportunities for women. With all these activities AF Ecology Centre has secured the trust and confidence of the villagers.

Participatory Watershed Development: Farmers, the main actors

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From the beginning since 1987, farmers participated in the planning and execution of Soil and Moisture Conservation Programme. AF implemented the Soil and Moisture Conservation Programme extensively as per the need of each farmer, based on their own traditional knowledge and wisdom. Similarly, it undertook construction of 1811 check dams, 928 farm ponds and repair of 399 tanks with the objective of harvesting rainwater and improving ground water.

The staff of the Ecology Centre worked closely with the rural communities and increased their unity and participation in the programme. They created awareness among the farmers and farm labour about the sustainable use of natural resources. With the drying up of the open wells and bore wells the few old orchards also started vanishing. On the other hand the check dams that were built with the participation of farmers started yielding results the very next rainy season. The wells and bore wells in the zone of influence of the check dams got rejuvenated. Some check dams were built at as low a cost as rupees 50 to 60 thousand, but are recharging many wells even after several years of their construction without any need for repairs or maintenance. These have not only rejuvenated the existing open wells and bore wells but also gave scope for more bore wells. With this the area under irrigated agriculture increased. The investment on the check dams bore fruit very soon with increased crop production achieved by the farmers. Even during the low rainfall years, the water level in the wells and bore wells surrounding some check dams did not go down. This was achieved through a systematic participatory approach to land based activities like soil conservation and rainwater harvesting.

Dry-land horticulture as a drought-proofing measure: A challenge taken up!

While the land and water development activities were being implemented, AF felt the need for change in land-use and cropping pattern. So it took up the challenging task of promoting fruit trees in dry-land areas. It was a very big challenge, given the harsh agro-climatic conditions. As a part of this, AF managed to convince farmers and got about 20 lakh fruit trees planted by about 30,000 farmers in 30,000 acres.

This had a tremendous impact on the environment, agriculture and on the lives of the farmers. The impact has been slow, steady but sure. In Anantapur district, where even annual crop yields were not certain, it might have seemed audacious to promote new plantations of fruit trees! During the last several

years the rainfall was more erratic and less than normal. To motivate farmers to take up new fruit plantations in such a context is no doubt an onerous task. I posed this question to Dr. Malla Reddy who is the Director, AF Ecology Centre: "If the programme failed, you would not only face the wrath of the farmers but also lose the goodwill gained over the decades. What made you to take such a bold step?" Dr. Malla Reddy, who hails from a farming family, has years of experience and understanding of both the conditions as well as the farmers of the district. He explains: *"In Anantapur district, the mango and tamarind trees stood alone here and there as an inspiration. They survived all the adverse weather conditions and still yielded. As a farmer myself, it is common knowledge for me. If a farmer can take care of these trees for the first 2 to 3 years by giving 'life-saving irrigation', later they will take care of the farmer. Later, the farmers can get regular income without much investment. For secure income in the long run, the farmers have to go in for perennial trees along with annual crops. In the years when the groundnut crop does not yield due to failure of rains, at least the fruit trees would give them returns. Cultivation of fruit trees increases crop diversity as well as diversity in land-use pattern. With the staff who have imbibed the values and philosophy of AF working with dedication, we were ourselves convinced and in turn could motivate the farmers to take up the challenge of fruit plantation. Very few plants died where farmers have worked hard to take care of the plants. Only where there was negligence on the part of the farmer the mortality was high. It is this conviction of mine and that of our staff that lead to the bold step."*

The staff worked hard to convince the farmers to take up plantation of fruit trees like mango, tamarind. The trust that the AF enjoys among the farmers and the service motive of the staff played a key role in

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achieving this objective. AF took all the care to provide quality seedlings to the farmers. It negotiated with the nurseries for good quality seedlings at very reasonable rates. Out of the cost, the farmers had to bear only rupees to two to five as their contribution. The farmers themselves did the pitting and planting for which they were paid rupees ten per pit. For two years, incentive was also paid for watering the young trees. The SC and ST farmers were paid rupees two per plant per month and others were paid rupee one per plant per month for watering. With this small incentive, the farmers were able to protect their plants while being gainfully employed in their own fields. Those who did not have any water sources in their own land transported water from village water bodies one or two kilometres away. For transporting water, some of the families used bullock carts, whereas those who did not have bullock carts carried the water in pots manually. Water was also drawn from the surrounding wells and bore wells for this purpose. The neighbouring farmers, who had water available, provided enough water for survival irrigation of fruit plants free of cost. During droughts many farmers faced different types of problems and issues. It was as like a fight against nature. These hardships in the end resulted in creating oases of greenery amidst arid dry lands. Here are glimpses of some of the experiences.

Lakshmampalli village of Setturu Mandal

This village has about 325 families, out of which 100 families belong to the SC community, 125 to BC and 100 to OC. There are about 80 families, which are landless. In this village, about 20 families who did not have any access to irrigation planted and took care of the plants by transporting water. They now have about 200 acres of mango plantation.

