

Annual Report 2011-12



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Front Cover: Phases involved in the production of '*Better Cotton*' - Pest scouting by Krishimitra; Use of border crops of neem and jowar under pest management techniques; Cotton bags for transportation of cotton; Field Visit by AFPRO team for monitoring of progress; and Picking of cotton by farmers under the BCI and IKEA Trading (India) Pvt. Ltd supported project '*Better Cotton Systems*'



Local community digging a farm pond in Jamdiha village, Churchu block, Hazaribagh district, under the SDTT supported project 'Enhancing Livelihoods through Diversion Based Irrigation System'

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.

Governing Body Members

(As on 31st March, 2012)

<p>Mr. K.P. Fabian IFS (Retd) President – AFPRO Gov. Body C/45 IFS Apartments Mayur Vihar Phase I New Delhi – 110092</p>	<p>Mr. Sushant Agarwal Member - AFPRO Gov. Body C/o. Church's Auxiliary for Social Action – CASA Rachna Building 2, Rajendra Place, Pusa Road New Delhi - 110008</p>
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<p>Fr. Varghese Mattamana Treasurer - AFPRO Gov. Body C/o. Caritas India CBCI Centre Ashok Place (Gole Dakhana) New Delhi – 110001</p>	<p>Mrs. Nighat Shafi Pandit Member - AFPRO Gov. Body 16, Gogji Bagh, Srinagar, Kashmir 19000</p>
<p>Mr. John Varughese Member - AFPRO Gov. Body C/o. National Council of YMCAs of India 1, Jai Singh Road New Delhi – 110001</p>	<p>Dr. (Ms) Jaya Peter Member - AFPRO Gov. Body Peacevilla, Senior LIG – 2 Harshwardhan Nagar Bhopal – 462003</p>
<p>Dr. Christopher Lakra Member - AFPRO Gov. Body C/o. Indian Social Institute 10, Institutional Area Lodi Road New Delhi – 110003</p>	<p>Mr. Balkrishna Shetty IFS (Retd) Member - AFPRO Gov. Body C 74 IFS Apartments Mayur Vihar, Phase 1 New Delhi 110092</p>
	<p>Mr. D.K. Manavalan IAS (Retd) Member Secretary - Executive Director Ex - Officio, AFPRO New Delhi</p>

Abbreviations

AFPRO	Action for Food Production	NAIP	National Agricultural Innovation Project
BCI	Better Cotton Initiative	O&M	Operation and Management
BMP	Better Management Practices	PIM	Participatory Irrigation Management
C-AIM	Convergence of Agricultural Interventions in Maharashtra	RAJMIIP	Rajasthan Minor Irrigation Improvement Project
CWS	Center for World Solidarity	RFPMS	Rajasthan Farmers Participation in Management of Irrigation System
CPR	Common Pool Resources	RKVY	Rashtriya Krishi Vikas Yojna
EED	Evangelischer Entwicklungsdienst	SDTT	Sir Dorabji Tata Trust
DBIS	Diversion Based Irrigation Systems	SIRD	State Institute for Rural Development
FANSA	Freshwater Action Network South Asia	SRO	State Resource Organization
ICAR	Indian Council for Agricultural Research	TISS	Tata Institute of Social Sciences
IFS	Integrated Farming Systems	UNICEF	United Nations Children's Fund
IGWDP	Indo German Watershed Development Programme	VWC	Village Watershed Committee
IPM	Integrated Pest Management	VDP	Village Development Plan
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act	WASH	Water Sanitation and Hygiene
NABARD	National Bank for Agriculture and Rural Development	WUA	Water User Association
		WWF	World Wide Fund
		TERI	The Energy Resources Institute



Low cost treadle pump being used for cultivation of banana in Betanipam village, Sisiborgaon block, Dhemaji district under the ICAR supported project 'Live Better with Floods'

Executive Director's Note



As we reflect on the year gone by; and analyze our programme experiences across the country, in the light of emerging challenges holding the attention of policy makers at the national level; we find them closely representing some of the emerging approaches which seek to contribute towards the attainment of the national goal of inclusive and sustainable development. They represent comprehensive approaches being called for while addressing food security and management of natural resources at the level of the local community.

AFPRO has been an advocator of the Integrated Pest Management (IPM) approach among the local farming communities in Maharashtra and Gujarat for the past several years. The success of this can be quantified by AFPRO being accredited with having mobilized the largest number of farmers towards the adoption of IPM practices under the programme targeting adoption of Better Management Practices in cotton. An acknowledgment of AFPRO's work has been the acceptance of a 'high level of compliance with the BCI minimum production criteria' by an external evaluator – Vrutti; and AFPRO's successful association with the multi donor funded Better Cotton Initiative (BCI).

Continued efforts in working on issues of water, sanitation and hygiene, among tribal communities in Chhattisgarh are bearing fruit with the development of strong working relations with UNICEF. Our work in Chhattisgarh marks the beginning of a new chapter in the organization's history of working on water, sanitation and hygiene in the region. An appreciation of our work with communities has been the continued socio-technical services of AFPRO sought by UNICEF-Raipur while implementing its programmes. The technical guidance provided by UNICEF-Raipur in propagating new approaches is worthy of sharing our successes in the region.

Our tradition of contributing to capacity building of key stakeholders within organizational focal areas have continued during the financial year gone by with

AFPRO being identified as State Resource Organization by State Institute of Rural Development (SIRD) – Maharashtra and initiation of capacity building relations with SIRD – Orissa. Capacity building has served as an effective medium of sharing our technical knowledge and experiences with stakeholders associated with development programmes. AFPRO's contribution to the decentralized approach to planning through the Backward Region Grant Fund (BRGF) of the Ministry of Panchayati Raj has continued during the financial year with the adoption of one district in Maharashtra and three in Assam.

Another feather in our hat has been the process of being directly associated with implementation of programmes; an implementation strategy being adopted for the past several years. Being associated directly with local communities; and working within the nuances of the existing socio-economic framework which play out at the grassroots level has represented an interesting learning curve for the organization as a whole. We have however continued to offer our technical services during the financial year to a wide range of organizations/agencies in developing sound intervention for the management of natural resources.

Recognizing our socio-technical experience in the sector of development; empanelment with the National CSR hub hosted by Tata Institute of Social Sciences (TISS), has opened wide possibilities of exploring and building relationships with corporates and Public Sector Undertakings (PSU). The fruit of the development of successful linkages are being reaped in the state of Chhattisgarh through projects with ACC and Bharat Aluminum Company Limited (BALCO). Continued efforts are also being made to develop linkages on similar grounds in other states as well.

The financial year has been marked by the continuation of our association with several international and national funding agencies like IKEA, BCI, NABARD, Sir Dhorabji Tata Trust (SDTT), Indian Council for Agricultural Research (ICAR) and UNICEF among others. We continue to work with the Ministry of

Panchayati Raj and Government of Orissa. Also worth mentioning is the beginning of new associations and partnerships with organizations like Sir Ratan Tata Trust (SRTT), World Wide Fund (WWF), Rio Tinto, TERI, ACC and BALCO. AFPRO's long collaboration with World Vision India has only strengthened with increasing technical services being sought across the organization's focal areas.

The financial year gone by has been a mixed bag of success and setbacks, all contributing to learning's of the organization. The challenges faced, be it in the ground level difficulties of terrain or sensitive local political conditions while implementing Diversion Based Irrigation Systems in the north eastern and eastern states of India, has only strengthened the capacity of our staff with the experience gained. The intricacies involved in the production and distribution of 'Better Cotton'; in accordance with 'Principles and Criteria' laid down by international initiatives, have created enormous scope for improvement in our approaches adopted during implementation.

We have recorded successes and experienced short comings; however the continued guidance and encouragement of our Governing Body has provided the organization with the essential nudge to strive forward. Their insights have proved valuable in our endeavors

to address some of the critical issues affecting the management of natural resources. Of special mention is the active role played by members of the Governing Body in trying to source support through the Ministry of External Affairs, from the available funds earmarked for the promotion of food security in Africa. Worth mentioning is the sharing of our technical knowledge through trainings on the construction of the Deenbandhu Biogas Model, in Kenya. Appropriate discussions have been held with senior level functionaries for sharing experiences and learning with countries in Africa. Similarly efforts have been made to source funds from SAARC (South Asian Association for Regional Cooperation) development fund and contacts have been made with the secretariat of SAARC for capacity building under projects in member countries.

A special thanks to our partner organizations with whom we have worked at the field level and who have played critical roles in taking our programmes to the ground and implementing shared visions. Last but not the least a word of appreciation to the commitment and work of our teams in the different Field Units and Task Forces.

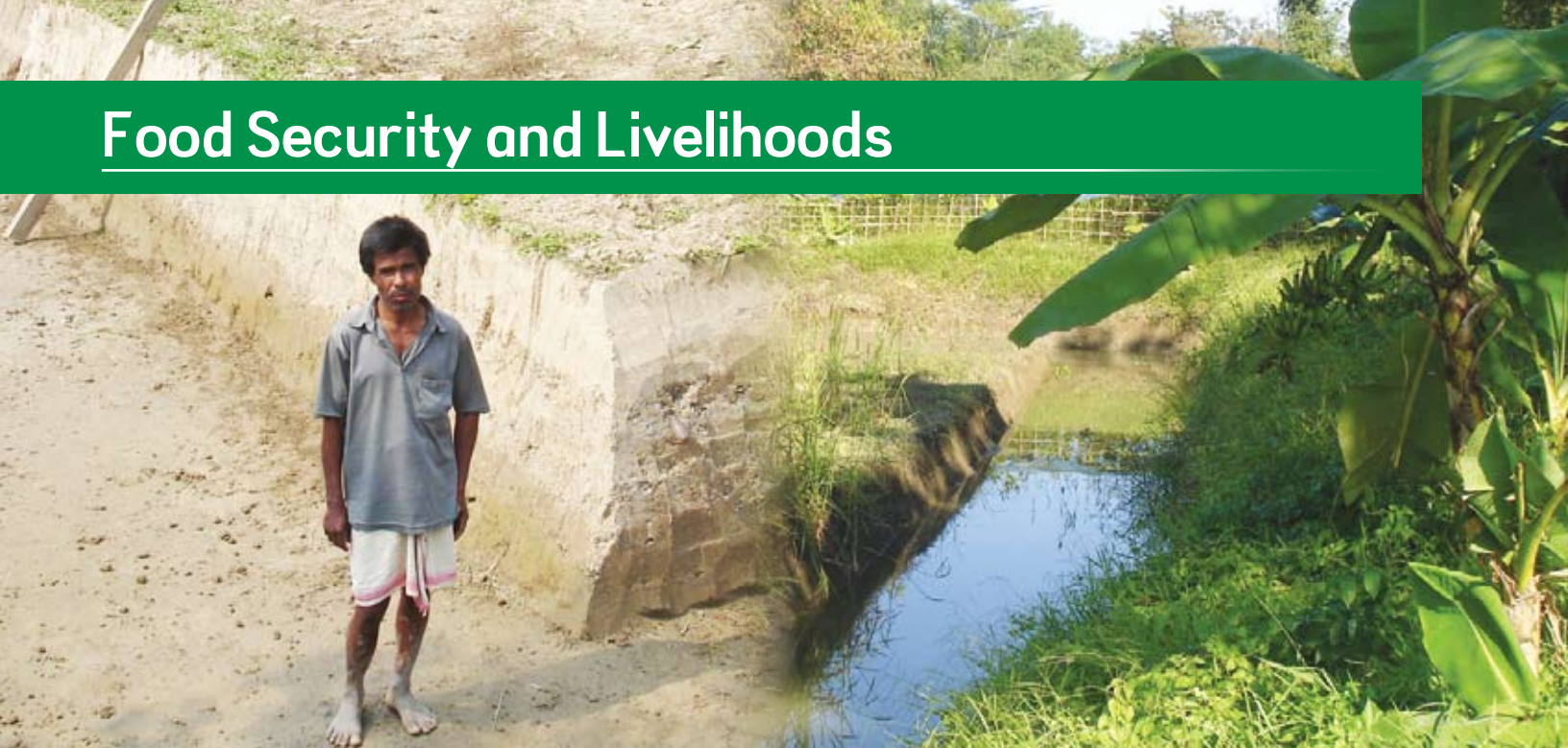
D.K. Manavalan

D.K. Manavalan
Executive Director



*Preparation of furrow line for potato planting
Kakobari village, Sisiborgaon block,
Dhemaji district, Assam*

Food Security and Livelihoods



Phases in the development of Rice-Fish-Horticulture model in Seniram Khanikar's field, Sokoladoloni village, Dhemaaji block, Dhemaaji district, under ICAR supported project 'Live Better with Floods'

OVERVIEW

The livelihoods of about half of our population is either wholly or significantly dependent on some form of farm activity – be it agriculture, animal husbandry or fisheries. In spite of a relatively better performance of the farm sector in the 11th five year plan period, with respect to indicators of growth, efforts need to continue with greater vigor if national targets of agricultural growth are to be achieved.

Food availability is a necessary condition for food security. With a competitive demand on natural resources for non agricultural use and food grain producing land acreage fluctuating around a figure of 121 million hectares, significant strides need to be made with respect to sustainable increase in productivity. The approach and target areas need to shift from irrigation and input intensive cultivation practices to rainfall dependent areas with the integration of efficient resource utilization technologies and techniques. The solutions need to represent the unique agro-climatic conditions that characterize different regions.

