

### АІМ

The aim of the Society is development of weaker sections of the rural community, and to move towards sustainable development, through overall increase in their knowledge and skills in the areas which directly affect their standard and quality of life.

### VISION STATEMENT

AFPRO as a secular socio - technical development organization with Christian inspiration visualizes itself as working to enable the rural poor - including women and men belonging to small and marginal farmers and the landless, dalits, tribal people, fisher folk and unemployed youth - to move towards sustainable development, through an overall increase in their knowledge and skills in areas that directly affect their standard and quality of life. It visualizes itself as an organization that over the next decade will enable the marginalized rural groups to achieve enhanced socio - economic and personal status in society through appropriate technologies for the management of natural resources.

### MISSION STATEMENT

AFPRO dedicates itself to its mission of alleviating rural poverty by promoting and working through voluntary organizations; with a focus on enabling the marginalized and weaker sections of rural society to participate in the process of rural development by strengthening their resource base and capabilities through improved knowledge and skills, both in the technical and socio - economic development areas.





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### ABBREVIATIONS

ADP	Area Development Programme	CSR	Corporate Social Responsibility
AFARM	Action for Agricultural Renewal in Maharashtra	DEWATS	Development and Installation of Decentralized
ATMA	Agricultural Technology Management Agency		Wastewater Treatment Systems
BALCO	Bharat Aluminum Corporation Ltd	DWSM	District Water and Sanitation Mission
BCI	Better Cotton Initiative	DWSP	Drinking Water Security Plans
BCS	Better Cotton System	EVA	Extreme Risks, Vulnerabilities and Community
BILT	Ballarpur Industries Limited		Based Adaptation in India
СВА	Community-Based Adaptation	FFS	Farmers Field Schools
СВО	Community Based Organisation	FFSL	Farmers Field School on Livestock
ССТ	Continuous Contour Trenches	FFSW	Farmers Field School on Water Management
CFT	Cluster Facilitation Teams	FGD	Focus Group Discussion
CGWB	Central Groundwater Board	GCM	Global Circulation Models
CRP	Community Resource Person	GDP	Gross Domestic Product
CSO	Civil Society Organisation	GHG	Green House Gas



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GP	Gram Panchyat	NRDWSP	National Rural Drinking Water Security
GS	Grann Sabha		National Rural Livelibood Mission
UDI	Gloundwater Prospecting Maps	O&M	Operation and Maintenance
			Participatory Rural Apprisial
	Households		Participatory Technology Development
	Information Communication and Communication	TIDA	Approach
IEC	Information Education and Communication	RCM	Regional Circulation Models
	India Meteorological Department	RO	Reverse Osmosis
	Intended Nationally Determined Contributions	SAPCC	State Action Plan on Climate Change
	Intended Nationally Determined Contribution	SBM	Swachh Bharat Mission
	Intended Nationally Determined Contributions	SC	Scheduled Caste
	Integrated Nutrient Management	SCT	Staggered Contour Trench
	Implementing Partner	SHG	Self Help Groups
	Integrated Pest Management	SUSSC	State Level Scheme Sanctioning Committee
IPPE	Integrated Participatory Planning Exercise	so	Support Organization
IWIMP	Integrated Watershed Management	SRI	Systems of Rice Intensification
	Frogramme	ST	Scheduled Tribe
	Krishi Vidhvan Kendra	SWC	Soil and Water Conservation
		TERI	The Energy and Resources Institute
	Lutheran World Pelief	TOT	Training of Trainers
	Monitoring Evaluation Learning &	UNFCCC	United Nations Framework Convention on
	Documentation		Climate Change
MIS	Management Information System	USD	United States Dollar
MNREGA	Mahatma Gandhi National Rural Employment	VDC	Village Development Council
	Guarantee Act	VWDA	Vasundhara Watershed Development Agency
MoDWS	Ministry of Drinking Water and Sanitation	vwsc	Village Water and Sanitation Committees
MPC	Minimum Production Criteria	VWSP	Village Water Security Plans
NABARD	National Bank for Agriculture and Rural	WFP	World Food Programme
	Development	WHS	Water Harvesting Structures
NAPCC	National Action Plan on Climate Change	WP	Work Package
NAQUIMP	The National Aquifer Mapping and	WUG	Water User Groups
	Management Programme	WVI	World Vision India
NEP	National Environment Policy	YASHADA	Yashwantrao Chavan Academy of Development Administration

### RESOURCE SUPPORT

Better Cotton Initiative (BCI) Ballarpur Industries Limited (BILT) Bharat Aluminum Corporation Ltd. (BALCO) Coca Cola Foundation Employment Gurantee Scheme Dept. (Planning Dept), Govt. of Maharashtra. GiZ - Germany Global Water Partnership (GWP) through India Water Partnership (IWP) IDH IKEA Trading (Hong Kong) Pvt. Ltd. Lafarge India Private Limited Lutheran World Relief (LWR) Monsanto USA NABARD Norweigian Embassy Panchayati Raj Engineering Department (PRED) and Zilla Panchayath Rio Tinto Exploration India Pvt. Ltd. Vasundhara Watershed Development Agency, (VWDA), Pune Water Conservation Department, Pune World Vision India YASHADA



## **Executive Director's Note**

FPRO started its journey 48 years ago in response to the need for technical support during a time when the country was facing some of the worst droughts. Our core areas were defined by extensive work on the development of groundwater including the estimation of groundwater potentials in some of the most challenging geological conditions (hard rocks of peninsular India). While, our core areas have grown to include support for sustainable agricultural practices and allied activities (livestock, poultry, and fisheries), marketing of agricultural produce including agriculture post harvest, development of supply chains and skill based enterprise; water, sanitation and hygiene; renewable energy and climate change; the requirement of social and technical support by the small and marginal farmer for food and water security has not changed much. Rather it is the type, intensity and coverage of these issues which has changed. Therefore, there is a need to look at the use of new technologies and bring them before farmers.

Access to clean drinking water and sanitation is a fundamental requirement of all human beings, with a direct impact on human health. By interpreting Article 21 of the Indian Constitution - popularly known as the Right to Life - to include the right to safe drinking water; efforts to develop scientific approaches that best address the health hazards associated with the consumption of contaminated or polluted water has been in progress for over four decades. Once, health hazards associated with consumption of contaminated water were attributed primarily to the presence of bacteria; however, now these hazards have diversified with an increasing number of drinking water sources affected by excessive amounts of fluoride, iron, arsenic, nitrate etc. While, water treatment plants are offering immediate relief to quality affected habitations, since several of these contaminants polluting groundwater are associated with excessive withdrawal of groundwater, unscientific crop management practices etc there is a need to adopt sustainable groundwater and agricultural practices include measures of water security such as regulation in its use; increase in our support for sustainable agricultural practices including efficient irrigation practices and integrated nutrient management; and an encouragement to groundwater recharge. These will help restore groundwater potentials, ensuring the sustainability of the resource; offer long term relief to quality affected habitations and encourage the creation of a groundwater bank – a reservoir of water, relied on especially disasters like droughts, sudden water shortages etc.

Jalswarajya or the decentralized democratic governance of water continues to be relevant. With Panchayats pushing for the development of drinking water infrastructure, the support of dedicated teams of trained engineers and hydrogeologists with commitments to serve the poor and the weak is crucial. With capacity building of dedicated village level institutions such as Village Water and Sanitation Committees (VWSC) on operation and maintenance (O&M) of piped water supply systems (metering of water and collection of tariffs) essential, continued issues of sustainability, equity and justice can be addressed. However, in order to address the intricacies involved in executing capacity building programmes and ensure quality output, the capacities of organizations extending such training programmes needs to be carefully reviewed.

Irrigation in chemically contaminated water is a challenge only recently addressed by the agricultural sector. While, research in technological innovations has led to the design of water filters for irrigation, marginalized farmers have been supported by demonstrations of practical and cost effective solutions. Further, industrial waste water is being accepted as an appropriate alternate to irrigation. Despite industrial safeguards defining the criteria of water quality to be discharged and processes of safe discharge, inadequate scientific evidence on the health impacts of consumption of crops cultivated in 'potentially' contaminated water; safe irrigation practices by designing technical solutions which either reduce the use of contaminated water/waste water for irrigation and/or dilute its impacts were demonstrated (Water Quality testing).

Increasing water stresses have intensified the need to harvest rainwater. While, the development of land resources continues to be the systematic approach to storing surface water and encouraging groundwater recharge, the rooftops of schools need to be extensively developed as catchments of rainwater. Further, an understanding of fundamental principles of hydrogeology can help improve the actual recharge from groundwater recharge measures. Supporting the state governments in addressing this challenge 120, 227, 323 litres of rain water have been stored under our different projects. However, since these measures have been implemented under different hydro geo thermal conditions, actual recharge is yet to be quantified.

AFPRO once pioneered the development of groundwater resources in the country. However, engaging with communities in its management requires not only the evolution of approaches but also continued policy support. While, water budgeting and Groundwater Prospecting Maps (GWP) are an empowering tool for decision makers to recommend crops and associated Package



of Practices (PoP), design soil and water conservation measures and water quality treatment approaches; there are complexities involved in transferring of this technology to decision makers and engaging with communities on groundwater management. In contexts of changing climates, declining groundwater reserves, increasing water quality issues and increasing water stresses the water security approach gains prominence; with well defined capacity building approaches contributing to the achievement of national goals.

Food security is at risk due to population pressures on an increasingly economically unviable agricultural sector. State supported encouragement to alternate livelihoods and diversion of agricultural land to non -agricultural use is gradually reducing the motivation of farmers to practice agriculture. Further with investments in agriculture having peaked in terms of expected returns, returns from a diversion of attention towards the rainfeds will be greater. However, market driven expansion of agriculture, especially, vested interests of private players need to be factored to ensure that domestic demands for cereals, pulses and vegetables are met. Here, the creation and strengthening of an agricultural institutional network (Farmers Clubs, Cooperatives, and Producer Groups etc) with well defined structures and adequate representation of the local communities will go a long way in ensuring that marginalized farmers get a fair deal. Further, contributions of trained village level service providers need to be assessed in bridging gaps in the demand for agricultural support. While, the Information Communication and Technology (ICT) revolution is offering alternate medium of disseminating advisories and increasing coverages; there are millions of marginalized farmers who prefer hand holding support through field based trainings and practicals.

Support for credit or loans have gained momentum in the recent past. While, we too have been advocating for the inclusion of the small and marginal farmer into the banking system for over four decades, liabilities associated with lending continue to exist. Frameworks by banks are gradually being put into place; however sensitization of banks to the practical difficulties of farmers, especially those restricting their inclusion into financial systems is required. This includes reconsideration of evaluation criteria's. Here non government organizations can support banks in reducing liabilities associated with lending. Under climate change, there is a need to enhance the adaptive capacities and reduce risks through adaptive practices to make marginalized farmers most eligible for bank credit.

North-Southinstitutional cooperation in adapting to the impacts of climate change was demonstrated with pilots on climate proofing of watersheds and development of pastures, the utility of wastelands in developing alternate sinks, thus mitigating impacts, was also explored. While, the scientific community works towards improving the certainties with which trained Global Circulation Models (GCM) and Regional Circulation Models (RCM) predict climate changes, local weather monitoring networks were strengthened with continued demonstrations of agro-meteorological laboratories and simple rain gauges. These are improving the scientific validity of vulnerability assessments and action plans. However, while India finalizes its Intended Nationally Determined Contributions (INDC) to reduce Green House Gas (GHG) emissions, strengthening of this North-South cooperation and financing of adaptation programmes with gradual efforts being made to reduce the contribution of the agricultural sector to the emission of Green House Gases (GHG), especially methane is required.

Non Government Organizations are holders of socio-technical experience, experience which corporates can leverage in effectively interpreting clauses of the Corporate Social Responsibility (CSR) Act to develop under developed pockets of India. Awareness of continuing challenges in rural development will help corporates develop a better appreciation of the needs and processes involved in extending programmes related to drinking water security, land and water resources (watersheds) and livelihoods. Social dynamism is a major obstacle, increasing in complexity in certain socio-economic settings especially in tribal regions. The changing mind sets, essential for any sustained development intervention, is time consuming and needs to be factored into structured Impact assessments and target oriented agendas. While, trained human resources and concurrent human and institutional development processes contribute to bridging these gaps, supporting established and recognized methods will help ensure that the spirit of true rural development is not lost.

D.K. Manavalan IAS (Retd.)