The story of Gangappa's family

Roddu (road) Gangappa is known by this name because he had worked as a gang labourer in road laying work. Now he and his wife are known for the hard work with which they have developed their agriculture. They have done several experiments in raising fruit trees. The husband and wife team worked hard to increase their fruit tree plantation from 10 acres to 30 acres. Initially they raised a mango orchard in 10 acres. At that time as they did not have any water source in the field, they would carry water from long distances for the survival of the trees. Later they dug bore wells and now they provide water to the trees using drip irrigation system. While the trees were small they did inter-cropping. In part of the area, the family has planted groundnut and in another part, cultivated paddy for home consumption. They raised papaya as an inter-crop in about 5 acres.

Gangappa avoided the use of costly and poisonous chemical fertilisers. Instead he used farmyard manure and vermi-compost. Due to the use of organic manures the trees and crops are generally free from diseases and pests. Further, the fruit trees have grown uniformly. Gangappa has successfully grafted 3 to 4 varieties of mango on to a single mango tree. He has done this in about 7-8 trees. The mango orchard is bearing fruit since the last three years. It is wonderful to see one mango tree bearing 3 or 4 varieties of mangoes. His annual income from the mango orchard started from rupees 30,000/- to more than one lakh rupees last year. From being the owner of a patch of dry land, Gangappa has made

slow and steady progress to being the owner of a sustainable and well-yielding orchard. The trigger point for this was the watershed development and rain fed horticulture of AF Ecology Centre.

The story of Kariamma

In the same village, 13 SC families also took to plantation of fruit trees, each covering 1 to 5 acres. Kariamma's is one such family that benefited. Kariamma's husband died leaving her with a large family of 5 sons and 3 daughters. Though they have 10 acres of dry land, they all worked as agricultural labour. They have grown fruit trees in 5 acres under the Watershed Programme. Kariamma gained employment also in the process of taking care of the plants. She worked very hard with her sons and made it a point to protect, water and save the trees. Soon they were able to dig a bore well and start cultivating paddy and groundnut along with the fruit trees. Now the family is fully involved in agriculture. Kariamma recalls that had the Watershed Programme not encouraged the fruit trees, they could not have gone for the bore well and would not have become viable farmers cultivating their own land, and living a decent life.

Tippamaiah is one of the first persons to plant fruit trees in the village and set an example for others in the village. Enduring severe hardships, he has transported water from a long distance and took care of 100 fruit trees. Later he got a bore well of his own. Now he is able to cultivate diverse crops. He

has also adopted the bio-pest management practices for the crops. Another farmer, **Obaiah** successfully grew 300 mango trees, which have started yielding since the last year.

In the same village a BC farmer by name **Pataiah** is cultivating mango, tamarind and sapota trees in an area of about 100 acres. As the 100 acres area is a contiguous block the fruit garden looks like a forest rather than a farm. People would not dare to enter the plantations alone. One reason for this is the presence of wild boars in the orchard, and

people particularly fear the wild boars as some times they turn violent. The age of fruit trees ranges from 2 years to 8 years. In another 4 to 5 years the area is bound to resemble a thick "fruit" forest.

Integrated Watershed Development programme included stabilisation of the natural resources like soil, water and vegetation as well as production enhancement measures like horticulture. Conservation of topsoil and improving the ground water resources were two of the most effective impacts on stabilizing the environment. Unlike annual crops, horticulture (fruit tree plantation) had the most effective impact on enhancing production and also created more dependable incomes.

Yerraborepalli village of Setturu Mandal

In this village a check dam, known as Kuntavanka check dam, was constructed under the Watershed Programme. Prior to the construction of the check dam there was no reliable ground water source in the region. Now 12 farmers in the zone of influence were able to drill bore wells, which yielded abundant water. The farmers happily informed that with the availability of water they were able to develop fruit orchards in about 200 acres.

The village has about 220 families with BC, SC and OC communities. The cultivated area under the village is 2600 acres. The Watershed Programme provided all the families with 50 to 80 fruit trees each. This is the village where all the SC families have 50 to 80 fruit trees each. It is estimated that the mango plantation in the village is in about 360 acres. All the farmers initially had to carry water over long distances to water the plantations. Later, few farmers dug bore wells and are watering through drip irrigation system. Even today some farmers carry water in small tankers on bullock carts. The plantations are of 4 to 6 years age. Some of the mango and sapota plantations have started yielding this year.

The President of Village Watershed Committee is **Mr. Rammohan Reddy**. He has a mango orchard in 20 acres. He has also planted sapota trees. He has drip irrigation system too. In the initial years, Mr. Reddy also transported water for the plants. Similarly, **Hanumanthappa** has an orchard of 20 acres, which is five years of age. **Onnurappa** of SC community has 5 acres of orchard and **Smt. Yerramma,** 17 acres. Another Hanumanthappa has orchard in 2 acres and he continues to transport water for the

plants. Similarly, **Jagatappa** who has about 60 mango trees in one acre and is dependent on transported water for irrigating the plants. **Basappa** has 65 plants and **Hanumantharayudu** 120 plants in 2 acres. Both of them have to transport water over a distance of 2 kilometres.