With over four decades having elapsed since the introduction of the Green Revolution in India, marginal outputs from agricultural production have drastically

gone down with respect to incremental inputs. Higher input costs coupled with comparatively declining returns have added tremendous pressure on already financially crunched small and marginal farmers. The declining profitability of agricultural production, as a cause of concern extends beyond farmer distress. With farmers preferring non agricultural employment opportunities, questions surrounding continued availability of food supplies and food security are also emerging. AFPRO's programme experiences in geographically diverse regions of Maharashtra and Assam represent the significant role that environmentally sound approaches play in reducing vulnerabilities through adoption of sustainable agriculture.

The increasing vulnerability of farming communities can be attributed, among others, to a high dependence on mono cropping and rainfed farming systems. The effect of fluctuations in climatic and market variables on production and income is greatest where there is a dependence on a single economic activity. Farming systems comprise of cropping, agro-forestry, livestock rearing and fishing. Depending on the appropriateness of local conditions and community preferences, AFPRO, through its programmes has been able to identify

and successfully propagate different combinations comprising the broader farming system. By diversifying farming systems, local communities have not only gained access to additional sources of livelihoods and income, but have also experienced reduced vulnerabilities associated with mono cropping systems.

Application of fertilizers and pesticides were introduced with the intention of improving crop productivities. The lack of scientific information among farmers on the actual requirement of fertilizers and pesticides by their crops has led to rampant over use leading to varied problems of soil degradation. Soil and nutrient management and integrated pest management have emerged as new approaches to tackle the problem of unscientific application of fertilizers and pesticides. Our experience of adopting these approaches in the cultivation of cotton in Maharashtra and Gujarat combined with the benefits being experienced by communities in terms of reduced costs and environmental damage has highlighted the need for greater advocacy of the approach especially among farming communities.

Small and marginal farmers often do not receive their fair share in terms of market value due to their uneconomic proportion of agricultural produce. The existence of middlemen and absence of direct market linkages further devoid them of a good market value. Cluster formations comprising of small and marginal farmers are being developed as effective mediums for the promotion of economies of scale, in the states of Maharashtra and Gujarat. The development of market linkages also serves to direct the benefit of production to the producers.

With 200 million hectares categorized as rainfed, the focus of national policy is gradually shifting to the improvement of agricultural production in rainfed areas. Providing protective irrigation to crops through storage and channelizing of available water resources on the basis of flow of gravity has been adopted as an innovative approach to the promotion of agriculture in the rainfed areas of eastern and north eastern India.

Women SHG working on extracting Yarn from muga coccons at Chanwari village, Machkhowa block, Dhemaji district, Assam, India under the ICAR supported project 'Live Better with Floods'



Increasing resilience of indigenous communities to water induced hazards

The efficacy of traditional coping mechanisms of indigenous communities is constantly challenged by climatic variability characterizing regional and local weather systems. The resilience of communities residing in the eastern Brahmaputra basin, to water induced hazards can be increased through the systematic planning of cropping patterns, promotion of intensive and efficient use of existing agricultural production systems and capacity building of local communities on contemporary scientific research.

Cultivable land, forests, abundant grazing fields and a good stock of livestock represent the traditional livelihood patterns of communities residing in the eastern Brahmaputra basin of Assam. The occurrence of floods, river-bank erosion, and deposition of large amounts of sand by flood waters are the most frequent water-induced hazards that characterize the region. The efficacy of traditional coping mechanisms is also increasingly being affected by alterations in the local weather and climate systems, increasing the vulnerability of indigenous communities to water induced hazards.

Initiated under component 3 of ICAR's World Bank supported National Agricultural Innovation Project (NAIP), AFPRO has been implementing the project titled 'Live Better with Floods' in 38 villages of Dhemaji district, Assam. The project interventions recognize three phases of flood prone areas - Pre flood situation, During flood and Post flood operation. Adopting the Sustainable Livelihood Approach (SLA) Framework, livelihood interventions have been broadly categorized according to each phase. Integral components of the project are the promotion of Integrated Farming Systems (IFS) and Restructured cropping patterns, aimed at increasing adaptation of indigenous communities to water induced hazards of the region.

Integrated Farming Systems were introduced wherein components of crop, livestock, aquaculture and agro-forestry were integrated with resource saving practices to achieve acceptable profits and high and sustained levels of production. Four such modules have been introduced under the IFS umbrella. Sustained ecological viability of production systems (agriculture, livestock etc); a prerequisite in the face of increasing degradation, has been promoted through nutrient recycling, an integral

Project Title	Live Better with Floods
Location	38 villages, Dhemaji district, Assam
Collaborating Agency	Indian Council for Agricultural Research
Duration	April 2009 – June 2012

component of these modules. Waste products (animal excreta) from livestock rearing (poultry and pig) were used as resources (feed) for fish farming. Recycling of waste products (cow dung and cow urine) generated as part of the Dairy-Fish-Horticulture modules have also been promoted as compost and bio-control for insect pests. Use of crop residues has been promoted not only as manure (vermi composting) but also as feed for the livestock.

Integrated Farming System (IFS) Modules

- Rice - Fish - Horticulture
- Livestock - Fish - Vegetables
- Dairy - Fish - Horticulture
- Sericulture - Pig - Horticulture

Increasing adaptive capacities of communities depends on reducing economic dependence on mono cropping systems through diversification and intensification of local production systems. Planning of crop calendars has been used as an effective tool to reduce the effect of water induced hazards through restructuring of the cropping pattern. Based on the likely occurrence and withdrawal of floods and withdrawal (flood calendar), the

planting dates of locally cultivated crops were adjusted to improve crop security through reduced risk to floods. Crops such as mustard, potato, summer moong, summer rice, vegetable and fodder crops such as oats were grown in the flood free period. Adjustment of planting dates has been done for growing black gram and green gram after floods. Local cultivars of winter, summer, early autumn, autumn and deep water paddy have been replaced by improved high yielding variety.

Economic benefits of agricultural production can be increased by bridging the dichotomy between traditional agricultural practices and contemporary agricultural research. Technology dissemination through varied mediums can augment reforms within the institutional set up. AFPRO has facilitated the bridging of this dichotomy through the establishment and strengthening of Village Development Councils (VDC) and their linkage with the

institutional framework of the Department of Agriculture (Krishi Vigyan Kendra). Krishi Vigyan Kendra's have served as an effective medium for technical support to farmers on technological improvements, dissemination of information and relevant hand holding support.

Project Outputs during the current reporting period

- Skill up gradation of 1985 beneficiaries
- 35 percent increase in average annual income among beneficiaries of IFS and restructured cropping pattern
- Improved awareness on agricultural practices through 31 trainings to 677 project beneficiaries
- Improved Cost Benefit Ratio of 1:2.5 and 1:4.8 among families adopting the IFS module (327 acres) and a restructured cropping pattern (396 acres) respectively



Farmer cultivating vegetables using poly tunnel technology, Silli village, Sisiborgaon block, Dhemaji district

Poly Culture Technology - Raising temperatures amongst the cold winters

Generally perceived to be boom, water, for Mr. Bolin Bora, a resident of Bahokita village, Bordoloni block, Dhemaji district, Assam, is a sign of potential trouble. Farming is the only livelihood option for him. He cultivates winter rice locally known as Boro Rice, which is sown in the cold winter months of November-December and harvested by early spring (May/June). The annual cycle of floods in his low lying village prevent him from reaping a safe harvest. To restrict damage to his crop by floods, he was encouraged to attend trainings on restructuring of cropping patterns.

An important component of crop restructuring was the promotion of innovative poly tunnels, introduced to cultivate winter rice. They are naturally ventilated climate controllers. Operating on the basic principle of green houses, they trap terrestrial radiation, causing temperature inside the poly tunnels to be 5°C more than the surrounding. Using simple and locally available material like bamboo and plastic, he was trained to construct a poly tunnel in his field. For a nominal cost of Rs 500, he was able to construct poly tunnel in 10 meter square of his land. With the help of poly tunnels, the process of germination was hastened, enabling early transplantation of the rice saplings, thereby reducing the growing period. This enabled him in reaping an earlier harvest (April/May) prior to the onset of the monsoon.

After adoption of poly tunnel technology, he has been able to improve the yield to 5.2 quintals per bigha in winter rice from the previous yield of 2 quintals/bigha. It has helped him to generate an additional income of Rs 1280 per bigha. Poly tunnels come with additional advantage of quick germination, good seedling vigour due to reduced effect of cold, and reduction in disease due to healthy growth. He has started using the same technology to raise vegetables as well. Poly culture technology has provided him with a new and better idea of raising seedlings during winter than the traditional technique.

Reducing the vulnerability of farming communities by enhancing the livelihood options through management of natural resources

Flagship programmes of the Government of India provide rural communities with necessary public investment required to strengthen rural economies and livelihood bases. Lack of awareness and capacity among elected representatives on mechanisms for representation of community needs; and access to and utilization of funds; results in under utilization of available resources. Capacity building of village level institutions has been adopted as an approach to strengthen agricultural systems through convergence with two flagship programmes – RKVY & MGNREGA.

Strengthening of rural economies and livelihood bases of the poor, especially marginalized groups like Schedule Caste and Schedule Tribes and women depends on the provision of public investment across diverse sectors. With devolution of power to rural local self governments, effective utilization of public investment depends upon a community based understanding of the available financial resources and existing mechanisms for its utilization. Due to a lack of awareness among elected representatives and weak design and implementation capacities, the resources under various ongoing programmes of the government are presently under-utilized, hampering the process of development.

Convergence of Agricultural Interventions in Maharashtra (C-AIM) is an initiative of Government of Maharashtra through Maharashtra State Agriculture and Marketing Board (MSAMB) with the financial support from IFAD & SRTT for six distressed districts of Vidarbha region in Maharashtra. An integral component of the programme is convergence of various ongoing schemes of the Government with needs which have emerged from the targeted villages.

For smooth implementation of the programme and to oversee matters pertaining to the development of the village, Village Development Committees (VDC) have been created. The emphasis on inclusion of members from the Gram Panchayat and programme beneficiaries (Self Help Groups, Producer Groups and Joint Liability Groups) into the VDC seeks to ease the process of participatory decision making by placing community level decision makers and community demands onto a unified platform. The inclusion of Gram Panchayat members in the VDC has also helped

Project Title	Convergence of Agricultural Interventions in distressed districts of Maharashtra (C-AIM)
Location	10 villages, Yavatmal block , Maharashtra
Collaborating Agency	Government of Maharashtra (GoM), IFAD and SRTT
Duration	October 2010 – October 2013

in the presentation of community demands to identified government departments.

Convergence with on going government programmes was adopted as an approach to address the multi-faceted nature of agricultural development in identified village clusters. Two flagship programmes – Rashtriya Krishi Vikas Yojna (RKVY) of the Department of Agriculture and the Mahatma Gandhi Rural Employment Guarantee Scheme (MGNREGS) of the Ministry of Panchayati Raj were identified as a source of financial resources to meet the demands of farmers. Asset creation being fundamental to these programmes, need based assessments were conducted and water resource development were identified as a high priority for local communities. AFPRO facilitated local communities in preparing and submitting 78 proposals for construction of farm ponds under RKVY scheme. Village wise soil and water conservation planning has been conducted to identify the nature of work to be carried out under MGNREGA, with farm bunds and water ways emerging as required measures.

Project Outputs during the current reporting period

- 10 Village Development Committees (VDC) strengthened
- Village level institutions comprising 66 Producer Groups, 18 Joint Liability Groups and 136 SHG's (existing and new) strengthened
- Market linkages between buyers and suppliers initiated
- Convergence with RKVY scheme initiated through submission of 78 proposals for farm ponds with irrigation potential of 269.3 acres
- Convergence with MGNREGA scheme in Manapur village resulted in 7.62 ha being covered under area treatment activity; and corresponding labour payments amounting to Rs. 65000 disbursed



Land development under MGNREGA, Manpur village, Yavatmal block, Yavatmal district, Maharashtra

Collective marketing of agricultural produce serves a dual purpose of enabling farmers with access to better prices, as well as the adoption of new techniques in agriculture developed by agricultural universities and government departments. Producer Groups comprising 10-12 members in each group have been formed by cultivators of cotton, soyabean, wheat and gram. Market linkages between Producer Groups and Cotton ginneries have also been initiated. Collective marketing and the development of market linkages has increased both access to better agricultural inputs (non BT seeds were provided at subsidized rates) and better prices.

Promoting low cost protective irrigation in rainfed agricultural systems

Agriculture based livelihoods of marginalized communities residing in rainfed areas are often challenged by lack of access to assured irrigation during critical stages of crop growth, affecting crop production and thus compromising food security. Diversion based irrigation channels represent a low cost approach to the provision of protective irrigation, promotion of efficient utilization of hilly and undulating terrain characterizing the eastern and north eastern states, and operating on the principle of Gravity flow.