**Executive Director** 





## FOOD SECURITY & LIVELIHOODS

ndia has seen impressive economic growth in recent years, but the country is still struggling with widespread poverty and hunger. India's poor population amounts to more than 300 million people, with almost 30 percent of India's rural population living in poverty. Records say that India is home to 25% of the world's hungry population. An estimated 43% of children under the age of five years are malnourished (WFP 2012). India remains an important global agricultural player; despite the fact that agriculture's share in the country's economy is declining. It has the world's largest area under cultivation for wheat, rice, and cotton, and is the world's largest producer of milk, pulses, and spices (World Bank 2012). Nearly three-quarters of India's households are dependent on rural incomes. Agricultural productivity in the country's semi-arid tropical region is impeded by water shortages and recurrent drought, while environmental degradation and vulnerability to weather-related disasters pose challenges to the country as a whole.

AFPRO has extensively been reaching out to the rural community of India extending its technical support in ensuring food security through climate resilient agriculture and prudent natural resource management. AFPRO's illustrious work in the area of agriculture, food security and livelihoods are done by adopting innovative models of sustainable agricultural practices which include soil and water conservation, crop diversification, integrated farming system, integrated nutrient and pest management, organic farming and promoting alternate livelihood options focusing on agriculture and allied activities. AFPRO is moving beyond better management practices of cotton to "better cotton systems" in Maharashtra and Gujarat, where we are motivating farmers to reduce the cost of cultivation through best practices and soil test based fertilizer application. In the Bhagalpur district of Bihar AFPRO is enhancing the resiliency of the small holder farmers through stress tolerant varieties of rice, maize and wheat with scientific and climate smart crop management techniques, and appropriate irrigation support systems. Rejuvenation/restoration of natural drainage to improve the efficiency of existing land and water resources in 5 villages in Pune district of Maharashtra is being implemented. Strengthening of livelihoods through water resources development and SHG formations for entrepreneurships on sewing, aggarbatti-making etc. are being implemented in different parts of India. It is important to kindly note that with the new CSR rules in place, several corporates have entrusted AFPRO with these livelihood enhancing activities in backward regions of India, extending from Yavatmal district in Maharashtra to Korba district of Chattisgarh and Chhattarpur district of Madhya Pradesh. Details of the achievements under these projects are presented in this section.



## Moving Beyond Better Management Practices towards Better Cotton System (BCS)

otton is one of the most important fiber and cash crops of India and plays a dominant role in the industrial and agricultural economy of the country. Even though cotton cultivation in India continues to be plagued by issues of improper application of basic inputs like seeds, fertilizers, pesticides, water etc and a toll of changes in rainfall patterns is observed in a decline in productivity; there are certain development taking places at the macro level- fluctuating demand of Lint Cotton, inadequate policy support (cotton pricing) are also having an impact on the economic viability of cultivating this cash crop. In an effort to balance out requirements of technical support at the grassroots with developments at

Better Cotton Initiative (BCI)	
April 2014 - March 2015	
Maharashtra : 134 Villages in Yavatmal District Gujarat : 168 villages across Surendranagar District, Wankaner & Dhoraji Morbi & Rajkot District	
IDH and IKEA Trading (Hong Kong) Pvt. Ltd.	
Gujarat: 22071; Maharashtra 13904	

the macro level, we have continued to extend our support to the cotton cultivators of Maharashtra and Gujarat through IKEA and IDH supported Better Cotton Initiative (BCI). During the reported period, total of about **35,975** cotton farmers were benefited and introduced to better cotton standard practices.

### **BCI - From product to a movement**

A group of private and public players are collaborating on a pre-competitive basis to accelerate the implementation of Better Cotton Initiative (BCI) to make global cotton production better for the people, who produce it, better for the environment it grows in, and better for the sector's future. BCI aims to transform cotton production worldwide by developing better cotton as a sustainable mainstream commodity.

BCI is a not-for-profit organization stewarding the global standards for improving cotton, and bringing together cotton's complex supply chain, from the farmers to the retailers. It brings together farmers, ginners, traders, spinners, mills, retailers, and grassroots organizations in a unique global community committed to developing cotton as a 'better product'.

By helping farmers to grow cotton in a way that reduces stress on the local environment and improves the livelihoods and welfare of farming communities, BCI aims to create long-term change. It is a global approach that provides a solution for the mainstream cotton industry, including both smallholders and large scale farmers. All farmers stand to benefit from implementing BCI and the development of a new and more sustainable cotton.

For BCI, cotton is not only a product, but a philosophy and a movement.

### Objectives

- Impart knowledge & skill among farmers about Better Cotton System (BCS).
- To motivate farmers to adopt environmental friendly cotton cultivation practices.
- Reduce the cost of production
- To facilitate global knowledge exchange on more sustainable cotton





### Achievements

#### Activities During Reported Period

- Awareness, adoption among farmers towards IPM, INM, scientific method of irrigation, fertilizer and pesticide management and decent work.
- Empowering women's with entrepreneur skills, 6 Sewing machines to Group of 12 Women farmers along with 40 days training
- Improved fiber quality
- Reduced cost of cultivation (10-12%)
- 1021 Soil Sample tested and Soil test based nutrient management practices are adopted by farmers
- Increase in net profit gained by farmers
- Linkage development with Agriculture universities to streamline the use of inputs
- Proficiency development of 624 Community Resource person (CRP)
- Reduction in chemical fertilizers and pesticide usage by 30-40%
- 106.06 ha cotton area has benefitted through drip irrigation method.
- 126 villages covered with soil/water management activities benefitting Approx 600 farmers in Gujarat
- 10555 cum of waterways are constructed in 11 villages benefitting to 100 ha of land
- 17,065 cum of storage capacity created by 19 dugout ponds/check dams deepening in 18 villages of Gujarat
- Empowering women for decision making and awareness generation about safety and hygiene
- Establish linkages with State Govt. Agriculture departments, KVKs, ATMA and Universities



#### **BCI Outreach**

Farmer Registration 35,975 Farmer Registration, categorization and formation of 1073 Learning Groups LG

**TOT'** s Trainings TOT (Training of Trainers) was organized with active involvement of staff

**Modular Trainings of LGs** (On MPCs; Nutrient management, IPM, crop protection and soil/water moisture management, Fiber quality, supply management, marketing and decent work)

**Special Events** Conducted Special events of LG at all 4 project locations of BCI program

**IEC Material Development** 

(MPCs, Farmers Field Book,

Leaflets, Farm assessments Formats, module on BCSS,

display chart, decent work

chart and crop calendars)

Setting up of Demonstration Plot

788 Demo plots , with average 1 acres agriculture land (IPM : sticky

trap, bio pesticides, INM : micro

nutrient (Sulphur), and fertilizers, Safety kits

Soil and Water Conservation

Deepening of check dams (14),

water ways (53), settling tanks

(48), Farm Pond (81), Dugout

Pond (5), 75 Drip irrigation

Farm Assessment

Through farmer, self

assessment by PU Manager,

Checks from IP & BCI & 3rd

verifiers















Action For Food Production

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### **Cross Cutting Issues**



### Challenges

- > Delayed monsoon and climatic variation resulting in re-sowing of cotton crop twice to thrice
- Farmers expectation for higher remunerative price
- Low response for procurement of cotton by ginners
- Use of red level pesticide that in cotton crop which creates adverse effect on beneficial insect for cotton crop as well as on human health
- Lack of good supply chain management system
- Shortage of labour for agricultural operations

### Kapse's Cotton Story

Haribhau Kapse of Walki Village in Yavatmal district of Maharashtra has been one of the several farmers who are re-writing their cotton story. Kapse came in touch with the Action for Food Production (AFPRO) team since 2011, engaged in scouting for farmers' who were willing to join the BCI movement in the district.

Kapse is one amongst 12,000 cotton farmers in the district, who has not only improved his agronomic practices but has been a financial gainer as well. On an average the cost of cotton production has dropped down by Rs. 5,466 per acre, from a high of Rs. 10, 000 per acre by using best cotton practices. By his own admission, Kapse used to harvest around 10-12 quintal of cotton from his 3 acres holding with profit in the range of Rs.4,000 - 6,000 per acre.

Before being part of the fledgling BCI family, Kapse had faced cocktail of problems most cotton cultivators have become accustomed to. From water scarcity, pest attack, crop diseases, and traders' apathy to market vagaries, Kapse has been vulnerable to externalities which were beyond his control. Thanks to the Better Cotton Initiative, he has now better handle over most of the problems.



### Enhancing Small Holder Farmers Resilience through Scientific and Climate Smart Crop Management Techniques

FPRO has successfully launched this project during the year with effective community mobilization in the project area covering 11 flood prone villages in 4 Gram Panchayats named Baijalpur, Lailakh, Chandheri & Parghari in Sabour block in Bhagalpur District of Bihar covering 5000 farmers. As the project area is located in the southern bank of the river Ganges, inundation of low lying farmland is a recurrent annual phenomenon, resulting in heavy monsoon crop losses for farmers who cultivate rice & maize,

Name of Project	Enhancing Small Holder Farmers Resilience
Duration	January 2015 – September 2017
Location	Eleven villages in Sabour block of Bhagalpur district in Bihar
Funding Agency	LWR-Lutheran World Relief
Beneficiaries (as per Social Groups)	2500 HHs (2500 Men & 2500 women)

which lead to insecure and reduced food grain production. In the project area, warm and humid climate prevails with 80 % of the normal average rainfall (1148 mm) under the influence of southwest monsoon. There are large ground water/natural resources in the project area which remained untapped due to which there is no assured irrigation facility for the second crop. The farmers of this area are predominantly subsistence farmers with small landholdings between 0.5-2.0 acres. The major problem identified in the community is that the target subsistence farmers are not able to ensure adequate food production due to:

- > The vulnerabilities from inundation during monsoon and floods in Ganges
- Lack of knowledge about flood /stress tolerant cereal crops/seeds
- Lack of diversified farming practice as a consequence of lack of knowledge about other cereal based stress tolerant seeds and improved cultivation techniques
- Poor crop management practices
- > Lack of irrigation facilities especially during summer & winter
- Lack of power supply to the agricultural fields
- Lack of access to efficient, quality agriculture extension services
- Lack of community based collectives or institutions to provide benefits to farmers in terms of access to credit or financial capital for agriculture investments
- Lack of access to production systems and storage
- > Lack of access to safety net (Government sponsored) for risk transfer and access to government subsidies

The project primarily aims at enhancing the resiliency of the small holder farmers through adoption of scientific and climate smart crop management techniques like

- Growing improved stress tolerant & high yielding varieties of cereal crops such as rice, maize & wheat
- Adoption of best practices like seed treatment, its germination techniques, transplanting process, recommended dose of fertilizer/pesticides application and use of organic manure (INM), weeding, special care during flood and post harvest management practices and marketing
- Pest and disease control through integrated pest management
- Use of improved agricultural tools and NADEP compost pits
- > Applying appropriate irrigation management practices for water use efficiency
- Adapting convergence approach from various line departments to manage water appropriately to share and save water and to use it during lean period.



### **Project Design:**







Orientation meeting at village Lailakh (a) and Kurpat (b)



## Improving Efficiency of Existing Land and Water Resources to Support Livelihoods

Poor land management practices by local communities have resulted in a decrease in the capacity of natural drainage with several nalas silted. In an effort to develop surface water resources, maintenance of existing drainage has been supported by BILT in Pune district of Maharashtra.

Name of Project	Water Management Project
Duration	February 2014 - March 2015
Location	5 villages, Indapur taluka, Pune District
Funding Agency	BILT, Bhigwan
Beneficiaries	2750 farmers

Expansion of agriculture and degradation of

natural forests and vegetative cover have reduced the carrying capacity of streams and rivers, in turn reducing the total quantity of water available for drinking, domestic, irrigation and other purposes. While, rejuvenation of rivers forms a part of the broader vision or framework of national and international agendas, rejuvenation of streams and nalas in the upper catchments of river basins can contribute significantly to achieving this as well as national goals of water security.

A programme on rejuvenation/restoration of natural drainage (deepening and widening existing nalas and cement nals bunds) was designed with the primary objective to improve the efficiency of existing land and water resources in 5 villages in Pune district in Maharashtra. While, the storage created will provide critical irrigation for agriculture and improve groundwater recharge; the excavated soil has also been used to improve the quality of surrounding agricultural fields.

Since, participation of village institutions in operation and maintenance of existing structures was poor; efforts were made to first improve their awareness on issues and challenges. With the support from the local Krishi Vighyan Kendra (KVK) Baramati, members from five Water Users Associations were trained (exposure cum training) on soil and water conservation. Also, awareness building programmes were organized with the support of Department of Agriculture and the Bank of Maharashtra on sugarcane cultivation, fodder management and use of drip irrigation to demonstrate efficient irrigation practices.