The story of Marenna 's family

In the same village **Marenna**, a farmer belonging to the BC community, has 15 acres of land. This land is far from the village and is covered with heaps and hillocks. There is no opportunity for digging a bore well. Marenna has three sons, who also work on the land. After taking up fruit tree plantation they worked very hard to water the plants. They did not even have bullocks and cart for the purpose. So all of them carried water in pots over their shoulders. One of the daughters-in-law was pregnant at that time but she too carried water through the hillocks for watering the plants. The challenge the family faced in this process was acclaimed by one and all in the village. Marenna also narrates this experience like a hero who has conquered the world. It may not be an exaggeration to say that it is difficult to find such diligent and hard-working farmers in any other district. The farmers in the district cultivate their lands in tough conditions of adverse and degraded environment. Marenna and his family members are a legacy of this tradition of fighting against drought.

Vankabanda check dam - completed at a very low cost, was a big boon!

The distinctive feature of Vankabanda check dam in Bandameedipalli village is that it was completed about 5 years ago at a very low cost of rupees 60,000/-. The Watershed Development Committee took up the construction of the check dam on the suggestion of the farmers and with their active involvement. Before the check dam was constructed, Veeranna's Open well nearby had totally dried up and was abandoned. The area was dotted with dried up bore wells.

Fortunately, it rained the very next day after the completion of check dam. The rain-water got collected into this check dam and with this Veeranna's well got rejuvenated filling it with water. The bore wells in its zone of influence also got recharged. At present, there are 6 bore wells and one open well in the zone of influence of this check dam. Since then, none of the bore wells failed the farmers and they are happily cultivating their lands. When asked about the check dam, the farmers were eager to share their experiences. The villagers consider the check dam a big boon for their village.

Nijavalli village - progress through Watershed Development

The villagers of Nijavalli village in Kundurpi Mandal are known for their unity. With the help of AF Ecology Centre they have taken up several village development initiatives. Before the watershed development was taken up the ground water in the open wells and bore wells was very low, which would dry up during the summer. While implementing the programme they were trained in a participatory approach to work in cooperation and consensus decision-making. P. Nagaraj, Chairperson of the Watershed Development Committee, says that the same spirit of cooperation is continues to this day.

The watershed activities were completed in the year 2002. Soil and Moisture Conservation measures were completed in total cultivated area and 14 check dams for harvesting rainwater were built under the programme. Under each check dam, the farmers dug 4 to 5 bore wells and increased their irrigated land as well as agri-production. The villagers together demanded the Government for a high school. For this they bought one acre of land and donated it to the Government through the Watershed Development Committee. The villagers themselves constructed two big common sheds as community assets for earning income for the village. These are leased out for rupees 24,000/- per year for rearing silk worms. The money is used for various development activities in the village, including repairs to the dilapidated temple.

At one time the village had a large number of tamarind trees. The villagers again have taken up tamarind plantation in the common lands and are protecting them. The village at present has no scarcity of ground water. Mulberry, a high value commercial crop, is cultivated under bore wells for rearing silkworms. This is creating continued employment for the landless labourers also. The villagers said in unison that with the guidance of the AF they are 'marching ahead' in their lives. The village, with the majority belonging to a BC community, is hard working and united.

Battuvanipalli is now a "Mango Forest"

Battuvanipalli village is in Kalyandurg Mandal. The watershed activities in this village were completed

in the year 2004-05. The watershed programme motivated the farmers to take up fruit tree plantation. The programme succeeded in grounding 220 acres of mango trees. The support provided by the AF Ecology Centre for horticulture was put to maximum use in this village. Initially, the farmers had to carry water from long distances by various means to irrigate the plants. With dedication and hard work of the farmers most of the plants survived. As of March 2008, most of the trees are fully laden with flowers and turning into fruit.

When mango saplings were supplied in such large numbers there was a possibility that all were not of good variety or good enough quality. High mortality of saplings might seem natural under Anantapur's harsh agro-climatic conditions. But AF Ecology Centre has carefully selected credible nurseries for supply of the saplings. As a result, the mortality of saplings was negligible and the farmers were not adversely affected. The farmers were happy that the organization had supplied them with not just good variety mango saplings but also good quality saplings.

The story of Srinivasulu

Srinivasulu planted 160 mango saplings. The trees are nine years old and this is already the third harvest. He is getting an income of not less than rupees 10,000/- per acre. He is earning additional income through vegetable inter-crop of chillies, okra, radish, and others between the mango trees. Though earlier he had to fetch water from a long distance for the mango saplings, he could soon get a bore well dug and provide for drip irrigation. The Watershed Development Programme constructed a check dam in the higher reaches of his plantation in 2000. After the construction of the check dam the wells are now rejuvenated with water and flourishing with greenery around. One particular well has plentiful recharge of water and about 6 acres of paddy is being cultivated with this water. Eleven old bore wells are now replenished with abundant ground water.