Agrarian economies in India are represented by a symbiotic relationship between food security and livelihoods. With timely availability of water identified as a critical component affecting crop growth; improvements in food grain production are closely related to food security. Failure of monsoon or non-availability of irrigation facilities negatively affects the farming community and ultimately leads to food shortage among the rural communities, especially amongst the poor and the marginal. Erratic rainfall patterns, predominantly rainfed agriculture, low agricultural

Project Title	Enhancing Livelihoods through Diversion Based Irrigation Systems (DBIS)
Location	Hazaribagh district (Jharkhand); Ri Bhoi district (Meghalaya); South Tripura district (Tripura); Karbi Anglong district (Assam); Ganjam & Gajapati districts (Orissa)
Collaborating Agency	Sir Dorabji Tata Trust (SDTT)
Duration	May 2009 – May 2012

productivity, lack of awareness about modern agricultural practices, about better crop/land management practices; and poor community based management of the existing natural resource bases is a challenge to food security and livelihoods. This challenge extends to a large section of scheduled caste and scheduled tribe populations inhabiting parts of the states of Orissa, Jharkhand, Assam Meghalaya and Tripura.

AFPRO in collaboration with Sir Dorabji Tata Trust (SDTT) has been implementing a programme 'Enhancing Livelihoods through Diversion Based Irrigation System (DBIS)' in 145 villages geographically distributed across Jharkhand, Orissa, Assam, Meghalaya and Tripura. DBIS represents an approach to the promotion of food security and livelihoods through the propagation of protective irrigation measures; enabling access to water through the creation/renovation of diversion based irrigation channels. People centric strategies have been promoted, and include efficient utilization of water resources through capacity building on water efficient agricultural practices. Sustainability of project interventions have been promoted through formation of Water User Associations (WUA). They serve as a medium for development of ownership among communities on operation and maintenance of existing structures.

Diversion Based Irrigation Systems (DBIS) represent an innovative approach to the promotion of food security and livelihoods through the provision of protective irrigation

to rainfed farmers based on the principle of gravity flow. The undulating and hilly topography, characteristic of eastern and northeastern areas, witnesses the emergence of numerous seasonal springs and streams. The terrain has been judiciously utilized to transfer water through designing of distribution mechanisms linking sources of water and beneficiary populations through well defined channels/pipelines.

A people centric approach has led to the capacity building of local communities on multiple aspects for ensuring sustainability of DBIS structures. The first was the development of an understanding among user groups regarding the collection of necessary funds for the repair and maintenance of the structures. The second was on proper crop planning as per water availability and proper water sharing among all the beneficiaries on the principle of equity. Production benefits achieved through capacity building on organic farming techniques, techniques of System of Rice Intensification (SRI), measures of soil and water conservation have highlighted the need to expand capacity building.

Implementation across the five states has highlighted the need to further leverage the strengths of DBIS interventions comprising the use of traditional knowledge and proper use of water resources. However, emerging as a scope for improvement in project outcomes is the need to strengthen communities on Water User Associations and crop planning, as a tool to increase agricultural production and consequently additional sources of income.

Benefits of Diversion Based Irrigation Systems

- Low cost flow irrigation structures
- Operation on the principle of gravity flow
- Average cost of irrigation of Rs.10,000 per acre (includes capital investment; No recurring cost of irrigation)
- Simple operation and maintenance by Water User Group
- Availability of safe and potable water

Project Outputs during the current reporting period

- Protective irrigation assured for 2745 acres of kharif crop initially under rainfed cultivation
- 10 percent increase in rabi crop through irrigation potential generated
- Improved capacities of 3127 households through capacity building on improved agricultural practices



Construction of irrigation channel at Kharna village, Vishnugarh block, Hazaribagh district, Jharkhand under the SDDT supported project 'Enhancing Livelihoods through Diversion based Irrigation Systems (DBIS)'

Equitable sharing of water gives farmers of a remote village in Jharkhand an opportunity for additional income

Kandtari is a backward village located in Barkagaon block. The village consists of 120 houses and all the farmers are dependent on agriculture for their livelihood. Surrounded by hilly area there are a few perennial springs which flow as streams. The potential of irrigation in this village had been explored about a decade ago through the laying of pipes to transfer water. The system, however, was plagued by inequitable usage. Those beneficiaries that were located at the tail end of the system did not receive any water, marking the beginning of problems. Poor motivation among members on the principle of water sharing, led to constant conflicts. The pipes were eventually damaged and now the system lies defunct.

Aware of the conflict that had occurred, AFPRO took considerable care in motivating the local community on the principle of water sharing. An understanding was developed among the beneficiaries on the fixed irrigation potential to be generated by the diversion based system. The beneficiaries devised a mechanism by which everybody agreed to cultivate the same area. In this case it is about 100 acres. Based on the available water the users were motivated to plan their crops for a fixed area of land. This has enabled sharing of water among all the beneficiaries, contributing to a more equitable distribution of the benefits from DBIS structures.

Improving the sustainability of cotton cultivation through promotion of Better Management Practices in Cotton

Cotton cultivation is often associated with intensive application of water, fertilizers and pesticides to generate average yields. Maintaining the fertility of the soil and safe guarding local communities from hazardous impacts of such practices is essential to maintain the sustainability of cotton cultivation. Adoption of multiple approaches addressing critical issues affecting cotton cultivation can help make cotton production better for the people who produce it, for the environment it grows in and for the sectors future.

With India recognized as the cradle of cotton cultivation for over 3000 years, cultivation of this natural fiber dominates the agricultural sector in certain districts of Maharashtra and Gujarat. Cotton is often grown in semi-arid and water scarce areas in India. Meeting the requirement of water during the critical period, especially in rainfed areas creates the need to explore alternate sources of water (groundwater), adding enormous pressure on already scarce resources. The growing concern over the environmental and social impacts of such practices is leading to increasing questions surrounding its sustainability. Higher investments by farmers through input costs associated with such practices places an additional pressure on the farming community.

AFPRO has successfully implemented an innovative project, Better Management Practices (BMP) in Cotton with the support of IKEA, in Yavatmal, Maharashtra. AFPRO continued to implement BMP with the support of IKEA in 65 villages in Gujarat. The changes brought about in farming practices, however, also emphasized the need to strengthen social issues related to cotton. A culmination of this is the Better Cotton Initiative (BCI) - a global initiative to make cotton production better for the people who produce it, for the environment it grows in and for the sector's future. AFPRO has implemented six 'Production Principles' on which BCI operates in 92 villages of Maharashtra.

Reduction in the harmful impact of crop protection practices is the first Production Principle. Apart from Integrated Pest Management (IPM) adopted from the BMP Package, awareness building has also been initiated among farmers on appropriate pesticide application processes to reduce its harmful impact.

Project Title	Promotion of Better Cotton System
Location	92 villages, nine blocks of Yavatmal district, Maharashtra; 27 villages, Dhrangadhra block, Surendranagar district; Gujarat 38 villages, Wankaner block, Rajkot district, Gujarat
Collaborating Agency	Better Cotton Initiative (BCI); IKEA Trading (India) Pvt. Ltd
Duration	May 2011 – May 2012

Better Management Practices (BMP) Package

- Raising of marigold seeds/ seedlings as trap crop
- Raising cowpea to control aphid
- Promotion of bio-fertilizers/bio pesticide
- Scouting for identification of pest, nutrient & water
- Soil testing
- Preparation of Amrutpani/egg – lemon juice/ 5% neem seed kernel extract
- Installation of pheromone traps/ bird perches
- Use of yellow sticky traps
- Promotion of low cost protective irrigation methods and identification of soil and water conservation activities.
- Clean harvesting and storage of cotton

Based on comprehensive information on the life cycle of pests affecting cotton and their interaction with the environment, a combination of pest control techniques and management practices have been recommended.

Production Principles under BCI

- Minimize the harmful impact of crop protection practices
- Use water efficiently and care for the availability of water
- Care for the health of the soil
- Conserve natural habitats
- Care for and preserve the quality of the fiber
- Promote decent work

Water is a major limiting factor in cotton production. While cotton is a relatively drought tolerant crop, farmers who use water efficiently can grow more crop with the same volume of water than farmers who use water inefficiently. Application of appropriate quantities of water at critical stages of plant growth directly affect yield of cotton crop. Introduction of cost effective water efficient practices can help reduce the water usage of cotton. AFPRO has initiated a process of awareness building on improved practices of available water utilization to increase efficiency and reduce wastage. Crop cover comprising moong, urad and soyabean have been widely accepted by communities as means of increasing the efficiency of water utilization. New practices like sprinkler and drip irrigation need to be explored in terms of scope, especially among small and marginal farmers.

Poor management of soil under cotton cultivation has led to increasing degradation. Soil health management has been adopted as a multi-faceted approach to ensure sustainable utilization of the land resource. Supplementing soil nutrients need to be based on an understanding of soil nutrient requirements and alternate enhancement options. A dual approach has been adopted with promotion of efficient fertilizer application processes and emphasis on alternate soil nutrient improvement strategies. Based on soil testing, application of fertilizers was determined. Crop legume rotation and utilization of crop covers and crop residues are being widely accepted by communities as measures to improve soil fertility.

Habitat extent and quality has a direct and significant impact on biodiversity by providing refuge for beneficial insects. It may act as a trap crop for crop pests as land used for the production of crops has typically been cleared of vegetation and natural habitats, and this clearing of habitat has a direct and significant negative impact on biodiversity.

As cotton is grown first and foremost for its fibre, the quality of the fibre grown by the farmer is fundamental to its marketability and value. Different management practices like irrigation scheduling, weed management, nutrient management, clean and safe harvesting, safe storage of harvested seed cotton etc to improve the fibre quality are being promoted.

Decent work involves opportunities for work that are productive and delivers fair income and security in the workplace and social protection for families. Through the BCI initiative, AFPRO has been working with communities to mobilize them to adopt practices associated with decent work such as prevention of child labour, forced/bonded or trafficked labour among communities.

Project Outputs during the current reporting period

- Leading partner in India, with 11319 and 14308 farmers registered under the project in Maharashtra and Gujarat respectively
- Reduction in input cost of production
- Average per ha lint cotton production of 8.78 - 11.9 quintal per ha recorded in Maharashtra and Gujarat
- Average net profit recorded in the range of Rs.10112 – 44305 per ha in Maharashtra and Gujarat
- More than 75 paraprofessionals trained
- Working towards establishment of cotton procurement system with the help of local ginners



Adoption of row irrigation practices in Mota Ankewaliya village, Dhrangdhara block, Surendranagar district, Gujarat under BCI supported project 'Promotion of Better Cotton Systems'

Promoting Better Management Practices in cotton through Integrated Pest Management

Mr Kirit Meraj Patel has for the past 25 years been cultivating cotton in 10 acres of land, located in Dudapur village, Dhrangadhra block, Gujarat. His crop is susceptible to the attack of varied types of pests such as sucking and larval pests, beetles and mealy bug infestation. A remedial measure actively adopted by famers like him has been the use of pesticides like Acetamiprid, Monocrotophos and Buprofezin among others. Although objectives of crop protection from pests are met by the use of these chemicals, the social and environmental hazards associated with such practices are increasingly becoming evident. Increasing toxicity in plants, emergence of pesticide resistant pests and pesticide residues in food, soil and water have emerged as some of the critical challenges affecting his continued cultivation of cotton.

With the intention of promoting Better Management Practices in cotton, IPM was adopted as one of the project approaches to reduce the application of pesticides in cotton cultivation. Based on trainings conducted in his village, he was mobilized to adopt mechanical and biological measures in controlling pests in cotton cultivation. Measures like use of Trichogramma as natural predators, inter cropping, pheromone traps and neem seed kernel paste were introduced as biological control measures to reduce the application of pesticide. Hand picking and manual destruction of larve were also introduced as measures to reduce pesticide application.

Based on his learning's on IPM and implementation in 1 acre of his field, he has reduced the application of pesticides in his field by 50 percent. Immediate benefits were observed in terms of reduced costs and corresponding higher net profits and incomes. The long term benefits will help him produce cotton which is environmentally sustainable in the long run. Based on this success of the new approach in his field, he is actively engaged in propagating the adoption of a similar approach among others in his community.

Promoting sustainable livelihoods through preparation and implementation of community based Village Development Plans

Several villages of Durg district are affected by lack of basic facilities and low income based livelihood patterns. The development of such villages should depend upon a community based assessment of their needs and solutions which they prefer to adopt. With a high dependence on natural resource based livelihoods, Village Development Plans can be promoted as an effective tool to assess community requirements in terms of livelihoods and implement technically feasible interventions.

The phrase 'India lives in its villages' is well represented by Durg district of Chhattisgarh with over 60 percent of its population residing in rural areas. A bulk of the villages in this district are lacking basic facilities such as access to safe and adequate drinking water, education, health, water harvesting measures, improved agricultural practices and micro-enterprises, leading to low income based livelihood patterns. With natural resources forming the base livelihoods of a large percentage of the rural population, there is an earnest need for the development of villages in an integrated and participatory way, leading to enhanced capacity, income level and livelihood patterns of the local communities.

Named symbolically for the spread of light, AFPRO has been implementing an integrated and participatory approach to the development of villages through a project titled 'Ujiyara'. The project is being implemented in six villages across two clusters (Jamul and Patharia) of Durg district with the support of ACC– Jamul and NABARD. Committed to the protection of the environment through its adoption as a corporate objective, ACC–Jamul extended its corporate social responsibility initiative to the adoption of six villages with the intention of promoting sustainable livelihoods. Capacity building, an integral component of the project is also being implemented with the support of NABARD. Based on the adoption of a participatory approach to the preparation of Village Development Plans, the project is being implemented around four primary activities – Promotion of income generating activities, water and soil resources development, agriculture development and capacity building initiatives.