### Project outputs during the reporting period

- 2.6 ha-m of storage capacity restored through nala deepening and widening
- 68 ha of wasteland brought under cultivation through spreading of excavated silt
- 380 benefitted through installation of Hand Pumps
- 53 Water User Groups members trained on Water Use Efficiency



Cement Nala Bund at Badalwadi and Vyasewadi village



### Strengthening Livelihoods through Development of Water Resources

n Chhattisgarh, there is abundant rainfall. However, the impact of absent or inadequate rainwater harvesting structures to store water and use it for irrigation is limiting the income generating potential of the land. Here, surface water bodies (check dams, ponds and farm ponds) can be developed to tap this potential, provide access to critical irrigation and generate additional farm based livelihoods.

We supported Bharat Aluminum Company Limited (BALCO) in improving agriculture based livelihoods by developing and renovating surface water bodies (5% farm ponds, check dams and ponds) for irrigation. However, since the state is exposed to the impacts of climate change, especially increased variability of key climatic variables, the use of groundwater for irrigation was demonstrated as a reliable alternative (dug wells). Further, sustainability of irrigation infrastructure, especially its maintenance was addressed with farmers motivated to contribute to its renovation and necessary technical support extended by AFPRO.

Mobilization of farmers for diversification of livelihoods was facilitated by the local Fisheries and Animal Husbandry Department with farmers trained on fish rearing in farm ponds, demonstrations enabled and livestock vaccinated

Name of Project	Jalgram Pariyojna Project
Duration	May 2012 – April 2016
Location	4 villages, Korba district, Chhattisgarh
Funding Agency	Bharat Aluminum Corporation Ltd (BALCO)
Beneficiaries	550 families



respectively. Further, positive indications of project sustainability are progressive farmers, independently mobilizing necessary inputs and cultivating vegetables in both kharif and rabi seasons. With the inauguration of a market, locally known as a haat, by the Village Development Council (VDC), the Gram Panchayat and the Horticulture Department, small and marginal farmers (several tribal in decent) will be able to sell and market their agricultural produce.

Further since, water shortages are a cause of concern and groundwater continues to be one of the most reliable sources of water, dialogue on the most appropriate resource for development (surface or groundwater) continued. Here, while our technical experience guided the decision to develop surface water bodies; the findings from the study on 'Estimation of Groundwater Potential in Dondro village', conducted in consultation with the Central Groundwater Board (CGWB) have reaffirmed the same. With a potential supporting groundwater development and the village categorized as 'safe'; the recommended construction of additional groundwater measures and surface water bodies for irrigation will ensure resource sustainability or water security.

The demonstration of simple irrigation infrastructure have revolutionized rural livelihoods by encouraging the development of integrated livelihood models based on Systems of Rice Intensification (SRI), vegetable cultivation, fish rearing and micro enterprise development. These have been accompanied by multiple benefits of improved productivity, increased cropping intensity, diversification of livelihoods, income enhancement and family level nutrition.

Further, with national efforts to reduce carbon emissions intensifying and cultivation of rice under rainfed and irrigated conditions known to contribute to emissions of Green House Gases (GHG) such as methane, scaling up the practice of System of Rice Intensification in predominantly rice cultivated areas of the state, can be an effective Climate Change Mitigation option.



#### Project outputs during the reporting period

#### Development of Surface Water Resources

- 4,500 cum of created irrigation potential restored
- 4,024 cum of irrigation potential created

#### Development of Groundwater Resources

32 dug wells constructed

#### Development of Agriculture and Allied Livelihoods

- 21.5 acres under System of Rice Intensification (SRI)
- 48 acres and 20 acres supported with access to assured irrigation during kharif and rabi seasons respectively
- > 19 SHG trained on agarbatti making
- 1300 cattle were vaccinated under livestock vaccination programme





Dug well constructed at farmer's field in Dondro Village

## Traditional Knowledge still contributing to the improvement of agriculture: Learnings from a demonstration on System of Rice Intensification (SRI) & Integrated Farming Systems

Rice has traditionally been cultivated in Dondro village, Korba district, Chhattisgarh. Samal Singh is a small holder farmer, owning 4.25 acres of land and too engaged in the cultivation of rice. He generally sows low yielding varieties of rice mainly due to inadequate access and awareness about the availability of improved varieties. Further, his land is rainfed and the erratic nature of rainfall restricts his access to a secure source of irrigation and reduces the productivity of his produce.

Trained under the BALCO supported Jalgram Pariyojna project on the improved practice of cultivating rice, popularly known as the System of Rice Intensification, he was exposed to new varieties of seed and improved crop and water management practices such as land selection, use of compost, fertilizers, pesticides, treatment of weeds, irrigation scheduling etc.



Last year a farm pond was constructed in his field. With good rainfall during the next year and his pond filling up with water, he took the initiative to procure inputs from the local Krishi Vigyan Kendra (KVK) including the use of an improved variety of seed. Developed in the early 1990's, HMT was an improved variety of rice actually developed by a farmer from Chandrapur village of Maharashtra. The variety came with additional benefits of improved productivity, small grain sizes and good eating and cooking qualities and gradually expanded its coverage to adjoining states as well. With support from the local KVK he demonstrated the entire package of practices recommended under SRI in 0.5 acres of land, taking up a small research project on his own by cultivating rice under the traditional system in 1.5 acres.

Relying on simple techniques to quantify productivity, he was able to distinguish the difference in productivity. While productivity in the SRI demo plot was 60 bora/acre, it was only 30 bora/acre in the remaining land; wherein 1 bora is equal to 80 kgs of rice. Once he begins selling surplus produce in the market, it will fetch him an average annual income of Rs 40-50,000. Fish rearing in his farm pond is fetching him an additional average annual income of Rs 12-15,000.



#### **Drip Irrigation Dondro Village**



#### Check dam Dondro Village



## Water Augmentation through Construction of Rainwater Harvesting Structures

Rio-Tinto, the world famous leader in exploration, mining and processing of the earth's mineral resources is working for development of 15 villages of Buxwaha block in Chhattarpur district of Madhya Pradesh. Under community development initiatives, Rio Tinto has adopted activities like solar powered drinking water schemes, installation of hand pumps. Under water augmentation program, water harvesting and/or storage structure development

Name of Project	Water Augmentation Project
Duration	November 2014 - February 2016
Location	Buxwaha Block of Madhya Pradesh
Funding Agency	Rio Tinto Exploration India Pvt. Ltd
Beneficiaries	15 villages

is envisaged in the 15 villages. AFPRO is proud to be associated with Rio- Tinto in identification of suitable sites for enhancing the water storage potential in the villages, design and cost estimation and also help in implementation and monitoring.

#### **PROJECT ACHIEVEMENTS:**

AFPRO has identified suitable sites for water harvesting structures in 15 villages and prepared cost estimation for those structures. 22 water harvesting structures have been constructed in eight (8) villages before the rainy season of 2015. The gamut of activities ranged from renovating ponds, constructing new and renovating earthen bunds, constructing new farm ponds, waste weir repairing and desilting of anicuts.

387 ha of agricultural land in this semi-arid region is ensured of irrigation water through these structures benefitting 626 farmers in 8 villages. Adequate water is made available for livestock and domestic consumption as well.

Convergence with MNREGA could be achieved and envisaged for sustainability, as the earthen works generated employment of around 1303 mandays.



Constructed of waste weir village Tilai - Rio Tinto



Construction of Earthen Bund, Arjun Singh farm, Jagara Panchayat - Jagara, Tahsil -Buxwaha



## Cluster Facilitation for Implementation of Flagship Programme MNREGA in KARANJA

he Ministry of Rural Development implements two flagship programmes of Government of India — Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and the National Rural Livelihood Mission (NRLM) - both addressing the rural unemployment and poverty from different facets. The provision of livelihood security and income generation is the central objective of MGNREGA. This requires participation of communities in planning, implementation and monitoring of the

Name of Project	Cluster Facilitation Team (CFT) project	
Duration	June 2014-May 2017	
Location	91 Gram Panchayats of Karanja Block, Washim District of Maharashtra.	
Funding Agency	Employment Gurantee Scheme Dept. (Planning Dept.), Govt. of Maharashtra.	
Beneficiaries	Social Groups of 91 Gram Panchayats	

works. Increasing the participation of women is also one of the objectives of the programme. National Rural Livelihood Mission (NRLM) works towards creating robust institutional platforms of the rural poor, especially women, in the form of Self Help Groups (SHG) and their federations, to improve their access to financial services, and thereby build their sustainable livelihoods. The strength of NRLM has been its ability to energise the communities and involve them in building sustainable livelihoods, largely based on land. There is, therefore, a commonality of purpose and natural synergy between both NRLM and MGNREGA. In order to use this synergy and improve the implementation of MGNREGS, it has been decided to achieve convergence between the two programmes. Based on the 12th Plan document, the Operational Guidelines 2013 provided for creation of Cluster Facilitation Teams (CFTs) that would address gaps in MNREGA and thereby result in creation of sustainable livelihoods. Cluster facilitation teams are to be set up to cover 15,000 job card holders on an area of 15,000 hectares, which corresponds to the watershed boundaries. For each Block, there will be a CSO/CBO selected by the State Government as per prescribed guidelines. The Resource Organisation (RO - selected by State Govt based on several criteria) will identify, train, place and operate the Cluster Facilitation Teams; and will be responsible for their functioning and the final outcomes. The RO will handhold and help the CBOs (SHGs and their federations) and train them so that they will be able to take over the project after the 3 year period. The RO is expected to assist and support the Gram Panchayats to effectively discharge their functions laid down under the MGNREG Act. AFPRO was selected as a RO for Karanja Block of Wasim District in Maharashtra.

### Achievements of AJPRO under the five key objectives

- 1. **Demand Generation and Registration:** AFPRO provided hand holding support to Rozgar Sevaks and ensured thorough survey and facilitated the verification process along with GS/GRS and GP members. As an output of the diligent work of AFPRO, 23 demands were generated and registered under Kaam Manngo Abhiyan. Number of job cards holders increased in 30 target GPs from, 3-clusters, all SC/ST households are ensured of at least 75 days work in a financial year.
- 2. Integrated Participatory Planning Exercise (IPPE): IPPE plans prepared for 91 Gram Panchayats. Realistic and need based plans were developed for all the targeted GPs in a year (10 GPs in each cluster total 30 GPs). Shelf of work prepared for all targeted GPs in the year (during first year 10 GPs from each cluster were targeted). All the works were planned are executed efficiently, Soil and Water Conservation works carried out on priority.
- 3. **Capacity Building:** AFPRO conducted a four day training programme on Integrated Participatory Planning Exercise for Gramsevak, Agriculture Assisstant, Rojgar Sevak, village representatives and members of SHG from Karanja block. Project orientation meetings have been conducted in 30 villages of Karanja block. One day training for technical officers working at block level was conducted. AFPRO facilitated formation of 34 numbers of labour groups. Better response from the local community from, 30 targeted GPs during the first year. AFPRO's interventions in the project improved the understanding about MGNREGS among GP members, enhanced the capacity of Gram Panchayat and Block level technical staffs.
- 4. **Preparation of Estimates:** AFPRO provided technical guidance for estimate preparation through 5 training events for technical officers (MGNREGA staff) at block level and facilitated joint preparation of model estimates for works according to the priority decided in the Gram Sabhas.
- 5. **Timely Payment of Wages:** AFPRO is entrusted with weekly monitoring of muster preparation, timely recording and follow up with MIS team for timely payment of wages. As a result, at least 75% wages are made in time.



## CLIMATE CHANGE

Iimate change is a major challenge for India, with large scale diversity (expansive coastal areas and the Himalayan region and islands) and disparity among regions and population (dependent on the growth of its agrarian economy). India accounts for 2.4% of the world's surface area, but supports around 17.5% of the world's population. The average annual per capita energy consumption in India is only 0.6 tonnes of oil equivalent (toe), as compared to global average of 1.88 toe. India is a developing country with a per capita GDP (nominal) of around USD 1408 per annum. However, this doesn't reflect the wide disparities amongst its people and regions. Around 363 million people (30% of the population) live in poverty, about 1.77 million people are houseless and 4.9% of the population (aged 15 years and above) are unemployed. A recent national socio-economic census indicates that economic and social deprivations are much higher in terms of availability of proper houses, access to education, lifeline availability of energy, and sustainable sources of income. This is more in rural India, where 48% of the households lack basic socio economic services and were categorized as deprived. India also has the largest cattle and buffalo population in the world of about 300 million, which faces multiple challenges including diseases, inadequate supply of fodder as a result of changing climate. With a HDI of 0.586 and global rank of 135, India has a lot to do to provide a dignified life to its population and meet their rightful aspirations.