Another farmer, **P. Lakshmanna,** has planted 260 mango trees and protected them. Initially, he too had to transport water, but now has a bore well and drip irrigation system.

In all 9 check dams were constructed under the Watershed Programme. As a result, the farmers could drill bore wells for irrigating their mango trees. Another farmer **G. Timmarayudu,** planted 1600 mango saplings. He uses vermi-compost. The plants are very healthy and lush green in colour.

Hanumantharayudu has planted 350 trees in 5 acres in 2005. To this day he provides water to his mango plants from a tanker brought on a bullock cart. Earlier he did not even have the bullocks and the cart. With the income from the groundnut this year he has bought the bullocks and the cart. In future, he plans to dig a bore well and set up drip- irrigation system. Like him, **G.C. Thimmarayudu** and his wife also bring water for the 900 mango trees in 15 acres of their land on a tanker on their bullock cart. They do not engage any labour for this .The husband and wife diligently water their plants.

Horticulture has multiple benefits

The horticulture programme under watershed development had three main objectives. First, it provided a more dependable income security to the farmers as against groundnut, which is prone to frequent droughts. Second, it brings in a change in the land-use pattern from seasonal cropping to perennial cropping and a cropping diversity as well. Thirdly, it adds to the vegetation in the otherwise denuded area on a sustainable basis. Given its advantages, horticulture is an important drought-proofing measure in a chronically drought-prone Anantapur District.

Demonstration Effect: Farmers Ready to Scale up!

Several farmers have initially rejected mango plantations in the rain-fed areas as they thought that they would not survive. However, seeing the benefits being reaped by the farmers who have gone for mango plantation others are now ready to take up horticulture. AF is not directly funding the horticulture programme any more. However, AF is linking the farmers to NREGP of Government and also horticulture programme of RDT. AF has been advocating for a favourable policy under NREGP for rainfed horticulture. Having seen its success under AF's watershed programme, the Government has come forward to scale it up under NREGP.

Another farmer, **Jayaram Chowdhary,** planted 1800 trees in 25 acres. He is providing water to the plants through drip irrigation. Thanks to the Godugu Gundu Check dam built under Watershed Programme the bore well in his field has adequate water recharge.

China Ramanjaneyulu is a small farmer who planted 400 trees about seven years back. He had to transport water to irrigate the mango plants and only 238 plants survived. However, the plants that have survived are strong and healthy. The farmer attributes this to the watershed activities implemented in the upper regions of his field. China Ramanjaneyulu's wife is the Village Sarpanch, elected in 2006.

In 2004 **G.P. Narayana** planted 600 trees in 10 acres. As there is irrigation facility for the trees they are showing uniform growth. Like him, there are scores of farmers who have been introduced to horticulture under the watershed programme

Mallapuram - village surrounded with lush green mango orchards

The cultivated area under Mallapuram is 1400 acres. Out of this, in more than 400 acres about 60 farmers have started mango plantations. Initially everyone had to transport water to take care of the

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seedlings. Even now **Talla Timma Reddy** and **N Sreenivasulu** are cultivating mango orchards in 5 acres each and are transporting water from a distance using a bullock cart. Alternately, 7 to 8 farmers got together and made provision for a common bore well and drip irrigation system for watering the horticulture plants.

In 2003-04, dalit farmers **Raju, Vannappa** and **Sreeramulu** started mango plantations on 2 acres each. They would carry water in pots on their shoulders for irrigating the plants. As these families are dependant on wage labour and had to go out for work they couldn't concentrate much on the plantation. Though all the plants survived their growth is not satisfactory. If a special provision is made for such farmers to dig bore wells and provide drip irrigation systems it would help them to become full-fledged farmers as they would earn adequate income from the 2 acres.

SELF-SUFFICIENCY WITH JUST 5 ACRES!

The story of two poor brothers from the weaver community in the village is worth narrating. The brothers had five acres of land. They planted 75 mango trees under the programme. They carried water manually in pots to ensure that the plants survive. Later when a check dam was constructed near their field they dug a bore well on their farm. There are about 15 to 16 bore wells under the check dam, all of which have good recharge. The brothers now have converted their land into a showcase for diversified cropping. They cultivate paddy, different flowers, vegetable and fruit trees. The entire family is involved now in agriculture. They are able to meet all the expenses of their family, including education, health and marriages, etc. The younger brother's family lives on the farm and takes care of all the agricultural work. The elder brother's family does the marketing in Kalyandurgam. Apart from a few commodities that they have to purchase (oil, soaps, salt, etc.) the family is self-sufficient and produce a variety of crops for their needs. That a big joint family is self-sufficient with just 5 acres of irrigated land in Anantapur is noteworthy.

Palavenkatapuram – making best use of the watershed development

Palavenkatapuram village is in Bramhasamudram mandal. This village has reaped maximum benefit out of the Watershed Programme. The village has about 2800 acres agricultural land. There are 550 families, of which 150 belong to SC and ST communities, 150 to BC and 250 to OC community. Watershed Programme was implemented in this village from 1997 to 2005. Under this programme, the entire land was treated with soil and moisture conservation. About 20 check dams were constructed. One irrigation tank was converted into a percolation tank. Social fencing protected a hillock adjoining the village, a Common Property Resource (CPR), and vegetation was improved. As a result of these activities, ground water is aplenty in as many as 300 bore wells of the village.