Village Development Plans (VDP) representing an integrated approach to the development of villages

Project Title	Ujiyara Project
Location	6 villages, Durg district, Chhattisgarh
Collaborating Agency	ACC-Jamul and NABARD
Duration	June 2011- June 2014

was adopted in two clusters across six villages of Durg district. Participatory Rural Appraisal (PRA) techniques like group discussions with community members and Panchayati Raj Institution (PRI) representatives were adopted to assess the need, and identify key problems and potential solutions. Technical surveys were also planned to assess the feasibility of the recommendations. The inclusion of local communities in the planning process generated tremendous interest and support during the implementation phase.

With nearly half of the land used for cultivation purposes, and a high dependence on rainfall for irrigation, income generating activities through Self Help Groups (SHG's) was promoted. Based on the interest developed among the women during exposure visits conducted to Jila Sahkari Bunkar Sangh, Durg; two women based SHG's were formed and are actively engaged in mushroom production. The development of micro enterprises has not only provided alternate livelihoods and additional income but has also reduced the dependence on agriculture as a source of livelihood.

A comprehensive approach has been adopted to the management of water resources. The assessment of all



Mushroom cultivation by woman SHG in Kurud village, Durg block, Durg district, Chhattisgarh under the ACC-NABARD supported 'Ujjyara Project'

drinking water sources through the preparation of water safety plans led to the identification of specific operation and maintenance requirements for all hand pumps. The repair works carried out have enabled access to safe drinking water. Force lift pumps (FLHP) have provided water facilities for the students and school staff, for bathroom purposes and have reduced wastage of water. Rain water harvesting structures will increase the water table for long term utilization of FLHP. The issue of protective irrigation was addressed through the creation of farm ponds (5 percent model) and renovation of existing ones. The provision of protective irrigation will allow beneficiaries to cultivate their kharif crop during dry spell and rabi crop with the remaining water.

Capacity building of communities was adopted as a medium to improve the profitability of agriculture. Trainings have been conducted on the cultivation of vegetables and the use of organic manure, better

agricultural equipment, drip irrigation methods, biogas plants, papaya farming, green house nursery, mulching methods etc. The adoption of better agricultural practices will help improve the profitability of current agricultural production.

Project Outputs during the current reporting period

- Generation of alternate livelihoods for members of two SHG's through adoption of mushroom cultivation
- Improvement in access to safe drinking water through planning and implementation of water safety plans for 25 hand pumps
- 50 percent increase in irrigation capacity of existing ponds through restoration
- Provision of 90 days of irrigation to rabi crop

Income generation through Mushroom Cultivation

Kurud is a small village located in Durg district of Chhattisgarh. Mrs Mukta Gupta is part of a SHG named Maa Annapurna Devi Mahila Swa-Sahayata Samooh, created in 2008. The ten member group was engaged in the production of 'Anarsha', however due to marketing problems they discontinued operation of the SHG. In the absence of additional incomes, all resorted back to domestic or agricultural work.

Mushroom cultivation was promoted as a low investment based income generating activity for women in this village. It also has a good market price. Based on a nominal investment of Rs 1100 per SHG, a mushroom production unit was setup in the house of one of the SHG members. All the 10 members were trained and oriented on cultivation of mushroom, before initiation of the activity.

After adoption of mushroom cultivation by the SHG, the members were able to successfully produce 30 kilograms of mushroom during one production cycle. Based on an average market value of Rs 130-150 per kilogram, the members of the SHG were effectively able to generate an additional income of Rs 4000-4500 per SHG. Mushroom cultivation has, thus, emerged as a unique alternate of generating income among the women of the village.



Watershed Management

Planning meeting with Village Watershed Committee (VWC) members and Collaborating agency representatives at Anjeni village, Lasadiya block, Udaipur district, Rajasthan

OVERVIEW

The natural resource base of a region includes elements of climate, land, water, soil and biodiversity. With 300 million hectares categorized as prime natural resource, the significance of land as a source of livelihood and income for people of a region is immense. With estimates quantifying the extent of degraded land at 120 million hectares, questions surrounding the continuation of existing practices have taken center stage. The central concern receiving the attention of policy makers at the national level is the declining organic content of soil and the need for systematic management of soil resources.

Watershed programmes have evolved over the last four decades since its introduction as an approach to the planning and management of natural resources. With the evolution of the approach at the national level, a corresponding change has also been adopted by AFPRO since the establishment of the model watershed at Devpimpalgaon by AFPRO in the 1980's. Our focus has shifted to a more holistic approach with emphasis on livelihood development and capacity building of watershed communities apart from the development of land and water resources. The execution of a holistic approach has facilitated an improvement of not only

the natural resource bases, but has also contributed to improvements in livelihoods.

The inherent understanding among communities on utilization of their land for varied purposes is lagging behind when compared to the emerging challenges of degradation. Scientific planning of natural resources, while promoting the participation of local communities, will develop a systematic understanding among communities on the challenges limiting the utilization of their land. Such an understanding serves as an effective tool in mobilizing communities on adoption of appropriate measures targeting improvement in productivity.

Broadly, Common Pool Resources (CPR) refer to all those resources (land and water) that are collectively used and held by the community. Policy papers at the national level indicate a neglect of these resources, even among schemes which focus on physical resources. Programme interventions by AFPRO seek to address two aspects associated with the utilization of these resources – physical and human. The physical aspect targets the introduction of all those measures which seek to improve productivity; while human aspect addresses the challenge of community based utilization of resources through formation of User Groups.

Prioritization of the watershed approach at the national level can be observed through inclusion of the approach under different schemes and programmes of different departments. Regular reviews have resulted in the formulation and propagation of the Common Guidelines. However, there still exists a gap between the institutional mechanisms created, thereby hindering effective implementation of the approach. AFPRO's experience in providing technical assistance for the adoption of watershed programmes is being judiciously utilized through our selection as State Resource Organization (SRO) by the State Institute for Rural Development (SIRD), Maharashtra.

The focus on provision of technical and financial resources, targeting an improvement in agricultural productivity of rainfed areas, represents a paradigm shift in agricultural policy at the national level. The state of natural resources and the socio-economic conditions of communities that inhabit such areas calls for the adoption of a more comprehensive approach. Watershed development programmes represent such an approach. AFPRO's experiences of implementing watershed programmes in the rainfed areas of Maharashtra are proof of the success that watershed programmes can have in strengthening natural resource bases and livelihoods of communities dependent on them.

Strengthening livelihoods through conservation and restoration of natural resource bases

Degradation of land resources raises questions regarding the continued adoption of agriculture based livelihoods observed across rainfed systems. Soil erosion, poor soil quality, vegetative cover and erratic rainfall affect the productivity of crops. Watershed development programmes represent an integrated approach to strengthening livelihood bases of communities residing in rainfed areas through conservation and restoration of the natural resource base that communities depend on.

With 33 percent of privately owned land categorized as rainfed and over 52 percent as unculturable waste, Surnarwadi watershed located in part of the Godavari basin extending across Dharur taluk of Beed district represents a classic example of a rainfed area. The cumulative effect of poor utilization of land resources in the region can be observed in declining productivities due to increasing soil erosion, loss of essential soil nutrients, organic matter, and deterioration of vegetative cover. With a high dependence on erratic rainfall, coupled with fragile natural resource bases affected by degradation of one form or another, livelihoods of communities in these regions represent segments of higher vulnerability.

Indo German Watershed Development Programme (IGWDP) is a bilateral programme between Government of India and Government of Germany. AFPRO has been working as a Project Implementation Agency (PIA)

Project Title	Indo German Watershed Development Programme (IGWDP)
Location	Surnarwadi watershed, Dharur taluk, Beed district, Maharashtra
Collaborating Agency	NABARD
Duration	September 2008 – September 2012

under Phase-III of IGWDP covering 1250 ha of Surnarwadi, Repewadi and Jaibhaiwadi villages. The objective of the programme is to develop micro-watersheds in a comprehensive manner through active participation of the local community. Based on detailed planning exercises surrounding existing natural

resources, improvements in agricultural activities, agro-allied activities, erosion control and sustainable pasture management were initiated.

The aim of land and water resource development under watershed programmes is to improve the quality of land by restricting further degradation and thus improving the potential productivity of the land. An assessment of pre and post watershed activities reflects an achievement of programme objectives. In areas treated with land and water development measures, an average increase of 5-8 percent in the yield of kharif crop and 8-13 percent increase in yield of rabi crop has been recorded. Under the umbrella of Dry land horticulture, less water requiring crops like custard apple and vegetables like brinjal, carrot and potato were promoted in 33 hectares. Farmers adopting cultivation of horticultural crops have not only recorded substantial yields between 50-350 percent, but also improvements in yield have enabled farmers to migrate from subsistence cultivation to surplus cultivation, generating additional revenue.

Diversified livelihoods with a livestock component have a high capacity to deal with multiple stresses and adapt to harsh climatic conditions. Communities of Surnerwadi, Repewadi and Jaybhaywadi own a range of livestock of varied productivity. Based on an assessment of the type of livestock owned by the local communities, average feed requirements, and average availability of feed, livestock management interventions were planned. Replacement of livestock with high productivity and relatively low feed requirements were propagated among communities. Effectiveness of livestock replacement is represented

by an increase in work animals (oxen, buffaloes, cross bred cows – higher productivity; relatively lower feed requirement) at the expense of indigenous cows, sheep and goat – lower productivity; higher feed requirement.

Pastures are an important part of the livelihood base of rural communities. They are a primary source of fodder for grazing animals and also a source of fuel wood. 52 percent of the watershed is categorized as wasteland and consists of poor vegetative cover, erosion etc. Watershed activities have given due importance to restoration of degraded wastelands through pastureland management activities. Mechanical measures like contour trenches and grass seeding along bunds have been adopted to improve vegetative cover as well as reduce the intensity of erosion. Free grazing has been prohibited to increase the initial survival of vegetative cover. Sustainability of pastureland management interventions have also been encouraged through implementation of NABARD stipulated contribution of labour. Pastureland protection activities were implemented in 350 ha of private land and 55 ha of public land. Species like neem and jatropa have also been planted under afforestation activities in 25 ha.

An assessment of the impact of watershed activities is a reflection of the inherent potential of watershed programmes. Watershed programmes serve a dual purpose of strengthening livelihood bases of communities residing in rainfed areas by protecting the natural resource base communities dependent on it. Development of diversified livelihoods through an integrated approach reduces the risk of communities to climatic extremes.



Cement Nala Bund at Repewadi village, Dharur block, Beed district, Maharashtra

Building Capacities of institutions under Watershed Development Programmes

Capacity building of institutions plays a critical role in execution of government programmes. There is a need to build the capacities of multiple stakeholders on processes involved in participatory management of watershed. AFPRO has been identified as a State Resource Organization to implement capacity building on various themes for YASHADA, State Institute for Rural Development (SIRD)

Common Guidelines for Watershed development projects have recommended the creation of institutional mechanisms at the national, state, district and village level for effective implementation of watershed development programmes. However, the level of knowledge on the processes involved in effective implementation of watershed programmes through a participatory approach at the different levels of the institutional set up is varied. Capacity building serves as a medium to enhance knowledge and skills and develop a shared vision among stakeholders.

Capacity Development has been recognized as a precursor for the success of any participatory project. YASHADA, Pune is the State Institute for Rural Development, working as an Apex agency to implement various capacity building programmes for stakeholders under Integrated Watershed Management Programmes. The stakeholders include Vasundhara State Level Agency, District Watershed Development Unit, Project Implementation Agency and Watershed Committee members. For conducting capacity building events on various themes, YASHADA has appointed NGOs through a screening process on the basis of relevant experiences and strengths. These NGOs are categorized into three levels (viz. State Resource Organization, District Resource Organization and Project level Resource Organization) as per their deliverables at different levels.

Project Title	State Level Resource Organisation under Integrated Watershed Management programme (IWMP)
Location	Pune, Aurangabad, Amravati, Nagpur, Western Ghat,, Maharashtra
Collaborating Agency	State Institute for Rural Development (SIRD)
Duration	2011-2012

AFPRO has been selected as one of the State Resource Organization (SRO) under the programme to conduct capacity building events on different modules for four divisions of Maharashtra state. It will enhance skills and competence of project staff to work with the Gram Panchayat's. It will deepen the participatory process through imparting participatory rural appraisal skills and will initiate change in attitude among project staff. The modules and the divisions assigned to AFPRO are given below.



S.No	Theme	Division allotted	Type of participants
1.	Project and Finance Management	Pune, Aurangabad, Amravati, Nagpur	Agricultural Supervisor, Agricultural Assistant, Account officer, Project coordinator, Technical Expert
2.	Livelihood Promotion	Pune	Community Organizer, Agricultural Expert, Agricultural Assistant, Livelihood Expert
3.	Social Mobilization	Western Ghat	Community Organizer, Livelihood expert

Building capacities on community based planning under watershed programmes

The lack of understanding on the inherent capabilities of land to support different uses and the type of conservation measures that should be adopted is leading to degradation of land resources. Integration of participatory land capability planning under the purview of watershed development programmes serves as an effective medium to scientifically plan the utilization of land with the adoption of necessary conservation measures to ensure sustained production.