For India, adaptation is inevitable and an imperative for the development process. The broad policy framework on environment and climate change is laid down by the National Environment Policy (NEP) 2006. The National Action Plan on Climate Change (NAPCC), 2008, was implemented through Eight National Missions, outlining priorities for mitigation (Solar, Energy Efficiency and Habitat) emphasizing on adaptation (Agriculture, Water, Forestry, Himalayan ecosystem and Knowledge management). States and Union Territories have put in place State Action Plan on Climate Change (SAPCC) attempting to mainstream climate change concerns in their planning process. In the most recent Intended Nationally Determined Contribution (INDC), 2015, submitted by Government of India to UNFCCC, the country has yet again focused on adaptation, including: a) developing sustainable habitats; b) optimizing water use efficiency; c) creating ecologically sustainable climate resilient agricultural production systems; d) safeguarding the Himalayan glaciers and mountain ecosystem; and, e) enhancing carbon sinks in sustainably managed forests and implementing adaptation measures for vulnerable species, forest-dependent communities and ecosystems.

Government of India has recently set up a National Adaptation Fund with an initial allocation of INR 3,500 million (USD 55.6 million) to assist national and state level adaptation activities in areas and sectors (agriculture, water, forestry), that are particularly vulnerable to the adverse effects of climate change and will be managed by NABARD. With changing global and national focus, AFPRO's interventions to address climate change have evolved as cross cutting challenge and we have been involved in 3 climate change adaptation projects in the reporting year 2014-2015. Experiences from these projects can be utilized for incorporating pragmatic climate change adaptation and mitigation measures in watershed management, water and sanitation projects, sustainable agriculture and livelihoods projects. We are pleased to present the key achievements of the recent climate change projects in this section.



## Integrated Group Pasture Management for Improved Livestock Adaptation

To achieve the aim to minimize vulnerability of the community due to climate change, by adopting strategic adaptation practices pertaining to livestock management, both common and private pasturelands of 3 villages were taken into account. Private pastures, comprising of 33% of the total area, are usually neglected mainly due to lack of adequate resources, knowledge and awareness about benefits of small management interventions.

Goat rearing is the second major livelihood option for the tribal community of the semi-arid regions of Rajasthan. However, efficient management of fodder is a big challenge due to the variability of

Name of Project	"Integrated Group Pasture Management for Improved Livestock Adaptation"
Duration	October 2012 – August 2014
Location	Girwa and Vallabh Nagar block, Udaipur district, Rajasthan
Funding Agency	GiZ - Germany
Implementing Partner	Prayatna Samiti, Bambora – Udaipur
Beneficiaries	81 Farmer Families (HHs)

rainfall coupled with high temperature. Integrated Group Pasture Management project was very much fruitful in terms of reduction of land degradation, increasing fodder production and thereby restoring and upgrading the pasturelands.

#### **Community Capacity Building**

Social regulation has been identified as an integral component of natural resource management; and to address this, 5 Livelihood Adaptation Groups (LAG) were formed and trained on fodder and feed management with reference to climate variability, capacitating them to take common decision on various fronts. The LAGs were provided hand holding support by two trained community representatives, termed as "Adaptation Agents". Different means of capacity building such as awareness creation, Participatory Technology Development Assessment etc were involved for the purpose. For the first time, women, who traditionally had limited role to play in pasturelands, were directly involved and empowered with different management and decision making activities on pasture land development.



#### **Technical Interventions**

The sloppy terrain in the project area with no or very less vegetative cover used to cause frequent soil erosion. Different soil and water conservation measures, such as construction of CCTs, SCTs and Gradonies were able to safeguard the soil and land by reducing soil erosion to people's satisfaction. Grass seeding was undertaken as a climate adaptation/ proofing measure which supported increased organic matter content in soil, thus enhancing soil quality besides reducing soil erosion. The micro basins created around existing root stock/plants, proved to be of much help to harvest rainwater, in the event of very less rainfall. This measure has a vital impact on ridge to valley percolation indicating water recharge at valley. The pasturelands were protected from stray cattle by providing protective fence, often vegetative.

#### Outcome

Appropriate group pasture management system resulted in enhancing fodder production, as high as 159% compared to earlier. About 81.55 ha of pastureland were rejuvenated during the project period. Vibrant social cohesion in the community was re-established due to increased community interest and sense of ownership for their livelihoods and will ensure sustainability. Adoption of various climate-smart measures ensured year round fodder production, leading to no or reduced fodder purchase from external source even during drought period leading to enhanced health and productivity of small ruminants.



## **Community's Voice**

#### Mukesh Kumar Patel, Village-Sulawas



"Traditionally we were involved in pasture for removal of thorns and cutting of grasses, but we never thought of working for development in this innovative manner. Now with involvement in the project it is clear to us that if we had paid such attention, good quality fodder grasses would have never disappeared. I have developed an understanding that pastureland is an opportunity for us, as we can develop it for meeting all our fodder requirements and reduce expenses on purchase of fodder. Moisture conditions of soil will improve due to CCT and Thawala making that are taken-up and we will get those grasses back which we have seen in our childhood. Soil and water Conservation measures have really benefited me and my folks, by controlling erosion of soil and also providing manure by decomposition of leafs. It will help the trees grow faster. It is expected to have a positive environmental impact, leading to sustainable agri-livelihoods."

#### Amari Bai Meena, Aalukhera

"Every year we spend six months in pasture starting from August, in such a way that it has become second home for us. We have observed that earlier rain was evenly distributed, but now rain is inconsistent and often heavy, causing

fast runoff causing soil erosion. The dry spells are increasing day by day and all this changed pattern of rain has direct effect on the grass and tree growth. Earlier we used to have variety of grasses such as Bagdi, Hiran, Kumta, Buru, Kukadi, Paliya, Bangta, Gatiya, Dobadi, Laap, and tree species such as Neem, Khakara, Dawari, Khanni, Kher, Bair, Godan, Salar, Kanjara, Sejna and Ronj; but today we have limited number of grass and trees. The interventions taken are helping moisture conservation on slopes and diversification of grass and trees. Earlier we used to clean thorny bushes and used it for fencing but now we are aware what all is required to maintain and manage our second home".





### Climate Proofing in Watershed - Anjeni

People's participation as the central axis of the whole process, this project aimed at sustainable results and maintenance of all assets created during the project period. Short and long-term employment opportunities were explored for supporting income generation activities and entrepreneurship development in the watershed.

Activities, outputs and outcomes: With the determination to uplift the socio-economic status of the community and identifying the importance

Name of Project	Climate Proofing in Watershed – Anjeni
Duration	May 2011 – Dec 2015
Location	Lasadiya block, Udaipur District, Rajasthan (Watershed No: Micro No- 02 of Macro No-05)
Funding Agency	NABARD – IGWDP and GiZ
Beneficiaries	Total: 333 HHs (SC/ST: 306, Others: 27)

Action For Food Production

of natural resources, intensive soil and water management activities were taken up under this project. Active community contribution, in cash (10-20%) and kind, and gender balance are the most vital exquisiteness of this project. Community was intrinsically mobilized and capacitated to such an extent that they now understand the fundamentals of climate change and the potential risks associated with it.



Interventions like water harvesting and ground water recharge resulted in improving the ground water status and thereby helping crop production. Soil and water conservation activities included construction of bunds, trenches (CCT/ SCT), gradonies and gully plugs. Soil health card distribution and soil test based fertilizer recommendation were the most eminent action taken to promote need based fertilizer application and reduce further deterioration of soil environment. The mini agro met lab which was installed is successfully delivering weather advisory, which is helping the farmers to plan their farming schedule accordingly.

Mixed cropping of maize with pulse crop (either 'Tuar', Soybean or Sesame), helped the farmers avoiding complete crop failure due to delay in monsoon in 2014. Other Climate Smart agricultural interventions include integrated farming systems with horticulture and silvi-pasture development. These practices provided balanced domestic nutrition and additional income, besides maintaining agro-biodiversity, under climate proofing umbrella of Anjeni watershed. Pastureland development using various drought resistant grasses as well as promoting indigenous hardy trees like *Ziziphus jujube* (Ber) was another integral component to enhance fodder production for the livestock and also to reduce the pressure of overgrazing which contribute to land degradation.

To ensure sustainability in any programme, community capacity building and institutional building are the most inevitable parameters. Apart from creating and strengthening SHGs, a village watershed committee (VWC), involving both men and women, was formed for the maintenance and management of the watershed. This VWC is playing the vital role in decision making for various activities in the project area. In addition, linkages were established between the community and the local agricultural universities and Government departments.





Fallow land being converted to Agril Land

#### **Issues and Challenges**

- Since the community is getting free of cost benefits under several government schemes, some beneficiary farmers were reluctant for cash contribution. It took great effort to mobilize them initially.
- Under the present scenario of shortage of availability of labourers and prevailing high wage rate, accomplishing the desired tasks/work within the stipulated timeframe posed a serious challenge.







#### CASE STUDY - 1

**Systematization of Agriculture for Sustainability and Income Generation:** Sri Lachiya Bhagana, a 45 year old farmer of Anjeni village was following age-old agricultural practices; growing only Maize in kharif and wheat in rabi. He was least aware about the improved practices like mixed cropping or inter cropping. This programme provided him a new understanding about farming when he was capacitated through trainings on improved agricultural practices. He started intercropping maize with urad and wheat with vegetables; adopting improved inputs (seeds, manure) and methods. Integration of cereal crops with vegetables has proved to be the best possible options, according to Sri Lachiya, who had been facing the uncertainty of rainfall due to climate variability. Besides claiming nutritional benefits and satisfaction he has made an additional income of about Rs. 5000 as a result of his new venture.

#### CASE STUDY - 2

**Systematization of Growing Vegetables for Additional Income Generation:** Smt. Vagtu Bhera, a 40 years old homemaker, had limited role in agriculture other than just helping her husband in farm operations. Due to low and erratic rainfall, in combination with poor soil quality and traditional agricultural practices, her family could barely meet their food demand because of frequent crop failure. This led to a complete disappointment and put her under tremendous pressure. Under this programme, she started growing vegetable crops as additional income generation activity. Very smartly, she grew a blend of various vegetable crops, which were bordered by maize and bajra. Smt. Vagtu was successful in getting improved yields and enhanced the family income by more than Rs. 4000. Change in food habits and mindset about nutrition was another crucial success.







Vegetable Cultivation in Anjeni



### Water and Climate Resilience Program

FPRO successfully concluded this project in Sinhar watershed area of semi-arid Bhinder Block in Udaipur District of Rajasthan in March, 2015. The major facets of climate variability and climate changes in the area include delay and inconsistent monsoon, and variability of rainfall pattern. Since agriculture and allied practices, are the major livelihood options in this area, the unpredictable rainfall distribution severely impacted the food security of the community. The farmers identified adaptation options for agriculture systems, animal husbandry and forests to undertake climate resilient practices.

Name of Project	Water and Climate Resilience Program (WACREP)
Duration	October 2013 – March 2015
Location	Block-Bhinder, District – Udaipur (Rajasthan)
Funding Agency	Global Water Partnership through India Water Partnership (IWP)
PIPs (with reference to location)	Apna Sansthan to support AFPRO in mobilization of community and implementation at local level
Beneficiaries	1570 HHs from 10 villages

(e.g. stone fencing, CCT, SCT,

Action For Food Production

Thawlas, Gradonis etc.)



"Vulnerability Assessment to Climate Change Impact on Agriculture, Animal Husbandry & Water Management and Development of Adaptation Framework for the Region" explaining the Impact and consequences of climate change and mitigation strategies

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#### Outcome, Outputs and Impact on the community:

The two assessment studies revealed that erratic and inadequate rainfall resulting in water availability related issues are the most crucial and potential impacts of climate change in the project area. Agriculture and livestock are the major resource of employment and livestock for the people in the study area.

The vulnerability analysis helped the community to identify negative impacts on land and water bodies Adaptive interventions like developing new pasture lands, revival of traditional crops, change in cropping pattern, and growing horticultural crops; developing interest in rearing upgraded high yielding, disease resistant and climate tolerant goat breed (Sirohi buck); adoption of decentralized water harvesting in upper levels using low cost structures; location specific soil and water conservation measures, were made. All these climate smart agricultural practices were implemented through forming and empowering Farmers Field Schools (FFS). One of the achievements of the project is that farmers started linking water related issues with climate change; linkages of water availability in wells with water recharge possibility, checking rainfall status and run-off.