About 35 farmers have cultivated 300 acres of fruit orchards (each farmer has taken up 5 to 18 acres of mango and sapota plantation). All these trees have now come to bearing. It is a tradition in this area to sell the mango crop at the flowering stage itself. And each farmer gets anywhere from rupees one lakh to five lakhs. The fruit orchards have developed around the check dams and the farmers are extremely happy for earning good profits with very little investment. They are happy as the trees they have planted have grown well and are now providing them a sustained income. Earlier none of the farmers had the experience of cultivating mango or sapota trees in dry lands, as only groundnut was being cultivated as a rain-fed crop for ages!

AF advocates 30% of the cultivated area under tree crops like mango

One of AF's objectives has been to bring in change in land-use and cropping pattern in Anantapur. AF advocated that the cropping pattern must change from the mono-crop of groundnut which is a seasonal crop, to diversify to tree crops like mango and tamarind. It advocated that tree-based horticulture should cover 30% of land area. Such a change, while providing some income security even in drought-years, would also bring in crop diversity, and the much-needed vegetation and biomass in the cropped area.

A different story!

The example of the farmer **Lakshmanna** is different. Despite the advice of the Watershed Committee and oth ers he went ahead with planting of 10 acres of pomegranate and claimed that he would obtain maximum profits in the village. However, the pomegranate trees were persistently infested with pests and he could neither manage nor bear the high costs. Ultimately, he had to cut all the pomegranate trees. He is repenting the lost opportunity whenever he sees other farmers getting regular income from mango trees.

Kadiridevarapalli farmers show the way in mango and tamarind trees

Watershed programme was implemented in Kadiridevarapalli village of Kambaduru mandal from 1995 to 2000. The lands of the village are not very fertile. The pre-programme position was that 20 agriculture wells were abandoned as the ground water had dried up. There was some water in a few wells, it was scanty and only 1 to 2 acres could be cultivated under it. After careful participatory planning, Soil and Moisture Conservation measures were undertaken across the whole cultivated area and 15 check dams were built. Three old water bodies were repaired. With this, water in the wells got rejuvenated and the farmers now say that they are cultivating about 200 acres under various wells.

When the mango saplings were planted under the programme, initially the farmers had to carry water to save the plants. With the gradual increase in groundwater the farmers have dug bore wells and installed drip irrigation system. In all, about 100 farmers planted about 18,600 fruit trees covering about 300 acres. Among the farmers, three belong to the ST community and 5 to the SC community. The farmers are now getting an assured average income of about rupees 10,000/- from each acre. A farmer, **Nagireddy**, has taken up mango and sapota plantation and in marginal and rocky soils he has taken up tamarind plantation. The tamarind trees are also yielding now. Without investing much this year he has earned rupees 10,000/- from the tamarind trees alone. In one check dam near his field there is water even in the month of February, that is, four months after the rainy season.

"Check dams changed our lives"! Story of Maddalacheruvu Thanda

Maddalacheruvu thanda in Kanaganipalli mandal has 47 tribal families. About 50 to 60 years back two families from Palavai village of Kalyandurgam migrated to this village and made it their home. Their livelihood was earlier based on limestone work. Gradually, they started cultivation of government lands. Now agriculture is their secondary livelihood. Slowly the number of families increased to 47.

The yields from the dry lands were meagre. On the request of the tribal leaders, AF introduced Watershed Programme in the village. Under the programme, they constructed seven check dams on

the adjoining stream and treated the catchment area with Soil and Moisture Conservation measures. Further, it provided several support activities for the tribals to settle down as agriculturists. RDT provided houses and a primary school for them. AF strived to inculcate discipline and hard work among them.

Before the Watershed Programme there was acute water shortage in the village. With the construction of the check dams and treatment of the catchment area with Soil and Moisture conservation, the groundwater in the cultivated area increased dramatically. The government also issued land rights at 5 acres for each farmer. The tribals then got a bore well dug and went in for plantation of mango, sweet orange, guava, coconut and papaya. They also cultivate groundnut and paddy. Drip irrigation systems have been installed for efficient use of groundwater. They have given up limestone work as they are fully and gainfully involved in agriculture. This is a big upward occupational mobility for the tribals.

This brought about many changes in their social life also. Liquor consumption is banned in the village. This was a remarkable decision for the tribals who were traditionally used to drinking. All disputes between and within the families have to be resolved with the community elders. When outsiders attempted to sell illicit liquor in the village they reported it to the Excise Police and got them arrested. Now no one dares to sell liquor in the village. With economic development, the families are educating their children up to higher education and in better educational institutions. There are students here ranging from primary to university level. There are 10 graduates and one MBA in this tiny tribal settlement. There is also one teacher. While the government has given them the land, it is the Watershed Programme of AF and other support by RDT that has provided them with bore wells, drip, education and health facilities. The Watershed Programme activities have turned out to be a big boon for them.