Extensive and efficient utilization of soil resources has been identified as an important means to improve food, fodder and fiber production by the Department of Water Resources, Government of Rajasthan. Anjeni watershed located in the Aravalli hills of Rajasthan represents the undulating terrain that characterizes the region. The nature of land use is leading to problems of soil erosion, degradation and over use. There is a need to scientifically plan natural resources with the end users which can help in increasing the potential/capacity of land to support different land use.

National Bank for Agriculture and Rural Development (NABARD) is implementing the Indo German Watershed Development Programme (IGWDP) in five districts of southern Rajasthan. AFPRO has been identified as Project Facilitating Agency (PFA) for implementing a watershed development programme

Project Title	Capacity building phase (CBP) of Indo-German Watershed Development Programme
Location	Anjeni watershed, Lasadia block, Udaipur district, Rajasthan
Collaborating Agency	NABARD-Udaipur
Duration	2011-2012

in Anjeni watershed, Lasadia block, Udaipur district. The aim of the programme is to stabilize agricultural production, improve pasture land and establish a system for sustainable management of the watershed projects. AFPRO was initially identified for the Capacity Building Phase (CBP) which serves to

Physical activity for constructing 'Earthen Nala bund' (ENB) by the community with major women participation, Anjeni village, Lasadiya block, Udaipur district, Rajasthan.



test the efficacy of watershed interventions on a demonstration basis and build capacities of local communities on the approach prior to adoption, across the whole watershed.

Village Watershed Committee (VWC) have been identified as the institutional body at the village level for planning, implementation and monitoring of watershed programmes. AFPRO has facilitated the formation of a VWC named Kalka Mata Jal Grahan Vikas Samiti for undertaking the watershed activities across Anjeni watershed. Gender sensitivity was promoted with 36 percent of the committee comprising women. Capacity building activities comprising trainings on integrated watershed development programmes, different types of soil and water conservation measures, land use planning, roles and responsibilities of VWC, accounts and record keeping were provided to build local capacities in planning and implementation watershed recommendations.

Land capability planning (Net planning) is a systematic approach to increase productivity of land based on internal properties of the land to support different uses, through the introduction of relevant soil conservation measures (mechanical/vegetation based) and better crop management practices. A participatory approach

Project Outputs during the current reporting period

- Net planning of 101.4 ha of land of Anjeni watershed successfully completed
- 64 ha of land treated with relevant soil and water conservation measures
- Activities like staggered contour trenches, water absorption trenches, earthen field bund with outlet, earthen gully bund (NADI), boulder gully plug, stone bund, pits and 'thor' fencing (vegetative plantation) have been implemented
- Capacity of 11 members of Kalka Mata Jal Grahan Vikas Samiti (VWC) built on participatory planning and implementation of watershed activities

involving land owners and farmers was adopted to undertake plot wise field surveys. Detailed information on factors affecting land use such as soil depth, slope, erodability, texture and existing land use were collected for 101.4 hectares of land. Based on the capability of land to support different uses, soil and water conservation measures were proposed to improve productivity and conserve the natural resource base. Local communities were also involved in the planning and finalization of feasible measures.

Participatory planning of natural resources through Village Watershed Committee (VWC)

Mr Narayan Singh owns plot no 671 covering 5.57 ha of land along with 5 of his brothers in Anjeni village, Lasadia block Udaipur. His land is severely degraded and is characterized by steep slope and rapid erosion. Scientific planning of the natural resources in his plot is essential to reduce erosion and subsequent degradation affecting it.

Based on the land capability planning carried out in his plot, five characteristics which determine the suitability of his land for different land use were measured. With his land identified as not suitable for the cultivation of agricultural crops, soil conservation measures dedicated to reduce soil erosion were identified (staggered contour trenches and earthen gully plugs). The active involvement of members of Kalka Mata Jal Grahan Vikas Samiti, Village Watershed Committee enabled the approval of proposed activities and release of money by the VWC.

Staggered contour trenches and earthen gully plugs constructed in his plot will help improve in-situ retention of moisture, reduce run off and thus check soil erosion and contribute to down slope recharge of groundwater. The gradual development of vegetative cover in his plot will further restrict the effect of land degradation.

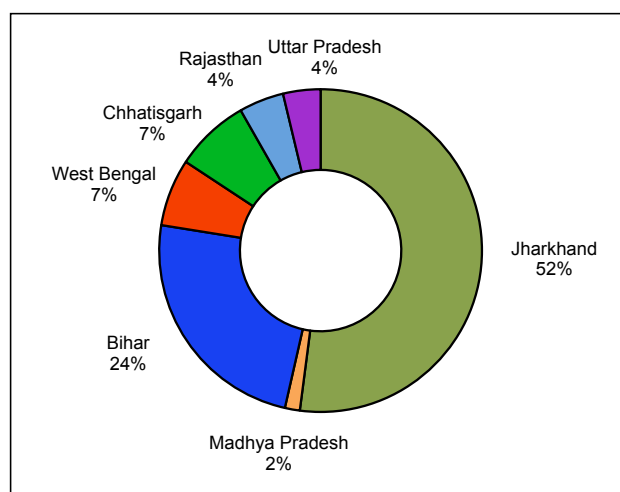
The collaboration between World Vision India and AFPRO was further strengthened during the financial year 2011-2012. With visions coinciding with respect to the management of natural resources and generation of livelihood alternatives, AFPRO's socio-technical services were sought in conducting detailed technical surveys, feasibility studies and periodic

monitoring and review of physical construction. The scope of AFPRO's technical services sought has grown into a more comprehensive nature with emphasis on hydro geological investigations and livelihood promotion through agricultural interventions apart from the management of land and water resources.

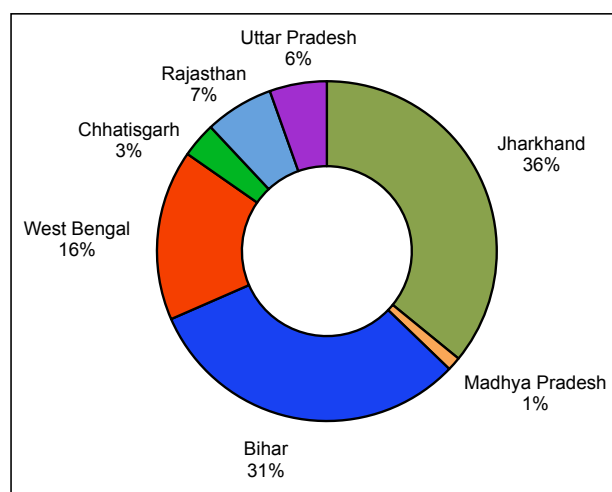
ADP-Duars	<p>Location: 5 villages, Duars block, Jalpaiguri district, West Bengal</p> <p>Technical Services rendered: Duars is located in the foothills of Darjeeling and is characterized by undulating topography and sandy soil. Undulating topography and high rainfall introduce new challenges to the construction of rain water harvesting structures essential for the improvement of irrigation in the region. Based on detailed technical feasibility study conducted, earthen embankments for flood protection and irrigation channels cum spillways with culverts were identified as the most technically appropriate interventions to increase irrigation potential in the area.</p>
ADP-Jamui	<p>Location: 4 villages, Chakai block, Jamui district, Bihar</p> <p>Technical Services rendered: Target villages of Chakai block are characterized by small farm holdings and lack of access to irrigation facilities. Based on the nature of land holdings, a cluster based approach to the creation of small farm ponds was recommended. Farm ponds serve as effective mediums to store surplus runoff from the surrounding catchment. Depending on the size of the farms each pond will be able to store water between 120 and 600 cubic meters. The creation of farms ponds will serve to provide essential protective irrigation to the farmers while ensuring recharge of the groundwater.</p>
ADP - Godda	<p>Location: 10 villages, Poraiyahat & Sundarpahari block of Godda district, Jharkhand</p> <p>Technical Services rendered: Creation of water harvesting structures serve as an effective medium to store available water for the development of agricultural resources in a region. Depending upon technical feasibility surveys, AFPRO identified a combination of ponds, irrigation wells, lift irrigation systems and check dams for the management of natural resources in the target villages.</p>
ADP-Baran	<p>Location: 18 villages, Kishanganj block, Baran district, Rajasthan</p> <p>Technical Services rendered: World Vision is implementing a programme titled 'Work for Food'. AFPRO's technical services were sought for the identification of feasible water conservation measures. Based on detailed technical surveys, AFPRO recommended pond and canal renovation work. The implementation of the recommendation by the ADP's will benefit 805 households and provide irrigation water to approximately 2000 acres of land.</p>
ADP-Aparajita	<p>Location: 10 villages of Birdha block, Lalitpur district, Uttar Pradesh</p> <p>Technical Services rendered: World Vision is implementing a programme titled 'Land and Water management'. With infrastructure development as one of their priority areas, AFPRO technical services were sought to identify the necessary interventions. Two infrastructure related works were identified – repair work at the local school and operation and maintenance of existing open wells through construction of para-pits.</p>
ADP - Narsinghpur	<p>Location: 4 villages, Narsinghpur block, Narsinghpur district, Madhya Pradesh</p> <p>Technical Services rendered: Based on a detailed feasibility survey, AFPRO prepared and submitted feasibility cum concept proposal. The proposal represents an integrated approach to development with emphasis on soil and water conservation, rainwater harvesting and groundwater recharge, agriculture development, forestry and horticulture.</p>

ADP-Giridih, Singhbhum, Bokaro, Dumka, Godda	<p>Location: 33 villages, Gandey block, Giridh district, Jharkhand; 19 villages, Musboni block, Singhbaum district, Jharkhand 5 villages, Chas block, Bokoro, Jharkhand 100 villages, Kathikund block, Dumka district, Jharkhand 12 villages Poraiyahat block of Godda district 60 villages Chakai block of Jamui district, Bihar</p> <p>Technical Services rendered: Access to drinking water is an important issue affecting states. There is a drastic need to fulfill the demand of water in the present day scenario. ADPs of World Vision India have been working in poor tribal dominated rural villages in different parts of the states. The initiative of the ADP's in solving drinking cum domestic water problem in the project villages, has culminated in the technical services of AFPRO being sought.</p> <p>AFPRO has conducted hydrogeological investigation at 138 sites in different project villages. Based on the recommendations, 83 hand pumps have been installed by the respective ADP, at identified sites. More than 2485 families and 2700 students stand to benefit through safe drinking water from the installed hand pump. Awareness has also been generated in the community for water saving, sanitation and repair and maintenance of the hand pumps.</p>
ADP - Mahasamund	<p>Location: 9 villages, Mahasamund block, Mahasamund district, Chhattisgarh</p> <p>Technical Services rendered: Pendradih, Gongibahara, Nawapara, sorid, Chorbhatti, Bansivni, Kodar, Pesapani, and Bellar are nine villages in Mahasamund block. Laterite soil and low groundwater levels are affecting productivity. There is also a lack of awareness among farmers on soil quality and appropriate amount of fertilizer application. Kitchen gardens are an important source of livelihood for the local communities. Based on soil and water quality testing, recommendations on the amount and type of fertilizer application were made. Based on the chemical properties of the soil, recommendations on most suitable crops was also made. Adoption of these recommendations by the farmers will contribute to improvements in income without degrading the environment.</p>
ADP- Duars	<p>Location: 7 villages, Malbazar block, Jalpaiguri district, West Bengal</p> <p>Technical Services rendered: AFPRO conducted a technical feasibility study for promotion of irrigation facilities in the area. Construction of a pucca irrigation channel was recommended.</p>

**World Vision India
Project Coverage (Villages)**



**World Vision India
Project Beneficiaries (Households)**



Water and Sanitation



Maintenance of hand pump by trained women hand pump care takers, Kodripal village, Sukhma block, Sukma district, Chhattisgarh

OVERVIEW

India accounts for 16 percent of the world's population. However, it has access to only 4 percent of the usable fresh water. The scarcity of water resources is bound to increase as population is expanding even as available fresh water resources are fixed. Competing use of available water from different sectors will add tremendous pressure on already strained water resources. Concerted efforts during the financial year have been made by AFPRO to mobilize communities within the aquifer/watershed area, to generate demand for managing water requirements through community action in an integrated manner. AFPRO has been working as anchor organization cum state convener for Fresh Water Action Network (FANSA) Maharashtra Chapter - network for social action and advocacy on water and sanitation issues in Asia.

Available water resources vary across the geographical expanse of the Indian sub continent. With per capita water availability declining, improvement in the efficiency of water use across competing sectors has emerged as a key approach to address the looming problem of water shortage. Improving the efficiency in its utilization also holds the potential to play a critical role in improving livelihoods of the people in water scarce areas. Through our programmes in water scarce areas, AFPRO has

attempted to advocate for adoption of the approach by local communities. Capacity building has been used extensively to develop an understanding among local communities on advantages of better utilization through the introduction of location specific better practices.