#### **Cross cutting issues**

- Environmental/climate change adaptation
- Community participation
- Gender balance
- Convergence with government
- Coordination with local NGO partners
- Sustainability

#### Challenges

- Difficulty in mobilizing the community
- Shortage/unavailability and high wage rate of labourers
- Difficulty in linkage development with line departments

Way forward: Rainfall being an intrinsic component regulating the people's livelihood in the project area, it is of utmost importance to capacitate the community to adopt strategic adaptation approach with respect to water management, both demand and supply side. In spite of the successful conclusion of this project, there are still plenty of scope to take this work further to achieve better community stability and sustainability against the vagaries of climate change. AFPRO is very much keen to build up the capacity of socio-environmental system to adapt with the climatic stresses and reorganize water availability and consumption processes through area specific interventions involving local community and local bodies. Community capacity building, intensive soil and water conservation measures, creation/renovation of (existing) water harvesting structures are a few activities to be mentioned specifically which could be taken much further for the betterment and sustainability of the community.



**DISTRIBUTION OF BUCKS** 

**EFFECT OF SWC MEASURES** 



## Adapting to Climate Change in Drylands a Community Based Research Initiative



The project was distributed into Six Work Packages -

In addition to the research objectives (WP 1-3) of this study, aiming to better understand the conditions required for successful community-based adaptation (CBA) to extreme events in India, the project also aimed to contribute to capacity building at various scales (WP 5). In WP 4, a prioritization approach based on multi-criteria analysis with a participatory focus was applied to assess how local communities and local officers assess adaptation options in response to climate change. On the basis of consultations with drought-affected communities and district-level officers in Jalna district, a long-list of 26 adaptation options pertaining to agriculture, water and social development were identified. The stakeholders (block-level officers, village cluster level participants) were asked to rank criteria and score these adaptation options. Different groups of stakeholders (farmers, landless labourers, women, and youth) helped us understand the diversity of adaptation priorities across scales, and across different stakeholder groups within a community.



Results indicate considerable agreement about some adaptation options, like construction of water conservation structures and educating youth, but sharp differences with respect to others. Some options, like integrated farming system received high scores from officers, but were relatively unfamiliar to farmers; conversely, farmers appreciated the need for measures like groundwater regulation and water budgeting, while officers deemed them unfeasible. Women were less aware of policy-type options, but gave high scores to good practices like water conservation, drip irrigation, and to social options like women's capacity building and strengthening of self-help groups for credit.

The capacity building approach of the EVA project (WP5), has been driven by three overarching goals of 1) the need to build awareness of local communities (men and women) 2) the need to sensitize local policymakers, practitioners and community and institutional leaders and 3) the need to build the capacity of young Indian researchers.

With these goals, the EVA team developed and implemented a capacity building approach for diversified stakeholders. For community, mutual learning through participatory activities and sharing of best practices through community workshops were identified as the key approach to capacity building. Continued engagement and involvement through different practical activities were preferred by researchers and local practitioners. The Government officials, at all levels, were more comfortable with sensitization through individual interaction and workshops.

A final workshop, held in Mumbai, on 7 June 2014, titled <u>Science and Policy Dialogue on Extreme Events and Adaptation</u> in Maharashtra', marked the culmination of two years of research and capacity building activities carried out with the support of the Norwegian Embassy in India and implemented by Action for Food Production (AFPRO), in collaboration with The Energy and Resources Institute (TERI), Norwegian CIENS institutes Norwegian Institute for Urban and Regional Research (NIBR), Norwegian Institute for Water Research (NIVA), and Center for International Climate and Environmental Research in Oslo (CICERO).

The Government of Maharashtra demonstrated its support to this project by including this event in the Department of Environment's programme for World Environment Day. The Hon'ble Chief Minister of Maharashtra, Shri Prithviraj Chavan inaugurated the event, and the Environment Minister Mr Sanjay Deotale and State Environment Minister Mr Sachin Ahir also spoke on the occasion.

Dr Trond Vedeld, Senior Researcher, NIBR, presented the highlights of the EVA project to an audience of about 600 persons from government, academia, and civil society. Senior representatives of government organizations that are key to implementing the messages of the EVA project, such as the Marathwada Agriculture University, National Bank for Agriculture and Rural Development (NABARD), Yashwantrao Chavan Academy of Development Administration (YASHADA), and India Meteorological Department (IMD) participated in the panel discussions. Non-governmental organizations that are actively engaged in building agricultural and social resilience in Maharashtra, like the Watershed Organization Trust, Tata Institute of Social Sciences, and Action for Agricultural Renewal in Maharashtra (AFARM) participated in the event. Most importantly, farmers from Jalna District shared their experiences on combating drought.

AFPRO, through this dialogue, provided a platform to share the voices from the grassroots with key policymakers and practitioners, and made an enabling environment to understand the constraints faced by each stakeholder and identify each other's needs and identify prioroties for supporting and scaling up community based adaptation (CBA) in the State.

The project was evaluated by independent consultants appointed by the Norwegian Embassy. Their key recommendations include a north-south institutional collaboration for furthering the work on climate change adaptation in the drylands of India and the use of EVA project villages for demonstration purposes by the district administration and state environment departments. Since community based adaptation (CBA) options were identified under the project, dovetailing with ongoing/future watershed dry land programs in Jalna was recommended as the preferred approach. However, with additional support required, we are leading efforts to establish linkages with plausible partners from Norway.

The EVA project is one of the numerous efforts of AFPRO to contribute to shaping policy and guiding of national level dialogues on mainstreaming of climate change adaptation into development programmes. While, global economies formalize their Intended Nationally Determined Contributions (INDC) to reduce emissions of Green House Gases (GHG) emissions, and international support aggressively being mobilized for the same; financing adaptation programmes needs to be encouraged more so now than ever before. With a repository of information and knowledge built over four decades, the climate services agenda through the domains of climate science and information services, climate vulnerability and adaptation, climate mitigation services and mainstreaming services need to be explored; building adaptive capacities of multiple stakeholders to climate change in the process.



## WATER AND SANITATION

The Swachh Bharat Mission (SBM) campaign launched by the Government of India has the potential to transform the lives of people in the country. The use of toilets, safe treatment and disposal of human body waste and hand-washing with soap are essential for the country to progress. In the process, India will also shed the unenviable tag of being home to the largest number of people worldwide who practice open defecation. AFPRO is committed to support SBM through implementation, research and advocacy work.

AFPRO's programmes on water and sanitation focus on providing socio-technical services to rural communities and local level organizations to enhance capacities and address water and sanitation related issues. Drinking water security was guided by the objective to increase groundwater availability, improve drinking water scenario and promote income generation activities. We focus on improve rural water supply, planning and management of water resources including preparation of water budgets, implementation of Village Water Security Plans (VWSP), training of local institutions, orientation of government departments, monitoring of progress and evaluation of impacts. The importance of corporate funding and investments are recognized and highly appreciated/acknowledged by AFPRO (LAFARGE in Chhattisgarh, BILT in Odisha, MONSANTO in Maharashtra, Daman and Diu, Andhra Pradesh, Telengana and Karnataka). However, it is strongly felt that the focus and contribution of CSR funds need to be beyond the hardware and should focus on knowledge, attitude and practices (that is on behavior change) for sustainability of the hardware supports.



### Creating and Enabling Environment for Drinking Water Security

he government of Chhattisgarh has made considerable efforts in the recent past to increase household coverage, operation and maintenance of drinking water facilities. Yet access to adequate drinking water by rural households continues to be a challenge.

With the objective to increase groundwater availability, improve drinking water scenario and promote income generation activities, AFPRO continued to developing drinking water by strengthening existing drinking water infrastructure. Technical assistance was provided to improve household coverage of drinking water by restoring the functionality of several hand pumps and by attending minor defects in them.

Name of Project	Provision of safe & adequate Drinking water supply and promotion of Rural Livelihood through Farm sectors and allied Interventions - Jaljivika Pariyojana
Duration	April 2014 - January 2015
Location	4 villages, Masturi Block of Bilaspur distict, Chhattisgarh
Funding Agency	Lafarge India Private Limited, Bilaspur
Beneficiaries	5520 Persons

Similarly, with the construction of a cistern and an underground storage tank, local communities are now able to store their water for drinking purposes. The beneficiaries of these drinking water structures have been motivated to contribute nominal amounts towards operation and maintenance.

In order to develop farm and off-farm based livelihoods, farmers were empowered to adopt System of Rice Intensification (SRI), kitchen gardens and azolla cultivation. Farmers trained on SRI, started practicing in their fields. Farmers used waste water from hand pumps effectively to cultivate vegetables (cabbage, chilli, cauliflower, raddish, green leafy vegitables, brinjal and tomato). However, the use of azolla as a substitute nutritional feed for livestock met with limited success.

### Project outputs during the reporting period

- > 65 families benefitted through construction of a cistern
- > 95 families benefitted with access to drinking water through repair of hand pumps
- > 40,00,000 litres of storage created through construction of ponds to provide water for domestic purposes
- > Farmers trained on System of Rice Intensification (SRI), kitchen gardens and on azolla cultivation



Chilhatti Pond after Renovation



Soakpit Chilhatti Lafarge



SRI Jaitpuri Lafarge



### Developing Existing Water Resources to Strengthen Livelihoods

FPRO repaired two and half kilometers of a waste water channel with the participation of the local community. The suitability of waste water utilization for irrigation purposes though needs to be ascertained, Water User Groups (WUG) were being trained to regulate the use of waste water for irrigation, and the farmers are being mobilized to adopt 'safer irrigation' options (rainwater harvested in ponds demonstrated a

Name of Project	Water Project
Duration	April 2014 – March 2015
Location	12 villages, Jeypore, Koraput, Odisha
Funding Agency	BILT Unit Sewa – Jeypore
Beneficiaries	1945 Persons

'safer' irrigation alternative). Risk of bacterial contamination of drinking water has been mitigated by repairing platforms around hand pumps.

Farmers were trained and are reported to be practicing SRI in 29.2 acres. Vegetable cultivation was introduced and practiced in 7.45 acres. AFPRO developed the resilience of farmers with no-regret adaptation option of vegetable cultivation, which not only increased nutritional intake of the farmers but also helped them in securing economic resilience through sell of vegetables in the local markets. Sustainability was ensured by facilitating linkages with departments of horticulture and agriculture for access to modern technology and improved inputs.

With limited information on the long term impact of consumption of agricultural produce cultivated in waste water, there is a need to support sustainable agriculture based livelihoods, including rainwater harvesting as an immediate solution to the growing demand of water for agriculture.



**Brinjal Cultivation of Siadimal** 

WUG Consortium Meeting at Banuguda



Skill up Gradation of Women in Line Transplantation of Paddy at Deraguda

SLT of Keshaba Paraja, Gaudasahi



### Water Security Plus: Making Gram Panchayats Drinking Water Secure

he National Rural Drinking Water Security Pilot Project is an effort to demonstrate the effectiveness of water security and water budgeting as approaches to planning, implementing and monitoring and managing water resources. Five pillars of this approach include source sustainability, system sustainability, sustainable service delivery, institutional sustainability and sustainable sanitation and hygiene.

With utilizable water resources in India – surface or groundwater – more less constant, populations projected to increase and stiff competition amongst multiple sectors for its use, there is a growing concern that several regions in India will become 'Water Stressed' and eventually 'Water

National Rural Drinking Water Security Programme (NRDWSPP)
July 2012 – July 2015
12 villages, Jeypore, Koraput, Odisha
30 GP, Mulbagal block, Kolar district, Karnataka
Panchayati Raj Engineering Department (PRED) and Zilla Panchayath
1,73,652 Persons

scarce'. This concern increases in the peninsular states, where groundwater has developed under complex hydro geo thermal conditions. Climate change, further aggravates the situation. Supporting the National Rural Drinking Water Security Pilot Project (NRDWSPP) in achieving its goal of an improved rural water supply, AFPRO demonstrated water security approach to planning the management of water resources including preparation of water budgets, implementation of Village Water Security Plans (VWSP), training of local institutions, orientation of government departments, monitoring of progress and evaluation of impacts.

The Ministry of Drinking Water and Sanitation (MoDWS), through Support Organization (SO), have implemented the five components of the National Rural Drinking Water Security Pilot Project (NRDWSPP) in 15 overexploited blocks in India.

AFPRO, as a Support Organization (SO), made efforts to manage demand and supply of groundwater in 30 GPs, Mulbagal block, Kolar district. According to baseline water budgets, the estimated use of groundwater for drinking and domestic purposes was negligible, with over exploitation being attributed to irrigation. Different approaches, namely, reduction in the gross cropped area, increase in the area under drip irrigation, shifts in cropping patterns and policy support for low water intensive and market oriented crops were relied on to regulate the demand of groundwater

for irrigation by receptive farmers in all the 30 GPs. Additionally, efforts were made to develop/rejuvenate/renovate surface water bodies (tanks, ponds, kalyanis, school rooftops, recharge pits etc) as alternate sources of irrigation and groundwater recharge. AFPRO provided its technical support by the use of Groundwater Prospecting Maps (GWP) developed by the National Remote Sensing Centre in preparation of source sustainability plans, especially in the identification of effective groundwater recharge sites.