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Postscript

An inclusive, people-centred approach to watershed development

RDT and AF chose this backward region as their area of work and started their operations since late 60s. Development of dalits, including education, health, agriculture, housing, women empowerment, etc., was the thrust area. The organization has earned its place in the hearts of the people with these people-centred programmes. It has to be kept in mind that while there are forces working for change, there are also forces that want to keep the people in darkness and in ignorance to serve their vested interests. These forces create conflict-ridden atmosphere making peaceful existence difficult. However, AF Ecology Centre is an exception to this phenomenon. It has involved all sections of the villages in the

development process and laid the foundation for a way of working together in cooperation. This was achieved without much ado or pomp.

This was the foundation on which the Watershed Development Committees representing all the communities and both the genders were formed under the watershed programme. These Committees are even now the local institutions for implementation of all land related development activities. And as a result of the unity and cooperation achieved, they have become the platforms for planning and implementation of other developmental activities as well. Nijavelli village of Kundurpi mandal is an example for this. The problems of this village are discussed and dealt under the leadership of the Watershed Development Committee.

Rain Water Harvesting (check dams) made a big difference

The land development and check dams (for rain water harvesting) and restoration of old traditional water bodies that were built with the participation of the people have become a boon for the drought prone villages. The groundwater is plenty particularly in the zones of influence of the check dams. In many villages, like Palavenkatapuram, conversion of the old irrigation tanks into percolation tanks increased the groundwater in all down stream villages.

Why is Rain Water Harvesting so critical?

Rain water-harvesting structures, popularly known as check dams, are a critical component in watershed development, particularly in Anantapur. In a low and erratic rainfall district like Anantapur, every drop of water matters. It is water that can make or break the life of a family - or any living organism for that matter. So, it is the additional water that was harvested and put to use that brought life into the entire village, providing village-based livelihoods for all sections.

From a labourer to a rain-fed farmer to a horticulturist to a full-blown viable farmer — A transformation

As part of land development and crop diversification, several subsidies were given for fruit tree cultivation. Initially the farmers did not have confidence that the fruit plants would survive on their lands. But given the strong faith in the organization they came forward to take up this activity. They planted the trees and struggled to take utmost care of them. When they saw that the plants survived and were growing well some farmers went in for bore wells and made arrangements for drip irrigation. Some farmers shifted from the traditional crops of paddy and groundnut to radish, tomato and other vegetables. As a result, the labourers who would earlier see lands only as daily wage labourers are now full-blown farmers themselves with better lives. The groundnut crop usually distanced the women from decision-making

The groundnut crop usually distanced the women from decision-making in agriculture. But the fruit trees and diversified crops brought them back into decision-making and management of agriculture.

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Areas that the watershed programme has impacted

All this resulted in creating impact on 1) enhanced and sustained agri-production 2) diversity in land-use and cropping pattern, 3) increase in greenery that benefits the environment, 4) bringing back women in to the fold of agriculture, 5) unity among the villagers, a much felt need and 6) increase in agricultural diversity, assuring reasonable returns on a sustainable basis.

Social Impact: Participation, Peace and Unity in villages

Generally jealousy and self-centredness play a certain role in the social dynamics among the villagers. People tend to feel jealous if their neighbour is likely to get more benefit than them and at times tend to oppose the entire programme. But in this case, no such problem was witnessed in these villages. The organisation was taken into confidence by the whole village right from the beginning, irrespective of the socio-political divisions. I felt that the trust and confidence in the organisation solved many of the usual problems, and paved the way for smoother implementation of the programme.

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Despite the existing socio-political divisions in the villages, decision–making by consensus, unity, cooperation, and trust were developed among the people. The programme implementation that was participatory and transparent resulted in cooperation and peaceful co-existence of all sections of the villages. This, surprisingly, has continued till date!

Generally, some power-mongers or money-spinners usurp developmental activities in a village and don't allow the weaker sections to benefit from them. But here, I observed a different scenario where free and fair distribution of benefits among the haves and have-nots was ensured.

I observed that "Unity through Development' was the most significant social achievement in these villages.

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S. M. Basha
Human Rights Activist
M: 94406 83555

About Mr. S. M. Basha:

Mr. S. M. Basha is Vice President of Human Rights Forum (HRF) of Andhra Pradesh. From 1977 to 80, he worked very actively as the President of Anantapur District OPDR (Organization for Protection of Democratic Rights); Between 1972 and 79, he worked as District Committee Member of Revolutionary Communist Party. Since 1983, he has been working as Editor, Kadalika.

Though Mr. Basha was employed with and retired from the Department of Agriculture, he has been a passionate human rights activist, writer, social activist and a development worker.

Since he resigned from Revolutionary Communist Party in 1979, he has been working as a social activist, studying and responding very constructively to various problems affecting the people, particularly of Anantapur District.

He has multi-dimensional knowledge and experience on the issues of agriculture, drought, irrigation, poverty, under-development and issues related to social divisions, caste, politics and factions in the District. He has been associating with many progressive Civil Society Organisations, NGOs and CBOs. His contribution to the development of Anantapur District is well recognised.