Lakes, reservoirs and tanks represent the million water bodies found in India. Poor maintenance, siltation and other forms of degradation have reduced their storage capacities. Due significance, to the management of surface water bodies has been given by the Planning Commission, as a means to address drinking and irrigation water requirements of communities. AFPRO has provided its technical expertise in identification of treatment measures aimed at improving the storage capacities through de-siltation, catchment treatment and restitution of such water bodies. The recognition of the ecological significance of wetlands culminated in the adoption of an innovative initiative, addressing two key issues – wetlands and climate change, by WWF-India; titled 'Sujal – A Pilot Demonstration on Restoration of Wetlands for Enhancing the Adaptive Capacity of Ecosystems'. AFPRO has extended its technical expertise through the identification and execution of development structures (ponds) which will contribute to the organization's broader programme objectives.

Minor irrigation represents a vital source of irrigation especially in rainfed and water scarce areas. There are financial constraints on introduction of new irrigation measures, creating the need to prioritize the issue of effective management of existing water resources. The recognition provided to local beneficiaries, in management of their irrigation systems, by the state of Rajasthan is represented through the introduction of Rajasthan Farmer's Participation in Management of Irrigation System (RFPMIS) Act-2000 & Rules-2002. AFPRO has contributed to the endeavor of the State Water Resources Department of building capacities of local beneficiaries. Our hand holding support to the formed Water User Associations, through sharing of our socio-technical expertise, will help strengthen these institutions for eventual independent take over future.

The significance of provision of safe drinking water

in national policy is well represented by the National Water Policy according it highest priority. In rural areas, bacteriological contamination of water is an important cause of water borne diseases. Due importance needs to be given to health issues associated with the consumption of such contaminated water. Working relations with UNICEF-Raipur, built during programme implementation in tribal villages of Chhattisgarh, have culminated in AFPRO's active propagation of the water safety planning approach. Our experiences of working with tribal communities highlight, the positive role communities can play in adopting simple measures that ensure consumption of safe water for drinking. Capacity building of local communities on participatory management of drinking water sources has been adopted by us as an integral strategy. It serves the dual purpose of involving local stakeholders in the planning process, while developing a sense of ownership.

Facilitating decentralized democratic governance of minor irrigation systems

Lack of adequate management of existing water resources developed by the state, creates problems of poor water utilization and preservation of the system. Financial constraints limit the adoption of new projects. Participatory management of existing irrigation projects by beneficiaries will help develop a sense of ownership of water resources and the irrigation system and also promote economy in water use and preservation of the system.

Irrigation is the lifeline of agriculture and its development and management a necessity. Minor irrigation projects having command areas of upto 2000 hectares are an important source of irrigation especially in low rainfall areas of Rajasthan. There are problems observed with respect to further exploitation of surface and ground water, and financial constraints on the adoption of new projects. Proper management of existing water resources development structures is extremely essential at this juncture. Since farmers are the real stakeholders they need to develop a sense of ownership towards water resources and irrigation systems. It promotes economy in water use and preservation of the system.

Project Title	Capacity building initiatives of Water User Associations under Rajasthan Minor Irrigation Improvement Project (RAJMIIP)
Location	Bhilwara, Chittorgarh and Pratapgarh district, Rajasthan
Collaborating Agency	Water Resource Development, Government of Rajasthan
Duration	April 2010 – October 2012

The Water Resource Department (WRD) has sanctioned a project for capacity building of Water User Associations (WUA) under the Rajasthan Minor Irrigation Improvement

Project (RAJMIIP). It comprises 327 WUA of existing minor irrigation systems from 21 districts of Rajasthan. AFPRO has been entrusted with capacity building of 50 WUA in Bhilwara circle comprising of Bhilwara, Chittorgarh and Pratapgarh districts.

Decentralized democratic governance and transparent decision making processes in management of irrigation systems have been promoted through mass awareness building camps on core principles of the Rajasthan Farmer's Participation in Management of Irrigation System (RFPMIS) Act-2000 & Rules-2002 - Participatory Irrigation Management (PIM). Orientation and capacity building trainings; exposure visits and state level seminars have been adopted as mediums to communicate the message of PIM.

Water User Associations comprise of beneficiary farmers of minor irrigation projects. The composition of the group lacks the technical strength required for effective execution of their allotted roles and responsibilities. During implementation, AFPRO has initiated the process for formation of a District level Technical Support Group (DTSG) and WUA level Technical Support Group (WTSG). The formation of such groups comprising of members of Departments of Agriculture and Non Government Organizations will provide the

WUA with the necessary technical support to execute their assigned roles and responsibilities.

The effectiveness of AFPRO's engagement can be observed in the proactive role being adopted by members of the Water User Association's (WUA). Members are actively participating in supervision and monitoring of ongoing re-habitation work. Based on an understanding of the need of ownership, imparted during the trainings, almost all WUA have successfully mobilized beneficiary families to contribute 15 percent of the re-habitation work at a watercourse. The success of the trainings conducted on collection of water tariffs can also be observed with individual WUA mobilizing members to collect tariffs and open bank accounts.

Project Outputs during the current reporting period

- Capacities of 50 WUA built on participatory management of minor irrigation systems
- Initiated meetings of WUA with Technical Support Group (TSG) in the Department of agriculture
- Initiated meetings of District TSG
- Over 250 meetings of WUA conducted on select themes of soil and water testing, water and agriculture development

WUA meeting conducted by Mr. Govardhan Lal, President Rudari-WUA, District-Chittorgarh



Conflict resolution brings clarity and confidence in management of a minor irrigation system for WUA members of Rudari

Rudari is a minor irrigation system comprising of a dam and distribution channels. The command area (263 hectares) covers 5 villages namely Rudri, Hathiyani, Godhiyana, Sarno ka kheda and Surpur. Under the RFPMS Act-2000 & Rules 2002, a WUA comprising of 5 members of the management committee and 642 general body members (command area beneficiaries) was registered with the Water Resources Department; and management of the system handed over to them. The members of the WUA were not aware of the exact nature of responsibility assigned to them under the Act. Due to lack of formal orientation on their new found responsibility, members of the WUA lacked capacity and confidence in effective management of the irrigation system.

Felling and auction of dry trees (around dam/embankment) is a part and parcel of renovation work conducted by the Water Resource Department. Conventionally the authority of auctioning and collection of tariffs has been with the Gram Panchayat. Sh. Bhagirath Jat, Sarpanch, Gram Panchayat, Surpur had been fulfilling his duty of conducting such activities for the past 3 years. The routine Operation and Maintenance (O&M) at the dam required the felling and auctioning of the dry trees, for which standard procedures of advertisements were fulfilled. However under the Act, the authority now rests with the WUA, marking the beginning of clash.

Due to greater awareness about their new responsibilities and proactive response of the WUA, the Block Development Officer (BDO) sanctioned a stay order on the auction. After almost two months of discussions, negotiations and constant support of AFPRO, the WUA successfully conducted the auction and was able to generate revenue of Rs 60,000. The money has been deposited in the bank and will be used for O&M. This episode had build confidence of WUA and enhanced confidence level of the president.

Participatory management of drinking water

The effectiveness of management of water resources by the community is often challenged by the lack of local capacities to address issues affecting the sector. Barriers of distance and technological know how restrict communities from ensuring sustained use of the resource. Dissemination of information and capacity building of community based groups and existing village level institutions can help bridge the information gap enabling communities to actively participate in the management of drinking water.

Appreciating the linkages between safe water, health and productivity, drinking water accorded highest priority by the National Water Policy, is often challenged by issues of availability and access. The promotion of a decentralized approach to planning creates the need for capacity building of the institutional mechanisms at the grassroots level to enable them to ensure sustained availability and access to safe drinking water. The lack of ownership by users and poor coordination between multiple stakeholders, results in inadequate operation and maintenance of drinking water sources compromising water security.

Project Title	Capacity building and mitigation measures of drinking water hand pump (HP) sources
Location	Konta, Sukma and Chhindgarh blocks, Dantewada district Chhattisgarh
Collaborating Agency	UNICEF, Raipur
Duration	January 2011 – December 2011

Sukma block is one of the tribal dominated blocks of Chhattisgarh. Supported by UNICEF- Raipur, AFPRO

has addressed challenges characterizing the WASH (water, sanitation and hygiene) sector in 4 Internally Displaced People (IDP) camps of Konta block and 30 villages of Sukma and Chhindigarh blocks of Dantewada district. With children identified as one of the most vulnerable sections to WASH challenges, programme interventions were brought under the umbrella of the Integrated Child Protection Programme (ICPP) supported by UNICEF.

Ensuring regular operation and maintenance of hand pumps at the village level requires the existence of trained professionals with relevant knowledge and skills. A cadre of village youth were identified and trained as village level hand pump care takers. Skills on maintenance of above ground level components and maintaining sanitary conditions of hand pump surroundings were imparted. The development of capacities of local youth towards the maintenance of hand pumps, an important source of drinking water in the project villages has helped reduce the dependency of local communities on technicians stationed at distant district quarters. The increased awareness among communities on major sources contaminating drinking water and sanitary conditions surrounding hand pumps have contributed to improvements in the management of drinking water sources by communities through the promotion of

Project Outputs during the current reporting period

- Increased awareness among school children from 136 schools on sanitation and hygiene practices
- Community based management of drinking water sources through formation of 25 Water User Groups
- Reduced dependency of communities on external technicians through creation of group of 368 hand pump care takers

simple, adoptable and replicable techniques like fencing and kitchen garden creation.

Capacity building, targeting two tiers of the institutional setup – local communities and village level Panchayati Raj Institutions has been conducted, highlighting their role in provision of safe drinking water. Water Users Groups (WUG) were formed and strengthened as a medium to ensure participatory management of safe drinking water. The involvement of local communities in assessment and preparation of a mitigation plan for all drinking water sources has developed a sense of ownership towards drinking water sources. Simple mechanisms for collection of user fees were developed and WUA members capacitated.



Maintenance of hand pump by trained women hand pump care takers, Kodripal village, Sukhma block, Sukma district, Chhattisgarh

Women hand pump (HP) caretakers

Smt. Phulkumari Sethi is an 8th standard pass out from Kodripal village, Sukma district, Chhattisgarh. The hand pump near her house is the only source of drinking water. Due to irregular operation and maintenance, the hand pump (HP) becomes defunct, leaving a number of women like her, to travel considerable distances to fetch water.

On hearing about the training on hand pump care takers being conducted in her village, self motivation drove her to participate in the training. Organized by ICPP UNICEF, participants were trained on repair of above ground level problems, simple and regular maintenance of HP and adoption of good hygiene behaviour near the hand pump.

Post the training received, she is very happy to be among the few women in her village who are able to repair minor defects in hand pumps. She is also actively engaged in maintaining a clean environment around the hand pump and in motivating others to do so.

Assessing Geo-hydrological characteristics for preparation of groundwater management plans

Regional geo-hydrological studies provide information on groundwater occurrence in different terrains. Systematic surveys can help in generating basic information on various geo-hydrological parameters. These parameters are essential for future planning of groundwater development and management.

Groundwater resources are of immense significance in water scarce areas as it is often the primary source of water for drinking and irrigation purposes. Buxwaha region of Chhatarpur is a water scarce area, rich in prospective mineral resources. Mining activities associated with mineral resources, often require generous volumes of water during different stages of production. This leads to mining companies entering into systematic explorations of surface and groundwater to identify water resources which will cater to their demand. The diversion of such water resources holds the potential to diminish sustained access of water by local communities, affecting livelihood bases of the region.

Rio Tinto is one of the leading mineral exploration companies having its operation in India. The proposed Bunder diamond mining project is being presented with the potential of being the “first significant world class diamond mine in India”. As part of a pre feasibility study

Project Title	Geo-hydrological studies at Bunder area
Location	Buxwaha block, Chhatarpur district, Madhya Pradesh
Collaborating Agency	Rio Tinto, Australia
Duration	2011-2012

being conducted by M.N. Dastur & Company (P) Ltd for Rio Tinto, AFPRO’s technical expertise in undertaking groundwater studies was utilized. With the intention of AFPRO’s engagement clearly defined, a geo-hydrological study was conducted for the proposed mining pit area to evaluate the geo-hydrological character of the site.

Geophysical surveys consist of scientific techniques used to obtain information on the properties and features of sub surface strata. They can provide valuable information on

groundwater properties of the rocks. The utilization of AFPRO's experience in groundwater studies has been observed, with staff collecting detailed information of different sub surface rock strata. Accurate and reliable survey instruments and interpretation software were utilized to analyze collected information.

Inclusion of water utilization patterns of local communities, residing around the periphery of the proposed mining pit is a critical component of the water management plan of the mining pit. There utilization patterns coupled with the potential demand of water for mining purposes can create an additional stress on existing water reserves. A detailed hydro-census has been conducted around the periphery of the proposed pit. Spatial and temporal analysis of two attributes – groundwater depth and quality have been used to understand the groundwater utilization patterns of the community with regard to the three prominent seasons – pre monsoon, monsoon and post monsoon.

The recommendations provided by AFPRO on geological formations, features of the formations (fractures etc), nature of groundwater storage, flow and utilization will be integrated into a broader framework, culminating in the development of water management plans for the catchment aimed at improving efficiency and recycling initiatives to promote sustainable utilization of water among all the stakeholders.

Project Outputs during the current reporting period

- Hydro census of 34 wells including water level and quality collected for three seasons
- Vertical Electrical Sounding (VES) data collected at 52 locations
- Geographical based Information System (GIS) maps prepared for water table fluctuations and water quality

Building capacities of local communities on preparation of water security plans

Enabling safe access to sufficient amount of water has emerged as the focus of national policy on water supply. Planning the water requirements with local communities, helping them identify the challenges and potential solutions to address their problem, will help in a more sustainable and equitable use of available water. Water Security plans thus, represent a new approach to planning the management of water resources.