Rapid expansion of new drinking water bore wells and an improvement in piped water supply system, facilitated by trained VWSC, was considered. A general decline in groundwater levels and special efforts made by the SO in interpretation of water budgets and recommendation of tanker facilities in water deficit villages was recommended. Experiences from approaches to improve the efficiency of piped water including water tariff fixation and collection, through exposure visit to an improved water supply system in Dakshin Kannada was provided to the villagers.

AFPRO assessed the training needs of diversified stakeholders (local community, farmers, Village Water and Sanitation Committees (VWSC), Swatchtadoots, Gram Panchayat (GP) and Taluk Panchayat (TP) members; district and block level core groups and Departments of Agriculture, Horticulture, Sericulture, Rural Development and Panchayati Raj and District Water and Sanitation Mission (DWSM). Special attention towards the performance of VWSC, Swatchtadoots/Community Mobilizers in achieving ODF, monitoring of rain gauges and observing groundwater including the need for additional support were drawn.



The project reaffirmed the robustness and comprehensiveness of water budgeting as a tool for planning the management of water resources. These include the sustained utility of water budgeting, water use efficiency methods, allocation of budgets for groundwater recharge measures, alternate employment generation options livestock etc, livelihood options with a low water demand and energy efficient irrigation etc.



#### Groundwater Balance/Groundwater Budget Mulbagal Taluk, Kolar district Karnataka

Village Water Security Plans (VWSP) need to be placed before the State Level Scheme Sanctioning Committee (SLSSC) for approval and allocation of budgets. While the main components up for consideration are development of drinking water infrastructure, scientific exploration of groundwater, delineation of water quality affected zones, water treatment options and piped water supply (sustainable service delivery). Since, significant progress in household sanitation has been achieved; declaration of Open Defecation Free (ODF) villages will be the next immediate target in all 30 GP's.

Our experience of partnering as a Support Organization in the National Rural Drinking Water Security Pilot Project has strengthened technical competencies in execution of scientific tools like water budgeting in planning the management of water resources.

Convergence of technical and financial resources including sanctioning of central and state budgets through Departments of Water and Sanitation, Public Health and Engineering, Panchayati raj and Rural Development, Land resources, Agriculture, Horticulture, Sericulture and Groundwater was found to be critical, though there is immense scope of leveraging funds from existing priority programmes like National Rural Drinking Water Security Programme, Swatch Bharat Mission (SBM), MGNREGA, Integrated Watershed Management Programme (IWMP) and National Rural Livelihoods Mission (NRLM).

Need of teams of multi-disciplinary professionals, especially experienced hydrogeologists and with a fundamental understanding of the science of hydrogeology if felt. The National Aquifer Mapping and Management Programme (NAQUIMP) recognized the strength of this set of stakeholders and was designed to include them in the participatory management of groundwater. Designing cadre building programmes for professionals on water budgeting including the application of Groundwater Prospecting Maps, to build knowledge and skills, is recommended.

Further, farmers and village level institutions were found to be central in the management of groundwater resources and therefore, approaches needs to be specifically designed to encourage their active participation and engagement in water budgeting and drinking water security plans (DWSP).

With the project supporting the strengthening of local weather monitoring network, especially rainfall, and village institutions were trained to operate the rain gauges, progress towards 'Climate Smart' approaches has been made; gradually building adaptive capacities in the process.



Project impacts during	g the reporting period
Baseline (2012)	End line (Till March, 2015)
<ul> <li>Stage of Groundwater Development 235.40%</li> <li>Drinking &amp; Domestic Water 418.85 ham</li> <li>Crop Water Utilization 14826 ham</li> <li>78% Households without access to toilets</li> <li>25 functional rain gauges</li> </ul>	<ul> <li>Stage of Groundwater Development 192.74%</li> <li>Drinking &amp; Domestic Water 431.42 ham</li> <li>Crop Water Utilization 5778.22 ham</li> <li>58% Households without access to toilets</li> </ul>

#### CASE STUDY

Demonstrating the impact of the Drinking Water Security approach for planning the management of groundwater resources: Experiences from Amblikal Gram Panchayat, in Mulbagal block, Kolar district, Karnataka.

Amblikal Gram Panchayat is one of the 30 GPs in Mulbagal block of Kolar district. It has nine revenue villages and 17 habitations with 1534 households. The drinking water scenario in this GP can be described in terms of an average LPCD of 29 liters (with high intra GP variability - 12 – 193 LPCD), distribution and storage systems (102 public taps, 257 household connections, 6 Over Head Tanks (OHT) and 39 cisterns. These are indications of insufficient drinking water for humans and livestock, inadequate household toilets, poor coverage of piped water supply and poor operation and maintenance of drinking water infrastructure, and drains for managing the solid and liquid waste generated. Further, there are seasonal fluctuations in the availability of water with sources going dry, several drinking water sources identified as quality affected and a general decline in groundwater tables. The increase in population only add an additional pressure to strained water resources.

In order to demonstrate the drinking water security approach, VWSC members, Panchayat Development Officer's (PDOs), youth representatives from different villages, farmers owning bore wells, watermen, agnawadi workers, SHG representatives, Gram Panchayat (GP) members, GP Presidents and GP level staff were empowered to make a water budgeting exercise. The water demand included consumption of water for drinking purposes and crop irrigation, while supply included percolation due to precipitation, surface water bodies etc. The Groundwater Prospecting Maps were used in the preparation of both the water budgets and the Village water security Plans.

Ambalikal GP was categorized as an over exploited Gram Panchayat (538.92%). 1,407 hectaremeters was the estimated demand. However, the estimated availability was only 261 hectare meters. Due to the cropping patterns in this GP, 1,379 hectare meters of water are consumed for irrigation (type of crops), accounting for 97.96% of the total demand.

The Village Drinking Water Security Plans (VDWSP) included components to address adequate water availability, potability, convenience, affordability, source security and equity. The suggestions received from the local community were incorporated. These plans were then approved by the Gram Panchayat.

The Drinking Water Security Plan prepared in this GP was implemented with the support from the Department of Panchayati Raj and Engineering (PRED), Agriculture, Horticulture, and Sericulture, converging with the NRDWSP, Swatch Bharat Mission (SBM) and the Mahatma Gandhi National Rural Employment Scheme (MGNREGS).

The interventions included, drilling of additional bore wells, deepening of wells, provision of piped water supply, construction of toilets, drip irrigation, plastic mulching, reduction in gross cropped area, change in crops cultivated, de-silting of irrigation tanks and artificial recharge. With the implementation of the Drinking Water Security Plans, the water budgets progressively declined to 468% in 2013 and 128.57% in 2014. Irrigation recorded the steepest decline (266.15 hectare meters in 2014 from 1379 hectare meters in 2013). An improvement in per capita water availability to 55 LPCD was recorded, which is substantial from the baseline of 29 LPCD. Further access to household level water improved with 760 additional households being provided with piped water supply. AFPRO successfully facilitated construction of 673 additional toilets. Preliminary inter GP comparisons indicate that farmers from this GP have contributed the greatest in terms of regulating their dependence on groundwater.



## Improving the Quality of Life through Support to Water, Sanitation & Livelihoods

FPRO in an effort to contribute to the goal of ensuring adequate and safe drinking water at the household level, is collaborating with Monsanto to improve the quality of life through Integrated Development of Water Resources.

Issues of increased chemical contamination, inadequate access and weak community based management of drinking water systems and insufficient water conservation, are being addressed through this project.

Villagers were assisted with installation of Reverse Osmosis (RO) plants. Groundwater recharge was demonstrated by constructing soil and water conservation measures – ponds and nala bunds.

Name of Project	Improving the quality of lives of people with distress through adoption of integrated approach for Water, Sanitation and Women Empowerment in 25 villages of five districts, Maharashtra
Duration	July 2013 to June 2015
Location	25 villages, 5 Blocks, Maharashtra
Funding Agency	Monsanto USA
Beneficiaries	950 school children and 8653 villagers

Environmental sanitation and personal hygiene awareness camps are conducted in all the 25 villages to promote liquid and solid waste management practices. Use of garbage bins were demonstrated in one village.

Village water sanitation committees (VWSC) were empowered with simple water treatment measures and motivating locals to consume treated water ensuring both access to drinking water at the household level and equality in distribution.

Since every household still does not have a toilet, the community was obilized to construct toilets. Funds were leveraged from Nirmal Bharat Abhiyan (NBA) and Mahatma Gandhi Rural Employment Guarantee Scheme (MNREGs) to meet the additional demand. School sanitation too was included within the scope of the project with toilets constructed/repaired in schools to support the Swatch Bharat Mission. The designs of the toilets/ urinals have been modified with separate toilets for girls and boys. A gender sensitive sanitation practice has addressed a growing demand to prioritize access to improved school sanitation facilities.

Micro enterprises (goat rearing, poultry, spice grinding, stationary shop, garments and tailoring centre, milk collection centre, thresher machine, flour mill, sanitary napkin making), to economically empower rural communities, especially women (8 SHGs), were supported. Additional funds (as loans) were mobilized from local financial institutions and government departments.

#### Project outputs during the reporting period

#### **Drinking Water**

- > 3 Reverse Osmosis plants of 2000 LPH installed in three clusters
- > 770 households were provided with piped water supply
- One borewell was drilled
- > 19,603,000 liters of water was conserved through construction/renovation of ponds, nala etc.

#### Sanitation

- 515 household toilets were constructed
- 5 school toilets were constructed and 4 were repaired for boys and girls
- > 10 urinals were constructed and 4 were repaired in schools

#### Women Empowerment

- 4 women SHGs were trained on book keeping and linkage building
- > 28 women SHGs were provided loans to set up micro enterprises



### **CASE STUDY**

Demonstrating integrated approaches of access to adequate drinking water, sanitation, water conservation and women empowerment.

Pokhri Sinkhed is a village located in Jalna block with 236 households. Poor maintenance of the piped water supply system by concerned departments and inadequate technical competencies among village institutions to repair damages led to unscientific and inappropriate modifications in the supply network.

Interventions were made to ensure that every household has access to adequate drinking water. Trained engineers redesigned the entire piped water supply system. Groundwater recharge is ensured by creating one pond, with a storage capacity of 5419 cum.

This village has achieved 100% coverage of household piped water supply and 43% can be safely declared as open defecation free.





# WATERSHED MANAGEMENT

n India, rainfed areas constitute 55 per cent of the net sown area of the country and livelihoods of about 40 percent of human population living in these areas is dependent on the rainfed agriculture or land based livelihoods resources. These regions are susceptible to drought, land degradation and environmental stress. The rainfed agriculture in these areas is characterized by low level of inputs, constraints in water availability, poor forward & backward linkages to markets and low levels of agricultural productivity. Integrated watershed management is the only viable option to harness the agricultural production requirements in these arid and semi-arid regions. Watershed management does not limit merely to harnessing the land and water resources, but it also covers establishing and capacitating the people's institutions for integrated management of natural resources for sustainable livelihoods through NRM based entrepreneurial engagements. Integrated watershed management results in prevention of soil run-off, groundwater recharge and regeneration of vegetation which enable introduction of diversified agricultural activities for sustainable livelihoods of dependent poor and marginalized farming communities.

A comprehensive watershed planning approach can help to protect and restore water resources. The active participation of the beneficiary farming community in planning and implementation of watershed activities, better capacitates them to ensure proper maintenance of assets developed in post project scenario. Hence, capacity building of all stakeholders is crucial for ensuring active participation of farming community. Further timely monitoring of project activities and evaluating its impact for introducing timely corrections in project designs and implementation approaches is critical for efficient use of resources.

In this background, it is crucial to positively influence the outcomes of the ongoing Integrated Watershed Management Programme for better delivery and impacts through improved planning approaches, capacity building and convergence. Therefore AFPRO through its regional offices this year also continued its active engagement for providing technical services for integrated watershed management in the areas of capacity building, monitoring and evaluation and taking up pilots for watershed implementation with innovative approaches. The participatory designing of models for climate change adaptations and risk reduction systems for watersheds is also need of the changing climate scenarios, and therefore it is also attempted on pilot basis, which is elaborated in the climate change chapter.



### Institutional Capacity Building under the Integrated Watershed Management Programme

Building capacities of technical experts and programme management staff is crucial for ensuring appropriate planning and timely successful completion of programme following proposed processes within the resources of community based development programmes, for achieving targeted outcomes and results.