He has studied in-depth and written many articles on agricultural crisis and farmers' distress, farmers' suicides, issues related to rain-fed farming, droughts, traditional water bodies, irrigation projects.

Activities

Our Project Area and Target Groups

The project area comprises of 235 habitations in 8 mandals (out of 63) in Anantapur district, which consists of Rapthadu, Dharmavaram, Atmakur, Kuderu, Kalyandurg, Beluguppa, Settur and Kundurpi. Totally there are about 70,000 families or a population of 3.5 lakhs in the above 235 habitations.

We primarily work with about 60,000 small farmers and landless labourers, whose livelihoods are inadequate and threatened by frequent droughts and poverty. We are particularly focusing on working with women and youth within the primary target groups. However, we also work with medium and big farmers particularly in promoting bio-pest management and bio-fertilizers.

Our Present Programme Activities

1. Accessing Basic Services:

1. Campaigning and organizing the labour on their rights under NREGP and other Basic Services
2. Facilitating in planning and implementation of NREGP at village level for the benefit of labour
3. Policy Advocacy for pro-poor policy conditions and for removal of bottlenecks in the implementation of NREGP

2. Sustainable Agriculture & Value Addition

1. Organising farmers into Sasya Mitra Groups (SMGs) and Sasya Mitra Samakhyas (SMS) and Small Farmers Cooperatives.
2. Promoting diversified land use with a mix of perennial tree crops (Horticulture) and annual crops.
3. Promoting diversified cropping pattern with a mix of food, fodder and commercial crops.
4. Organising Farmers Field Schools (FFS)
5. Campaigning and promoting Non-Pesticidal Management (NPM) through Pheromone traps, White & Yellow boards, border crops, inter crops, trap crops and bio pest management by decoctions, neem extracts, trichoderma cards and NPV solutions etc.
6. Campaigning and promoting Bio-fertilisers like farm composting,Vermi-Composting, liquid fertilisers like Jeevamrutham, Beejamrutham, Vegetation development.
7. Campaigning and promoting food and nutritional security and soil health through crop diversity, crop rotation and intercropping.
8. Local processing and value addition of agri-produce like groundnut, redgram and local marketing development.
9. Promoting diversified income opportunities through dairy and livestock and better marketing facilities by mobilizing bank credit and government resources.

3. Alternate Livelihoods for Rural Youth and Women

1. AF runs two Driving Schools with a capacity to train about 250 rural youth/year
2. And two other Skills Training Centres are run with the capacity to train about 1000 rural youths/ year (SkillPro Foundation). They are training in job oriented skills training for dropped out girls and boys in Driving, ITES, Hospitality, Customer Care, Automobiles, Electrical Wiring, etc.
3. Enabling access to rural youth for various vocational training by Government Agencies.

Human Resources

4. Training and assisting rural youth and women financially for starting new non-farm group enterprises or improving the existing non-farm livelihoods.
5. Enabling credit and marketing linkages for various non-farm products produced by the rural youth and women.

4. Alliance Building and Policy Advocacy

1. Campaigning and building Public Opinion on policy issues of Gender, Poverty, Environment, Agriculture.
2. Alliance Building & informal networking with NGOs, CSOs and CBOs on issues of Gender, Poverty, Environment and Agriculture
3. Lobbying with Government for pro-poor policies and removal of various bottlenecks in implementation of various anti poverty programme.

Our Human Resources

AF has acquired two most valuable assets through its work and history of about 40 years. They are a) its personnel who are committed and competent and b) its credibility with people.

AF – Ecology Centre has about 100 committed, trained and experienced personnel. The average working experience of personnel in AF is about 18 years!

Our Core Team

It has a Core Team of about 20 committed and competent persons. They are senior professionals, well trained and richly experienced. Their rich expertise includes Participatory Watershed Development, Sustainable Agriculture, Alternate Livelihoods, Gender, PME, Organisation Development, Personnel Management, Participatory Approaches, Leadership Development, CBO formation, Capacity Building. The Core Team also has rich experience in Policy Advocacy and networking with NGOs and CSOs.

Our Grassroot Organisers

It has about 65 Committed Socio Technical Organisers at grassroot level. They were originally rural educated youth, recruited, well trained with a long field experience by now. Their training and experience include CBO formation and capacity building, participatory planning and implementation, community organisation and consensus decision-making, conflict resolution in communities, promoting community leadership etc.

Their technical training and experience include a variety of watershed development skills like Soil and Moisture Conservation, Rain Water Harvesting, Horticulture, Rainfed Agronomical Practices, Bio-diversity, Crop-diversity, Bio-Pest Management (NPM) Bio-fertilizers like composting, liquid fertilizers, Alternate Livelihoods for Women and Youth etc.

Our Core Competencies, Organisational culture and Credibility

Core competencies:
At present our core competence lies in a) Watershed development & Sustainable Agriculture b) Alternate Livelihoods for rural youth & women c) Participatory Planning Monitoring & Evaluation d) Strong work culture in working with people e) Pursuit of excellence in quality of work f) Rooted firmly with people in villages.