Water is essential for life and ensuring access to water has been the focal point of programmes of the Government of India. National Rural Drinking Water Project (NRDWP) guidelines suggest provision of safe drinking water, meeting the water quality standards of BIS 10500 in the vicinity to the community of not more than 500 m distance in plains, and not more than 100 m elevation difference in hilly areas, and the time taken to fetch water should not exceed 30 minutes. NRDWP guidelines also suggest ensuring source sustainability while Operation and Management (O&M) to be taken care of by the local PRIs.

Project Title	Drinking Water Security plan development
Location	One village in Nellore and Four villages in Anantapur district, Andhra Pradesh
Collaborating Agency	CWS (Centre for World Solidarity) and Water Aid
Duration	September 2011 – February 2012

Based on project objectives, household and habitation level data has been collected to assess water demand and supply. This includes drinking & domestic needs

of human and livestock; agriculture and any other needs. Secondary data pertaining to soils, geology, geomorphology, water quality, aquifer characteristics, groundwater and surface water availability, water supply system, etc. were collected and compiled for the project area.

Community consultation were held to visualize and assess the existing situation in terms of water availability, its sources, water utilisation, distribution network, source sustainability measures O & M, etc. Transect walk within and outside the village limits were undertaken to physically verify the status of drinking water and irrigation sources. Based on an analysis of existing

situations, recommendations to both the community and the government could be made. Water budget based on the availability and demand was arrived at and the same was shared with the community. Inclusive in the recommendations were drinking water and security options for the different habitations. After considering various options and the availability of funds and acceptance of the options by both the community and the government, the Project Implementing Partner (PIP) was advised to facilitate the implementation of mutually agreeable option after obtaining necessary approvals and ensuring community's support.

Adoption of indigenous technologies for creation of water resources

Tribal families in the hilly areas of Gajapati district have from time immemorial utilized traditionally available material and the flow of gravity to transfer water from springs to their villages. The methods used by them are however, prone to regular damage. The water is also at greater risk of contamination during the transfer from source to end users. Modern techniques have been used to adapt the existing practice to create assets in these villages which provide safe and sustainable access to water.

Perennial streams are an important source of drinking water for tribal families residing in the hilly terrain that characterizes Gajapati district of Orissa. The hilly terrain of the region has for long been exploited to transfer water to villages on the basis of gravity flow, using locally available material like bamboo. Between the origin of water at the source to its consumption by users, water stands the risk of contamination from different sources. There is therefore a need to create such assets in these villages which provide safe and sustainable access to water for these tribal families.

Bishops house, Berhampur is a Christian humanitarian organization working to create lasting change in the lives of children, families and communities serving in poverty and injustice. Chalice International is a Canadian funding organization and has been providing Bishops house with

Project Title	Water Assets
Location	13 villages, Gajapati district, Orissa
Collaborating Agency	Bishops House, Behrampur
Duration	June 2011 – May 2012

the financial assistance in their development objectives. AFPRO was selected to provide Bishops house with socio-technical support in identifying potential drinking water and irrigation facilities in 13 villages of Gajapati district, Orissa.

Protection of water in dug wells from bacteriological contamination is a challenge. Percolation of contaminated surface water is the most common route of pollution of well water. The construction of an apron around the well

can prevent entry of contaminated or used water at the well site by seepage into the well. Such sanitary wells protect drinking water from bacteriological contamination. Based on geo-hydrological survey the location of wells was identified in Kampadar, Gunjiponka and Padelponka village. Aprons built around each wells protects the water from seepage and subsequent bacteriological contamination.

Tribals in Gajapati district are local experts in diverting water from perennial streams to their villages through locally available materials like bamboo for drinking and other allied purposes from time immemorial. The whole system works on the principle of gravitational flow without any modern technological inputs. Modern touch to the traditional knowledge is only reflected in the size and shape of the structures. It consists of structures and components like check dam/collection chamber, sedimentation tank, filter unit, storage or distribution tank, pipeline and stand posts equipped with water taps. Sedimentation tanks which collect the spring water have been built in Jharganda, Laxmipur, Kampadar, Gunjiponka, Lekharigaon, Lekhariguda, Tikelma, Rapet, Luthuri and Rabba village. Filters attached to



Newly constructed drinking water source using gravity flow system at Raba village, Mohna block, Gajapati district, Odisha under the project 'Water Assets'

the sedimentation tanks serve as water purifiers before water is transferred to the villages through a distribution network with stand posts as the end point.

Project Outputs during the current reporting period

- 13 tribal villages provided access to assured and safe drinking water
- 13 tribal villages provided access to protective irrigation

Participatory water monitoring - a tool for Democratic Water Management

Intensive groundwater use in agriculture has become a dominant, yet under perceived aspect of contemporary water use. The capacity of groundwater to provide flexible, on-demand irrigation and in all climatic zones has led to a groundwater boom. Developing a thorough understanding of groundwater and the utilization patterns of communities that depend on it, can help in the management process, as they are direct beneficiaries to the water and those at stake of greatest loss in case of over exploitation of the resource.

Intensive groundwater use in agriculture has become a dominant, yet under perceived aspect of contemporary water use. The capacity of groundwater to provide flexible, on-demand irrigation and in all climatic zones has led to a groundwater boom. The exploitation of groundwater resources has led to growing concerns over its continued availability. Assessing the utilization pattern of the communities that depend on groundwater is essential.

Project Title	Water and Democracy
Location	2 villages, Karanja block, Washim district, Maharashtra
Collaborating Agency	Center for World Solidarity (CWS) & EED (Evangelischer Entwicklungsdienst – Church Development Services)
Duration	January 2010 – January 2013

It would serve as a guide in the formulation of strategies to reduce the dependency and promote recharge measures while ensuring availability of the source in the future. While systematic assessments of groundwater are essential, involvement of the community and their understanding on the need to manage the resources they depend on cannot be ignored. Awareness needs to be created among users and their capacities developed to ensure adoption and implementation of any of the recommendations made as part of the systematic assessment process.

Water and Democracy in South Asia is a programme taken up by Center for World Solidarity (CWS), supported by EED. The second phase of activities were initiated from January 2010. Capacity building, lobbying and advocacy are the core areas of interventions during this phase. Besides this our thrust is on mobilizing communities within the Aquifer/watershed area to generate demand for managing water requirements through community action in an integrated manner, including water supply and sanitation; and to create an enabling environment for water resource management and allied services.

The tool kit on groundwater monitoring developed during the first phase is under demonstration in two villages of

district Washim. These are the villages where NABARD supported Holistic Watershed Development Programme is under implementation. The existence and functioning of VWC in the villages have culminated in responsibilities of groundwater monitoring and management being entrusted to them. A total of 10 observation wells have been established and farmers trained in recording the data. Water budgeting exercises conducted in the villages have shown very good impacts at the community level in terms of sensitization and mobilization. An effect of this is the enhanced participation of the community in the ongoing watershed activities. Successful demonstration of groundwater monitoring in these villages have contributed to changes in DPR (Detailed Project Report) guidelines of NABARD. Acceptance of the broader programme objectives by member organizations of FANSA has been the adoption of the groundwater monitoring system/tool kit in their on going programmes.

As a part of its advocacy initiatives, AFPRO has started consultation with the State level IWMP officials for inclusion of Community Based Ground Water management system into watershed programmes. The focus is on the eventual inclusion of groundwater monitoring as part of IWDP.



VWC president recording rainfall data, Karanja block, Washim district, Maharashtra

Human and Institutional Development



Construction of Biogas plant in progress, Caimbaba village, Kakyu district, Kenya

Training on construction of Biogas Plants, Kenya

Biogas technology is one of the most trusted and popular alternative energy sources used for cooking and lighting in different continents. The development and dissemination of biogas technology in Kenya started since the 1990's but still its propagation is on a small scale. The availability of vegetative potential (Napier grass) and farm animals like cows, pigs, sheep and poultry creates an enormous possibility to explore bio gas as a means of meeting the energy requirements of local communities. In the present situation, biogas is also one of the important components of CDM (Clean Development Mechanism) projects.

Driven with the intention to promote Clean Development Mechanisms, Atmosfair, as a CER buyer and CDM consult joined hands with Sustainable Energy Strategies

Limited (SES) Kenya for implementation of CDM project in Kenya. AFPRO New Delhi was approached for transferring AFPRO's invented Deenbandhu biogas plant model 2000. The relatively lower costing model holds the potential for greater adoption by local communities in comparison to other expensive models available.

AFPRO has conducted several overseas training programmes on Deenbandu biogas technology. The programme was organized for a duration extending from 1st November, 2011-11th March, 2012. The training programme offered a good experience to understand the potential of the biogas technology and manpower. The course was designed for the technicians and masons who have enough experience in construction work. During this entire period 40 Biogas Plant were constructed and commissioned and 3 technicians & 30 masons were trained.

Climate Risk Screening – A Short Course

The occurrence of extreme weather patterns such as droughts, floods, extreme hot summers and cold winters, all within the boundaries of a single climatic region are nothing other than a terrible warning

of global warming and climate change. Worse still, the changing climatic and weather patterns are projected to have severe negative impacts on food production, food security and natural resources. Climate change threatens

to constrain the economic development of India, whose economy is rooted in climate sensitive sectors like agriculture, fisheries and forestry, thus jeopardizing the livelihoods of millions.

With Climate Change being one of the key current concerns, a lot of effort is being made world over to build a strategic knowledge base on climate change. But, the desired success will only be achieved with the adoption of suitable and diverse coping mechanisms related to water management and farming practices at the local level, with specific reference to rural India. Therefore, AFPRO with its focus on increasing the knowledge base on the subject and implementing project specific adaptation mechanisms, extended its mandate to engage development/government professionals on adaptive planning to reduce climatic risks and enhance the livelihood capacities of rural India. A “Short Course on Climate Risk Screening” that was held on September 20th – 21st, 2011 at the AFPRO Training Centre, in New Delhi.

The course strongly emphasised the need to integrate scientific knowledge with community experiences of climate change in order to plan adaptive measures. As a pioneer of such initiatives, the course attempted to understand climate change risks and vulnerabilities; introduce concepts and approaches to climate change adaptation; and, thereby provide the participants with a framework for Climate Risk Screening. In essence, through this course AFPRO aimed at enhancing the capacities of the participants to integrate climate change risks and adaptation considerations into their project design and management leading to adaptive planning. The course was attended by participants from KKID, Coimbatore, Regional Center for Development Cooperation, IGSSS, NABARD, World Vision India, GERES, CEVA

Land and Water Management – A Short Course

Participatory watershed management has emerged as a well accepted tool and sound strategy for long term productive agricultural sustainability through efficient management of natural resources, economic viability and social acceptability of production system and protection of environment. A large number of projects for productivity enhancement are being implemented on the watershed approach. Soil and water conservation including micro-scale water resource development is the foundation of any watershed development programme supported by a number of other protection, production and livelihood support interventions. This is so because water is the most crucial input and acts as a catalyst to bring in ecological, social and economical revolutions. Hence a proper understanding of the basic principles approach and application of participatory watershed management

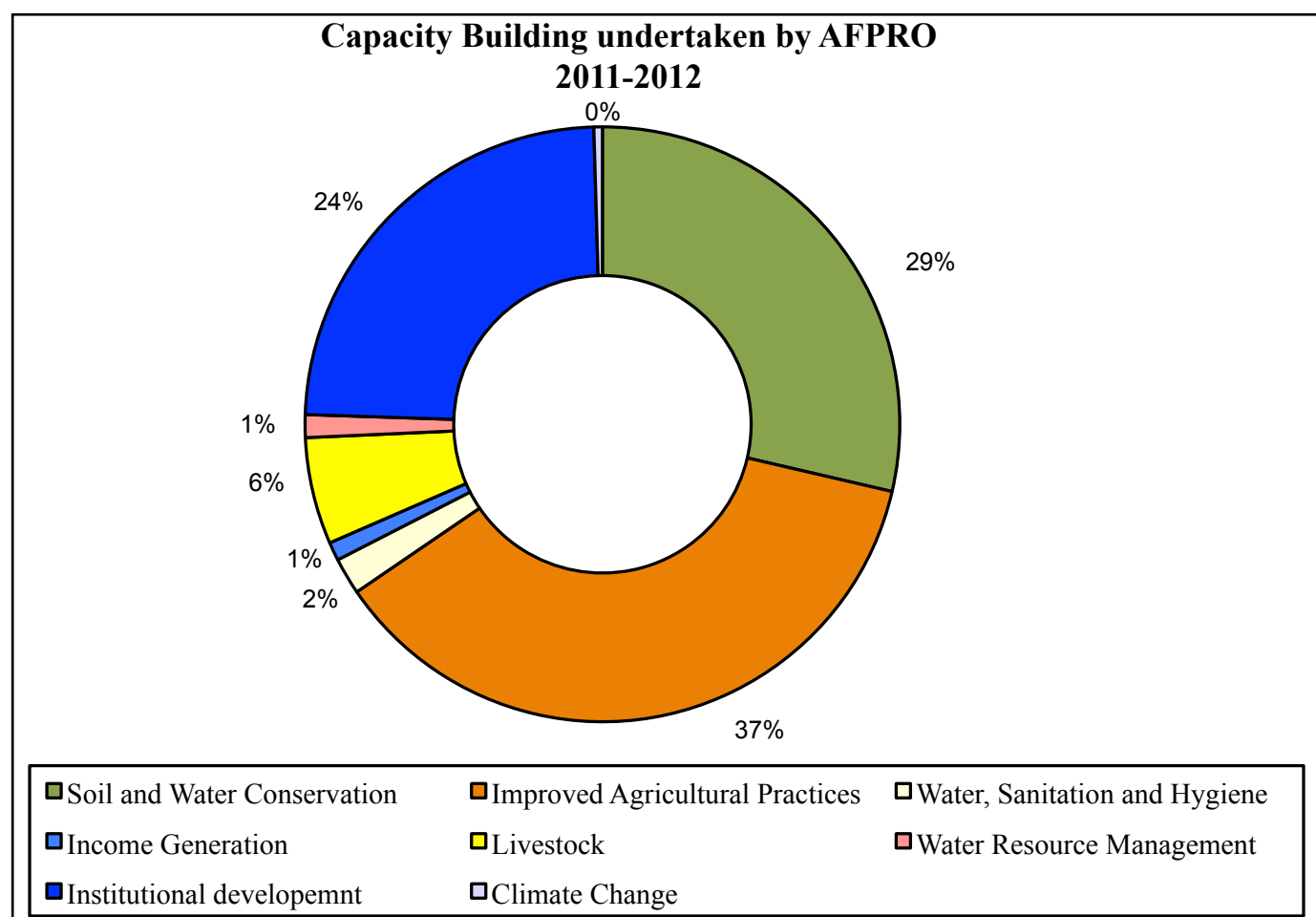
is essential for resource conservation and sustainable production.