For the fifth consecutive year, AFPRO continued to extend services as one of State Resource Organization (SRO) to YASHADA under this

	Name of Project	Institutional Capacity Building under the Integrated Watershed Management Programme
	Duration	2014 to 2015
	Location	Amravati & Yavatmal
	Funding Agency	YASHADA, Pune
	Beneficiaries	259 government officials
÷.,		

programme to conduct the capacity building events for project stakeholders on different modules for Amravati and Yavatmal districts of Maharashtra state. YASHADA, Pune is the State Institute for Rural Development working as Apex agency to implement various capacity building programs for stakeholders under Integrated Watershed Management Programme (IWMP). The stakeholder includes Vasundhara State Level Agency, Watershed Cell cum Data Centers, Project Implementation Agencies and Watershed Committees members, for conducting capacity building events on various themes of programme.

Capacity building is a continuous process which enables functionaries to enhance their knowledge and skills and develop the correct orientation and perspectives thereby becoming more effective in performing their roles and responsibilities. Trainings have been conducted as 10 day modules for building the professional capacitates of Community Organizers, Livelihood Experts and Agriculture Experts and 5-day modules for Agricultural Assistants & Agriculture Supervisors. The AFPRO team has conducted 8 capacity building events for training of total 259 government officials under IWMP during 2014-15. The details of Activities completed during 2014-15 are as follows:

No.	Training Theme	Districts allotted to ARO	Stakeholders	No of Events	No of Participants
1	Social Mobilization	Amravati & Yavatmal	Community Organizer, Livelihood Expert, Agriculture Assistants, DRO Master Trainers	1	24
2	Livelihood Promotion	Amravati & Yavatmal	Community Organizer, Livelihood Expert, Agriculture Experts, Agriculture Assistants, Agriculture Supervisor, DRO Master Trainers	3	89
3	Agriculture Management	Amravati & Yavatmal	Agriculture Experts, Agriculture Assistants, DRO Master Trainers	3	96
4	Agriculture Engineering	Amravati & Yavatmal	Agriculture Experts, Agriculture Assistants, Agriculture Supervisor, DRO Master Trainers	1	50
			Total	8	259

These training of the stakeholders led to building of their capacities for effective social mobilization, implementations of this programme for sustainable land and water resources using scientific agricultural engineering techniques and agricultural management principles and livelihood promotion through micro-enterprises established by the watershed communities.

In absence of proper support system to the local panchayats, the institutional sustainability becomes a challenge. Hence, there is ample scope and need to continue such capacity building efforts for creating trained professionals at field level for effective implementation of IWMP. Also there is a scope and need to train stakeholders on application of hydrogeology principles & techniques in watershed management and use of groundwater prospect maps (prepared by National Remote Sensing Centre for public use) in identifying best locations for conducting groundwater recharge structures such as check dams and percolation ponds.

### Monitoring, Evaluation, Learning & Documentation (MELD)

onitoring, Evaluation, Learning & Documentation (MELD) system is a crucial component of IWMP programme for tracking the near real time progress and performance of the project, streaming the processes and interventions, documenting experiences for shared learning, recommending possible mid-course corrections and assessing impacts of interventions.

Integrated Watershed Management Programme (IWMP) is jointly implemented by Water Conservation Department, Government of Maharashtrsa in all thirty three rural districts with financial assistance and as per Common guidelines

Name of Project	Monitoring, Evaluation, Learning & Documentation (MELD)
Location	Ahmednagar, Pune and Solapur district
Funding Agency	Vasundhara Watershed Development Agency, (VWDA) Pune
Duration	2013-2018
Beneficiaries	Farmers in 93 watershed Projects (Batch I, II, III & IV) covering 406504.36 ha

(Revised 2011) issued by Ministry of Rural Development, Govt. of India. Last year, Vasundhara Watershed Development Agency has appointed AFPRO as third party agency for MELD of 93 watershed projects being implemented in Pune Agriculture division covering Ahmednagar, Pune and Solapur districts under IWMP batches I to IV (2009-2013). MELD proposes to monitor processes, outputs and outcomes along with documentation to assess and ensure conformity of the progress towards intended project objectives on periodic basis and recommend possible mid-course corrections.

During last year, AFPRO established a functional MELD system by appointing core and field teams and completed Preparatory Phase Evaluation of six watershed programme components (Entry Point Activity, Project Implementing Agency (PIA) & Watershed Development Team (WDT), Village level institution building, Detail Project Report, Natural Resource Management and Capacity building) in 55 watershed projects. Further, in 2014-15, AFPRO team completed Preparatory Phase Evaluation of 20 watershed projects of Batch III by involving Watershed Committees and PIAs and submitted evaluation reports. AFPRO team held close consultations with various stakeholders for preparing Monitoring Evaluation Plans and prepared M&E questionnaires and templates/checklists/schedules.

AFPRO Team conducted Concurrent Process monitoring and Compliance Tracking monitoring on monthly basis. Half of the 93 projects were covered under process monitoring and rest half of the projects were covered under compliance tracking monitoring in each month during the reporting period. The reports were submitted to Additional CEO and JDA Pune. AFPRO Team conducted the quarterly progress monitoring for all four quarters during April 2014-March 15 covering all 93 watershed projects in each quarter. Reports were prepared highlighting the quarterly progress against plan and reasoning for progress



**Concurrent Process Monitoring visit** 

for each PIA, reasoning for slow progress and submitted to VWDA. The team shared learning in the workshops conducted at block level in Ahmednagar and Solapur district and at WCDC level in Pune district. On half yearly basis, Community Based Monitoring was conducted as a joint review exercise along with Watershed Committee and Project Implementing Agency in each watershed project covering one watershed committee and provided facilitation support in one another watershed committee of that project. The reports were prepared reflecting on the qualitative assessment of achievement against plan and community action and submitted to VWDA.



### Periodic Impact Monitoring of Cement Nala Bunds

G overnment of Maharashtra through water conservation department has constructed 1500 CNBs in 443 villages in 15 talukas of six districts of Maharashtra namely Sangli, Satara, Solapur, Pune, Ahmednagar and Osmanabad. Government assigned an independent monitoring of 80 villages from the six talukas, to 6 agencies. Action for Food Production (AFPRO) is selected for the assignment in Purandar taluka of Pune district. In Purandar block 33 no of CNB spread in

Name of Project	Periodic Impact Monitoring of Cement Nala Bunds
Duration	September 2014 to June 2016
Location	Purander taluka, Pune
Funding Agency	Water Conservation Department, Pune
Beneficiaries	Farmers in 8 villages

Action For Food Production

8 villages were assigned to AFPRO for periodical impact monitoring.

Sr No	Circle Agriculture Office	Name of Village in Purander Block	No of Cement Nala bunds evaluated
1	Jejuri	Pingori, Daundaj, Sakurde,	7+4+1 = 12
2	Pisarve	Pargaon, Khanwadi, Pandeshwar, Malshiras	5+2+6+3 = 16
3	Parinche	Kaldari	5

Based on the qualitative and quantitative parameters physical verification & primary field survey and collection of secondary information of 33 Cement Nala Bands was completed. Also survey of 132 wells and structured interviews of 144 beneficiary farmers was completed. Also the rainfall data of 8 villages was analyzed.

The following were the Key findings and observation in the project villages

- CNBs played an important role in impounding water and its infiltration resulting in recharging of the groundwater in the area of influence of the CNBs. In villages having more number of CNB, the impact on water level and water availability period was visible. The sites were found to be feasible for construction of CNB. The CNBs in upper and middle catchments were more useful for recharging groundwater
- Due to increased water availability, famers in Pandeshwar, Malshiras villages diversified to Onion farming. Also cultivation of pomogranate and custard apple had been newly taken up in the farms close to CNB. In spite of low rainfall, the adverse impact on farming in the CNB areas was less.
- From the structured interviews, it was observed that the farmers were satisfied with the work and shared their experiences of positive impact of the CNB on cropping pattern
- Siltation and sedimentation in CNBs was less, as soil conservation works were done the upstream sides of the CNBs through other government schemes. Also, the beneficiaries are willing to take up Widening and Deepening of Exiting Structures in due course of the time. In Pingori, Pandeshwar and Malshiraj villages works of Nala Widening and deepening were carried out.



### Flow Irrigation Scheme and Renovation of Earthen Dam

onsidering the fact that Jharkhand is the most food insecure state in India, and also taking into account the importance of irrigation to boost up agricultural production, AFPRO started this programme with support from World Vision India (WVI) on pilot basis in two villages in Borio block of Sahebganj district.

Name of Project	Flow Irrigation Scheme and renovation of Earthen Dam
Duration	June 2014 to September 2015
Location	Borio block, Sahebganj district, Jharkhand
Funding Agency	World Vision India
Beneficiaries	25 HH

INTERVENTIONS AND ACTIVITIES	
	Construction of Diversion structure
Flow Irrigation Scheme	<ul> <li>Construction of Sealmentation tank</li> <li>Conveying water for irrigation to the fields</li> </ul>
Renovation of earthen dams	<ul><li> Repair of spillways and sluice gate</li><li> Strengthening the embankments</li></ul>

The construction of irrigation structures has brought about a new facet of life to the community of the project area. Water is being facilitated to all the 25 households for irrigating crops, especially during the critical growth stage when there was no rainfall. Apart from using water for irrigation, the community is now using this water for domestic purpose too. Before the project, handpumps, which were non-functional most often, and two community ponds were the only sources of water. The women of the community had to walk at least one kilometer to collect watter to serve their needs. The easy accessibility and availability due to these structures have reduced the drudgery of fetching water, particularly for women.



Outlet with platform at Sawlapur, Borio



Water from outlet at Sawlapur, Borio



A woman using water from outlet at Sawlapur, Borio

#### Challenges:

- Poor accessibility due to remoteness of project area
- > Ambiguous and non cooperative attitude of a section of the community
- Excessive rainfall

**Cross Cutting Issues** 

#### Environmental sustainability

Community Participation ensuring programme sustainability

Involvement of both men and women



## TECHNICAL SERVICES / TIME TO TIME SERVICES

FPRO for spring development and installation of Decentralized Wastewater Treatment Systems (DEWATS, a low cost technology for the treatment of organic wastewater for safe disposal and degradation of human excreta, developed by DRDO) at Thasi Jong village, about 30 Km from Palampur, in Kangra district of Himachal Pradesh. About 100 Tibetian households having metered, water supply systems, were facing acute shortage of water. AFPRO prepared the design, provided cost estimation and recommended implementation plan for spring development after proper field observation and technical survey. AFPRO proposed to construct two masonry check dams along with gully plugs across two nearby streams, to harvest water. This water was proposed to be channelized through pipeline using gravitational force, to the community. This will strengthen existing water supply system and surely contribute to significant reduction in electricity bill (pumps used to draw water from bore wells dug by almost each household). The women are the direct beneficiaries of this project. They used spend a lot of time and energy to fetch water from the streams, earlier, but now they get water at their door steps and save lot of time and energy. At the same place a 12 cum capacity (sufficient for 350 persons) bio-digestor was installed to fix a leaking septic tank. The bio-digestor has stopped the foul smell and mitigated the deteriorating surrounding environment. The bio digester has been running satisfactory for the last 9 months (as per the water /effluent of the bio-digestor, tested from DRDO lab, Gwalior.

AFPRO provided socio – technical services to Coca Cola India foundation, by conducting a feasibility study, including mapping of water quality and quantity, topography of soil and preparation of detailed project report in Bhadlao watershed (a micro watershed) in Sawai Madhopur, Rajasthan. AFPRO is currently implementing activities proposed under the DPR.

AFPRO was entrusted with evaluation of 13 watersheds in 4 districts (Datia, Guna, Gwalior and Rewa) of Madhya Pradesh, covering around 20,000 ha, by Rajiv Gandhi Mission for Watershed Management, Bhopal, Government of Madhya Pradesh.

Consultancy for Technical Designing and Construction monitoring of Gravity-fed Water Distribution System Rehabilitation: A 6-month consultancy service was provided by AFPRO Regional Office at Guwahati for designing, construction and monitoring of gravity-fed water distribution system. Karbi Anglong, the autonomous hilly district of Assam, is comprises of dense tropical forest and flat plains, with great potential for agriculture. However, drinking water facility has remained an unsolved issue until today. Provision of safe drinking water to the people of the entire district has until now remained unsuccessful to cover even 20% of the population over the last 30 years, according to government statistics. Having Oxfam India as the funding partner, AFPRO conducted detailed survey in 4 villages of the district and successfully provided technical support by to facilitate and enhance the water supply systems to the people of those villages for their drinking and domestic use. The task was accomplished in three different stages over the period of the contract, including survey, technical operations/interventions and monitoring during and post operation. Benefitting a total of 130 households from 4 villages, the activities under this task included creation and repairing of water supply and distribution pipelines, and construction of check dams.