Partners

Organisational Culture

AF has a 40 long accumulated experience in Management & Organisation Development, having itself grown and developed together with RDT. It has evolved the ethos and systems of democracy, personnel participation, transparency, inclusive approach, Gender, team work etc. AF has been very strong in change management and adaptation. It has a strong work culture with high concern for quality in work, participation of people, systems of transparency and accountability, regular performance assessment, periodic internal and external evaluation etc. It has also a long and fruitful experiences of cooperation and collaboration with Government Agencies involved in rural development.

Credibility with people

Due to its long years of consistent and very effective work and track record of achievements, it has acquired a very high credibility with people, with Civil Society, Government and other NGOs.

Our Funding Partners & Collaborators

Principal Funding Partners.

1. EED – Germany
2. ICCO – The Netherlands

Other Funding partners and collaborators

1. NABARD (Integrated Watershed Development)
2. SERP (Society for Elimination of Rural Poverty – A Govt. Agency)
3. ICRISAT (Varietal Research & Technology Transfer)
4. Department of Agriculture (Technology Transfer)
5. DWMA (NREGA)

Achievements

SUMMARY OF MAJOR ACHIEVEMENTS UNDER WATERSHED DEVELOPMENT PROGRAMME 1987 to 2007

Sl. No.	Activity	Unit	Extent covered / Nos.	Families benefitted
1.	Soil & Moisture conservation works and adoption of rain-fed farming practices.	Ha	1,34,500	60,314
2.	Restoration of Old Tanks	Nos.	326	2,216
3.	Construction of Percolation Tanks	Nos.	436	3,128
4.	Construction of Check Dams	Nos.	1,536	4,378
5.	Construction of Farm Ponds	Nos.	269	269
6.	Horticulture plantations	Plants	1,916,000	19,960
7.	Forest Plantations	Plants	13,514,444	60,013
8.	Farm Forestry (Bio-mass development)	Ha.	1,32,674	52,414
9.	Crop diversification (Food crops & Fodder)	Ha.	2,508	10,330
10.	Border Crops (Millets & Pulses)	Ha.	23,300	7,738
11.	Vermi compost units	No.	6,121	6,121
12.	Farm Bio-compost units	Nos.	1,079	1,079
13.	Bio-pest Management	Ha.	9,510	2,239
14.	Bio-gas units	No.	1,623	1,623
15.	Smokeless chulha units	No.	15,000	15,000

ACHIEVEMENTS UNDER SUSTAINABLE AGRICULTURE AND RURAL LIVELIHOOD PROGRAM 2007-08

Sl. No.	Activity	Unit	Extent covered / Nos.	Families benefitted
1.	Farmer Field schools conducted	No.	11,068	40,602
2.	Vermi compost AND Farm compost units	No.	17,345	17,345
3.	Farm ponds	No.	390	390
4.	Bio-pest management	Ha.	20,970	13,550
5.	Pest traps	Ha.	32,363	18,877
6.	Border crops	Ha.	266,638	101,019
7.	Crop diversification (Food crops and fodder)	Ha.	13,686	13,686
8.	Forest plantations	Plants	738,676	12,346
9.	Non-farm IGPs taken up by women	No. of women	765	765
10.	Bio-gas units	No.	682	682
11.	Youth trained in skills	Boys	515	515
		Girls	622	622

Brief History of AF Ecology Centre

AF Ecology Centre was founded by Father Vincent Ferrer in 1982. Since then we have been involved in people's empowerment through drought management, environmental development and policy advocacy. We have made a substantial contribution since 1986 in Anantapur district with our Participatory Watershed Development Programme. It was perhaps the largest participatory watershed programme by an NGO in India spread over about 300 villages, covering about 1.35 lakh ha of farm land and 60,000 farmers. We're known for our participatory approach and very high quality in watershed development on a sizable scale. The major interventions under the watershed programme included Soil and Moisture Conservation, Rain Water Harvesting, Horticulture, Rainfed Agronomical Practices, Bio-gas and Peoples Institutional Development.

We have also made a significant contribution in creating a favourable and enabling policy condition for a people centred watershed development in the State of Andhra Pradesh. At the policy level we have been actively involved in various policy making bodies like Andhra Pradesh Water Conservation Mission, Andhra Pradesh State Commission on Farmers Welfare, and Advisory Committee on Watershed Development Programme of Andhra Pradesh. Further AF has been actively involved in various consultations by the Ministry of Rural Development at national level.

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ecology centre
sustainable . human . nature

AF Ecology Centre
Upparapalli Road,
Bangalore Highway, Anantapur - 515 002.
Andhra Pradesh - India

Contact Person
Dr Y V Malla Reddy
Director

Phone: +91 (0)8554 - 244 222, 246 884
Fax: +91 (0) 8554 - 244 990

Email: actionf@sancharnet.in
actionf_atp@dataone.in

www.af-ecologycentre.org

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