In order to develop capacity of our newly recruited staff and update the knowledge of existing engineers and hydrologists (civil and agricultural engineers) a 5 days training programme with Central Soil And Water Conservation Research & Training Institute (CSWCRTI) was planned for the month of October 2011. Bringing together required content, specialists/resource personnel, graphic designers, survey instruments, demonstration site etc. for developing appropriate training materials is an important task for organising trainings successfully. CSWCRTI was identified due its expertise in preparation of demand based training module to conduct the training for engineers working in rural development sector and associated with land survey, planning and designing of various structures in watershed development programmes.

Decentralized Planning Under BRGF

Action for Food Production (AFPRO) has been identified by Ministry of Panchayati Raj, Government of India, as a Technical Support Institution to facilitate the preparation of district development plans under the Backward Region Grant Fund (BRGF). The objective of the Plan is to prepare a holistic plan document for the district that would include the plans for sectors such as education, health, rural employment, roads, infrastructure development, etc. The Plan has been prepared in participatory manner through consultation with all relevant stakeholders at the grassroots level and upwards.

The backward region grant fund is designed to redress regional imbalances in development. The fund will provide financial resources for supplementing and converging existing developmental inflows into identified districts of Lakhimpur, Dhemaji and Karbianglong in Assam; and Yavatmal district, Maharashtra. The key features is convergence of resources available from centrally sponsored, central sector schemes, state sector schemes and own PRIs/local institutional funds to develop the perspective and annual plans at each level of local government. The allocation under BRGF could be planned to be utilized for bridging gaps in functioning these plans.



Building Linkages

The altruistic activity of philanthropy, intended to serve others through the donation of money, goods or services to support socially beneficial or humanitarian causes has evolved in India over the years. Representations of this evolution are changes in the sources of funding, issues covered, criteria for fund utilization, public communication and the level of accountability. Funding from corporations through Corporate Social Responsibility (CSR) has emerged as one of the most prevalent forms of philanthropy, with the level and nature of activity; and organizational engagement varying widely. It has emerged as a means by which companies can demonstrate their commitments towards being socially responsible. The operation of specialized agencies and non government organizations across the geographical expanse of the country are an appropriate link between target issues being adopted by corporations and the development issues being addressed by them.

An initiative of the Department of Public Enterprises, Ministry of Heavy Industries and Public Enterprises, Government of India has been the creation of National Corporate Social Responsibility Hub (NCSRH) at the Tata Institute of Social Sciences (TISS). The NCSRH represents a centralized system where core functions of CSR including learning and knowledge dissemination take place. The central objective of the NCSRH is to work with

Indian Public Sector Companies (PSU) to create inclusive growth and promote sustainable development. The NCSRH is an instrument to support the PSUs to contribute to economic and social transformation of the country. An extension of this partnership is the empanelment of reliable and credible organisations as partners for CSR activities. Based on exhaustive, detailed and multi-layered scrutiny, a list of organisations that are people-centric, have experience and expertise in a specific field and have a planned approach to developmental activities with a specific focus on the welfare and rights of the vulnerable groups in society have been identified.

AFPRO has successfully been empanelled with the National CSR hub hosted at TISS. The empanelment represents another association of AFPRO with a national platform. It has provided AFPRO with an opportunity to share its socio-technical experience and expertise in the development sector with corporations including Public Sector Companies. During the financial year 2011-2012, AFPRO has been engaged in building linkages with Central Public Sector Undertakings associated with the NCSRH and other corporates engaged in CSR activities. Successful linkages have been built with PSU operating in Chhattisgarh and Andhra Pradesh while initiatives of building similar linkages have been initiated in Assam and Orissa.

S. No	Project Title	Funding Agency	Duration	Location	Coverage	Key Components
1.	Ujiyara Project	ACC-NABARD	2011-2014	6 villages, Jamul district, Chhattisgarh	4864.98 ha	Land and water management
2.	Feasibility Survey for Soil & Water Conservation	Balco, Korba	2011	12 villages across Korba, Raigarh, Surguja, Kabirdham district, Chhattisgarh	1661.24 ha	Land and water management
3.	Feasibility study for Land and water management	Korba West Power Company Limited, Raigarh	2011	15 villages, Pussore, Raigarh, Chhattisgarh	2208 ha	Land and water management
4.	Feasibility study for Land and water management	Grasim Cement Works, Rawan, Raipur (C.G.)	2011	4 villages, Rawan, Raipur, Chhattisgarh	388.37 ha	Land and water management
5.	Feasibility Survey for Soil & Water Conservation	Bhilai Steel Plant	2011	5 villages, Durg district	2670.73 ha	Water resource development, livelihood promotion
6.	Promotion of sanitation in 15 thanidas	Bharat Dynamics Limited (BDL)	2011	15 village hamlets, Nalgonda district, Andhra Pradesh	1000 household toilets	Household sanitation facilities

Financial Statements

Balance Sheet As At 31st March 2012

Particulars	31st March 2012 (Rs.)
SOURCES OF FUNDS	
Funds and Reserve	60,195,369.65
Programme Balances	8,300,622.55
TOTAL	68,495,992.20
APPLICATION OF FUNDS	
A) Fixed Assets	
i) Gross Block	63,602,955.29
ii) Less: Depreciation	49,813,562.20
iii) Net Block	13,789,393.09
iv) Capital Work in Progress	-
	13,789,393.09
B) Investments	27,198,814.00
C) Current Assets	
i) Interest Accrued on Deposits	1,478,412.44
ii) Recoverables & Prepaid Expenses	6,172,422.69
iii) Cash & Bank Balances	26,573,053.52
	34,223,888.65
D) Less: Current Liabilities & Provisions	6,716,103.54
Net Current Assets	27,507,785.11
TOTAL	68,495,992.20

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: 20.09.2012



Income And Expenditure Account For The Year Ended 31st March 2012

Particulars	31 st March 2012 (Rs.)
INCOME	
Programme Contributions	4,895,781.52
Training Course Reciepts	100,000.00
Miscellaneous Receipts	538,486.93
Sale / Disposal of Assets / Old Items	815,539.00
Interest - Savings & Deposits	1,749,632.84
Total	8,099,440.29
EXPENDITURE	
Core Integrated Development Programme	
Human and Institutional Development	1,057,202.00
Socio - Technical Personnel Cost	24,808,447.16
Outreach Support	2,279,586.63
Information Services	445,046.00
Administrative Cost	
Admn. - Personnel Cost (F & A)	4,794,500.51
Outreach Support	262,627.00
Office Exepenses	4,576,774.43
Hired Services	1,417,825.30
Capital Expenses	266,582.24
ED's Discretionary Fund	50,000.00
	39,958,591.27
Excess of Expenditure over Income Transferred to :	
Programme Fund	(20,118,268.08)
Corpus Fund	(11,740,882.90)
Total	8,099,440.29

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

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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 I 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 than 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 reflect 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 Corporation 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 for the payment of voluntary retirement benefits to its employees 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.

Executive Director
Mr D.K. Manavalan IAS (Retd.)
Manager – Administration & Finance
Mr. Cyriac Mathew

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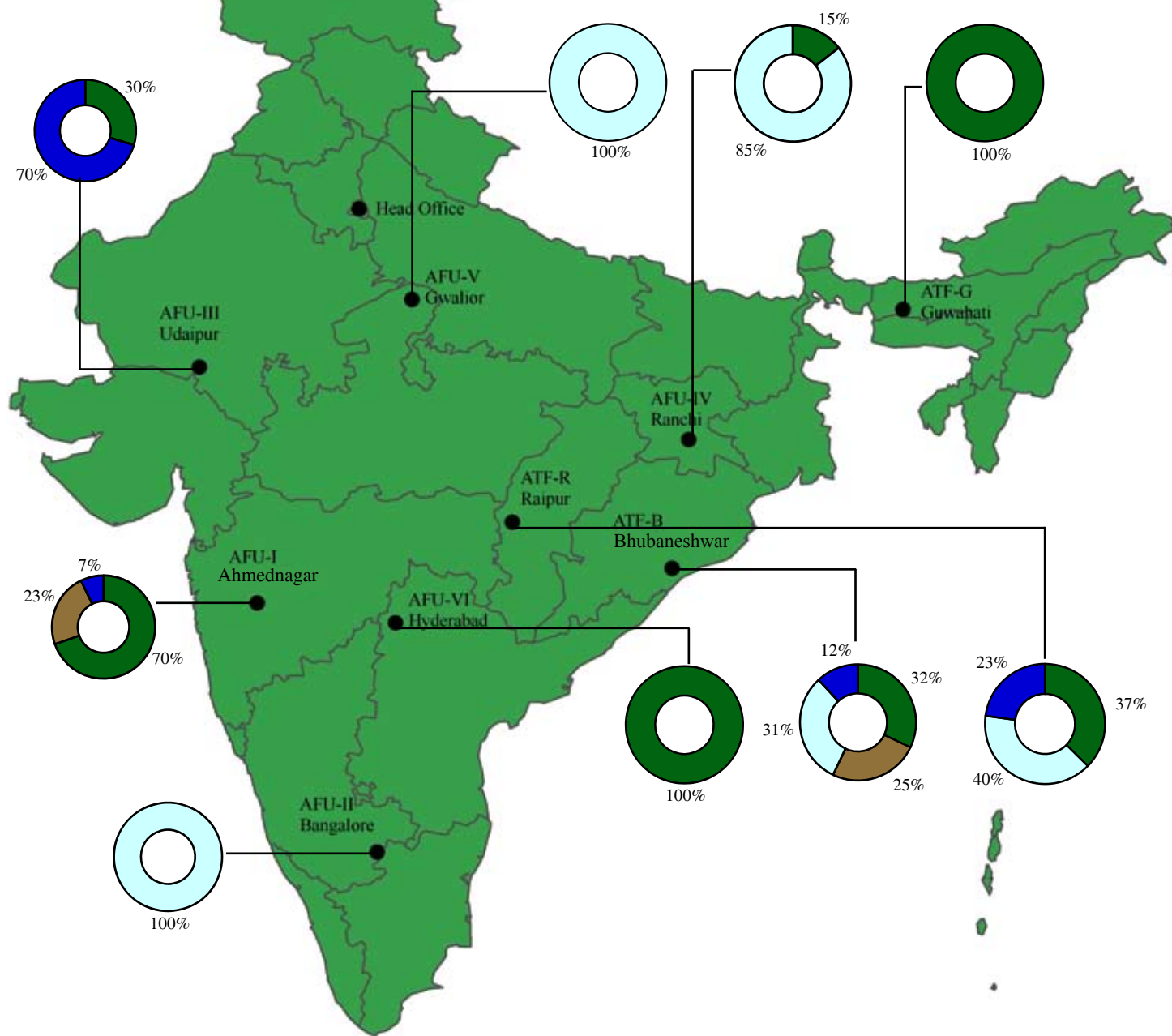
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Tailoring unit of women SHG, Jotia Saporì village, Sisiborgaon block, Dhemaji district, Assam

AFPRO INDIA



**9 Regional
Offices**

**8 Project
Offices**

**65 Projects Implemented /
Technical services extended**

**120000
Household benefitted**

Back Cover: Glimpses from AFPRO's experiences across India - Farm pond constructed in Gujarat; Construction of Nadi outlet, Rajasthan; Promotion of non farm based activities, Assam; Community digging a farm pond, Jharkhand; Integrated Farming Model developed in Assam; Access to drinking water, Orissa; Potato cultivation, Assam; Cultivation of gram, Maharashtra; Community meeting prior to construction, Jharkhand



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