Action For Food Production

## Partnership with World Vision India for Area Development Programme (ADP)

FPRO had supported World Vision India in conducting detailed technical surveys, feasibility studies and periodic monitoring of proposed land and water management related physical structure. While hydro-geological investigations are primarily focused on ensuring the availability of water for drinking and irrigation, soil and water conservation measures are also helping address the irrigation requirements of agriculture. A Climate Change Learning event was also organized in collaboration with World Vision India and partner organizations. The purpose of the event was to deliberate on key issues under climate change and sharing of information and experiences. Technical services were extended to the following ADPs during the year :

	Location: 18 villages, Bijapur Taluk, Bijapur District, Karnataka
	Technical services rendered:
ADP, Bijapur	Bunding and Land Levelling Assessment in 18 villages with 287 households selected by the respective VDC Members and then approved by WVI ADP, Bijapur.
	The bunding activity was done in 860 acres
	The interventions are made to enhance the crop production by upgrading the land. It is presumed that an addition of about 80 acres of land brought under cultivation
	Location: Chakai Block of Jamui district, Bihar; Poraiyahat block of Godda; Kathikund Block of Dumka district, Jharkhand
	Technical services rendered:
ADP, Jamui,	Hydrogeological investigation was conducted at total 117 sites in different project villages in the area of ADPs. More than 2755 families will be benefitted for safe drinking water from the installed hand pumps at these sites.
	Total 22 Hand Pumps were installed by ADP at recommended sites and 550 families were benefitted. Hand pump installation at other sites are in the process.
	Location: 8 villages of Shahabad Block of Baran
	Technical Services rendered :
ADP, Baran	<ul> <li>Survey, design and cost estimation for roof water harvesting structures, Pond renovation (1) and anicut construction (2) was done for Food for work program in 8 villages</li> </ul>
	<ul> <li>Increase water availability in the villages</li> </ul>
	Location: Mallana village, Rajgarh block, Alwar District
	Technical Services rendered :
ADD Alwar	• Socio technical survey was done in 2 villages for micro watershed development on Pilot basis.
ADI, Aiwai	After detailed survey the DPR was prepared for the integrated development of the villages .
	Construction of Culvert cum stop dam (1) and Anicut construction (3).
	Total 790 households were benefitted from the program
	Location: 34 villages, Narla block of Kalahandi District, odisha
ADP, Narla	Technical services rendered:
	• Hydro geological investigation was conducted at 34 sites in 34 villages.



### **AFPRO's CSR Initiatives**

CSR spending in India is not new, however the issue has raised a lot of expectations among different sectors since the inclusion of mandatory CSR in the Companies Bill 2010, which was passed by Lok Sabha on 18th Dec 2012. With Corporate Social Responsibility (CSR) being made mandatory, corporates have now begun to recognise CSR as a core activity, and are looking to find innovative ways to effectively utilise their CSR fund. This has brought the concept that NGOs and other implementing agencies can jointly play along with corporates in order to achieve the desired goal. For the Indian NGOs, it is a prospective window of opportunities under the scenario wherein international funding is being shrunk. But the NGOs as well as companies have to deliberate on the CSR strategies with the principal aim for sustainable solutions and capacity building.

Work related to rural development under CSR is not a new concept to AFPRO. Even before the Companies Act, 2013, under which all the mid and large companies have to spend 2% of their three-year annual average net profit on CSR activities, AFPRO was engaged with several well-reputed corporates viz. Monsanto and BALCO. However, taking the advantage of this new act where NGOs are considered as one of the indispensable parts of the developmental chain, AFPRO is taking full-forced initiative for getting associated with company's CSR activities. Recently many corporates are joining hands with AFPRO and use our expertise in devising programs which address wider social problems; including areas related to food Security, Livelihood, Sanitation, Safe Drinking Water, Environment and Environmental Sustainability, and Natural resource conservation & management. While the allocation of budgets is an indication of openness of a Corporate to integrated approaches of development; it is also a reflection of the immense opportunity in interpreting clauses of the amended Companies Act and its provisions of Corporate Social Responsibility (CSR) in developing some of the backward regions of the country. However, the fact that additional support is required to transform these villages into Adarsh Grams needs consideration.

The following table give the glimpse of the initiatives and efforts put by AFPRO during the reported period (2014-15) towards CSR programs.

Title : Rain water harvesting measures for neural networks water management at ashti's project villages

**Objective:** To provide a sustainable livelihood option for the farmers of target villages, through water management

CSR partner: BILT Graphics Paper Products Ltd.

Location: Ashti Gram Panchayat, Chamorsi block of Garhchiroli District, Odisha

Duration: February 2015 to January, 2016

Title : Jalgram Pariyojna

**Objective:** to tap the potential of rainfall in rainfed areas of 4 villages of Korba district benefitting 3500 beneficiaries

CSR partner: Bharat Aluminum Co. Ltd. (BALCO) & NABARD R.O.

Location: 4 villages of Korba district, Chhattisgarh

Duration: 2012-2016

Title : Jaljivika Pariyojna

**Objective:** Promotion of Livelihoods through Farm and Non-farm Interventions

**CSR partner:** Lafarge India Pvt. Ltd.

Location: Bilaspur, Chhattisgarh

Duration: April.2014 to Jan.2015

Title : BILT water project

#### **Objectives:**

- > To support the community in enhancing their livelihood through proper water management
- > To Promote the economical use of ETP Water for enhancing the livelihood options
- To organise the CBOs like WUGs and strengthen them
- > To construct WHS for irrigation which will open up other livelihood options for the poorest of the poor
- > To provide handholding support to the farmers and support them in innovative farming

**CSR partner:** BILT Graphics Paper Products Ltd.

Location: Jeypore, Odisha

Duration: October 2012 to June 2016

**Title :** Improving quality of lives of people with distress through adaptation of integrated approach for water conservation, sanitation and women empowerment in 25 villages of five districts in Maharashtra

#### **Objectives:**

- Increasing rural household access to improved & sustainable drinking water sources RO units; borewells; dugponds etc.
- Establishing water quality treatment mechanisms through chlorination methods to ensure safe & clean drinking water for the communities
- Increasing rural household access to improved sanitation facilities by sensitizing the communities & construction of toilets
- Formation and strengthening of Women Self Help Groups (SHGs) and promotion of small scale livelihood opportunities for enhancing the economic conditions of the women
- Working closely with the local Government for ensuring synergies in water & sanitation projects under NREGA & other schemes

CSR partner: MONSANATO U.S.A.

Location: Maharashtra

Duration: July 2013-June 2015

Title : Baldev Micro Watershed Development

**Objectives:** Feasibility study and DPR preparation of 10-15 villages of Sawai Madhopur district.

CSR partner: Coca Cola India Foundation

Location: 4 villages in Sawai Madhopur, Rajasthan

Duration: June,14 to August,14

Title : Water Augmentation programme & Afforestation program

#### **Objectives:**

- Preparation of water security plan in 15 villages of Buxwah block Dist. Chhatarpur (MP) benefitting about 800 households and
- Plantation work

**CSR partner:** Rio Tinto Exploration (P) Ltd.

Location: 15 villages of Buxwah block, Dist. Chhatarpur (MP)

Duration: November 14 to May, 2016

## Income And Expenditure Account For The Year Ended 31st March 2015

Particulars	31 <sup>st</sup> March 2015 (INR)
INCOME	
Programme Contributions	2,752,591.00
Miscellaneous Receipts	331,931.42
Sale / Disposal of Assets / Old Items	482,069.00
Interest - Savings & Deposits	2,337,106.45
Total	5,903,697.87
EXPENDITURE	
Core Integrated Development Programme	
Human and Institutional Development	148,426.00
Socio - Technical Personnel Cost	27,346,973.49
Outreach Support	1,635,009.14
Information Services	375,242.88
Administrative Cost	
Admn Personnel Cost ( F & A )	6,012,517.70
Outreach Support	151,175.00
Office Exepenses	4,137,384.32
Hired Services	1,807,471.50
Capital Expenses	1,258,614.00
ED's Discretionary Fund	20,000.00
Total	42,892,814.03
Excess of Expenditure over Income Transferred to :	
Programme Fund	(36,989,116.16)
Total	5,903,697.87

As per Books of Account, explanations & information provided to us

Cyriac Mathew Manager - Adm & Finance D. K. Manavalan IAS (Retd.) Executive Director (Martin P. Pinto F.C.A.) (Membership No. 085006) for Pinto M. P. & Associates Chartered Accountants Firm Regn.No.006002N

Place: New Delhi Date: 22.09.2015



## Balance Sheet As At 31st March 2015

Particulars	31 <sup>st</sup> March 2015 (INR)
SOURCES OF FUNDS	
Funds and Reserve	60,044,367.26
Programme Balances	1,065,740.38
Total	61,110,107.64
APPLICATION OF FUNDS	
A) Fixed Assets	
i) Gross Block	63,648,911.38
ii) Less: Depreciation	51,819,824.31
iii) Net Block	11,829,087.07
iv) Capital Work in Progress	
	11,829,087.07
B) Investments	32,117,702.00
C) Current Assets	
i) Interest Accrued on Deposits	1,621,231.50
ii) Recoverables & Prepaid Expenses	7,204,190.85
iii) Cash & Bank Balances	14,227,918.52
	23,053,340.87
D) Less: Current Liabilities & Provisions	5,890,022.30
Net Current Assets	17,163,318.57
Total	61,110,107.64

As per Books of Account, explanations & information provided to us

Cyriac Mathew Manager - Adm & Finance D. K. Manavalan IAS (Retd.) Executive Director ( Martin P. Pinto F.C.A.) (Membership No. 085006) for Pinto M. P. & Associates Chartered Accountants Firm Regn.No.006002N for Pinto M. P. & Associates Chartered Accountants Firm Regn.No.006002N

> AFPRO Action For Food Production

Place: New Delhi Date: 22.09.2015

## Significant Accounting Policies & Notes To Accounts

#### **1. Significant Accounting Policies:**

#### (i) Basis of Accounting:

The financial statements have been drawn up under historical cost conventions, on accrual basis of accounting.

#### (ii) Revenue Recognition

- a) Contribution received towards the core programme are recognized as income to the extent of the expenditure incurred on this programme. Contributions, grants, donations and receipts received without any specific direction are recognized as income.
- b) Funds received for a particular programme / project (other than the core programme) are recognized as Programme Contributions in the Balance Sheet and expenditure incurred against such funds is reflected against the particular fund. The unutilized portion of such contributions, grants, donations are retained as part of Programme Balances for utilization as per the donors' directions. Where AFPRO meets the stipulations provided for accessing particular funds for its own use, such income is transferred to a Programme Fund forming part of Funds and Reserve in the Balance Sheet
- c) Interest earned on savings bank accounts is reflected in the income and expenditure account after allocation of such interest derived on unutilised donor funds, which is allocated to the relevant programme balance accounts and in the case of the core contributions it is recognized as income and forms part of such core contributions.
- d) Interest earned on investments allocated for a particular fund is credited directly to that particular fund. Interest earned on other investments i.e. fixed deposits placed for more that one year, is credited directly to the general reserve.
- e) Foreign Contributions are accounted for on the basis of the credit advice received from the bank

#### (iii) Fixed Assets:

Fixed Assets are stated in the Balance Sheet net of depreciation, with a corresponding credit to the Capital Fund Account. Assets received as donation in kind, are incorporated at a value stated by the donor and adjusted for depreciation.

The cost of assets is charged in full to the relevant programme in the year of acquisition. Cost of acquisition is inclusive of freight, duties, levies and any directly attributable cost of bringing the assets to their working condition for intended use

#### (iv) Depreciation:

Depreciation on fixed assets are charged on the Written Down Value (WDV) method at the rates prescribed under the Income Tax Rules with a credit of the assets account and correspondingly reflected in the Capital Fund Account.

#### (v) Investments:

Investments include long term fixed deposits having a maturity period exceeding one year at the time of placing the deposit and reflects principal amount placed as deposit. Mutual funds reflects the amount invested.

#### (vi) Retirement Benefits:

Contribution to Provident Fund is charged to the relevant programme as attributable to the concerned staff.

Encashment of leave at the time of retirement is permissible and in special cases at the discretion of the management during the tenure of employment. A Group Leave Encashment Scheme insurance policy to cover the liability has been taken with Life Insurance Corporation of India (LIC). The amount paid to LIC is charged to the revenue.

Gratuity payments are covered under the Group Gratuity Scheme of Life Insurance Corporaion of India (LIC). The premium paid during the year is charged to revenue.

#### 2. Notes to Accounts

- i) Action for Food Production has been notified by the Government of India as an institution of national importance in terms of Section 10(10C)(viic) of the Income Tax Act 1961.
- ii) No provision for taxation has been made as the Society is registered under Section 12A of the Income Tax Act 1961 and claims exemption under Section 11 of the Income Tax Act 1961.



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