

BAIF GROUP

- BAIF Development Research Foundation (BAIF) Public Trust under Bombay Public Trust Act, 1950. Founded in 1967 by Dr. Manibhai Desai.
- BAIF Livelihoods Not for profit Company under Section 25 of Companies Act, 1956 (Section 8 of the Companies Act, 2013). Established on April 16, 2012.
- BAIF Agro and Biotechnology Pvt. Ltd. (BABTPL).
- Vasundhara Agri-Horti Producer Company Ltd. (VAPCOL).



Our inspiration...

Dr. Manibhai Desai Founder, BAIF

To know more about our Founder and BAIF programmes, please visit www.baif.org.in

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Cover page: (Clockwise from top) Ms. Kausalya Das, D/o of BAIF farmer participant Smt. Minalata Das, Bhadrak; Promotion of integrated farm livelihoods; Shri. Bhojraj Kalsei Bhoi of Balangir.

MESSAGE FROM REGIONAL DIRECTOR

Rakesh K. Warrier Regional Director East



I have immense pleasure in presenting the progress and highlights of Odisha programme during the year 2021 - 22.

BAIF's Odisha programme is being implemented across 20 of the 30 districts covering about 1 lac rural households including the aspirational districts of Balangir, Kalahandi, Koraput, Nabrangpur and Nuapada. Except for the few initial months of the pandemic wave, the year has seen resurgence of operational scale to the normal extent. The field activities therefore were able to attain the desired objectives and scale new heights.

The generous support extended by the project sponsors during the year — Government of Odisha, Mahanadi Coalfields Ltd., Bill and Melinda Gates Foundation, Adani Foundation, Mahindra & Mahindra Ltd., JSW Foundation, HDFC Bank, Charity for Goodness Foundation and JSW Cement Ltd. is valued and gratefully acknowledged. It resonates deeply with the noble intents of the welfare of the society and progress of the nation. The year witnessed new partnerships with JSW Foundation, HDFC Bank and JSW Cement Ltd. for livelihood projects. The year also saw the successful completion of the Integrated Livestock Development Programme (ILDP) with a cumulative achievement of over 6.2 lac Artificial Inseminations thereby contributing positively to the dairy sector of the State. The post-project calving of NABARD supported sex sorted semen project was successfully reported. It is commendable that Shri. Anil Mishra, Cattle Development Centre In-Charge from Balangir district, was shortlisted for the prestigious *Gopal Ratna* Award of the Government of India. It has been inspiring to celebrate *Azadi ka Amrit Mahotsav* events in collaboration with sponsors and community participation.

The State programme aims to contribute to the Sustainable Development Goals (SDGs) of combating poverty, health, food security, sanitation, clean energy, sustainable growth, empowerment and climate change mitigation-adaptation. The resolve of doubling farmer income and enhancing living standards is reinforced by targeted outreach of the weaker sections and the un-served. Along with sustainability, renewed focus is laid on self-reliance in consonance with the Nation's mission of *Atmanirbhar Bharat*.

The support and cooperation from all stakeholders – sponsors, partners, participants, BAIF team and associates have been of tremendous encouragement. We remain indebted and look forward to continuous support for strengthening the rural communities and economy. The valuable guidance from BAIF's senior management and well-wishers is gratefully acknowledged.

Jai Hind!

(R.K. Warrier)

OVERVIEW

Suraj Kumar State Head BAIF Livelihoods - Odisha



I take this opportunity to present the progress and highlights of Odisha programme during the year 2021-22. The programme covers various domains of livelihood, climate action, health, nutrition, empowerment, and education. with an ultimate objective of enhanced living standard of the community. The emphasis on sustainable development is reinforced through its inclusive character with an outreach of more than 50% economically weaker sections and encouraging women participation. The Programme is spread across 20 districts of the total 30 districts in the State with an yearly outreach of about 1 lac farmers.

The year began with the crisis posed by the second wave of the pandemic but the collective efforts and optimism were able to revive the growth trajectory thereafter.

The Integrated Livestock Development Programme (ILDP) implemented with the support of the Government of Odisha came to a successful completion with outstanding achievements. Based on the positive outcomes, the next phase in convergence with NAIP commenced with the existing 285 Cattle Development Centres. The livestock programme received another recognition with Shri. Sakhi Gopal Sahu, CDC In-charge from Balangir being felicitated for outstanding performance during the BAIF Foundation Day celebration in Pune. Livestock development activities supported by Bill & Melinda Gates Foundation and Adani Foundation were further consolidated.

The Comprehensive Community Development Programme – *Utthan* supported by Mahanadi Coalfields Ltd. follows an approach of holistic community development through adoption of sustainable practices. Farm based activities covered 4700 households during the year. Off-farm enterprising activities like poultry and mushroom cultivation have been continued and expanded to cover a total of 158 families. The focus is to enable addition of ₹1 lac to the household income through livelihood initiatives based on which the participants can expand. Health awareness activities have also been undertaken. Enhancing learning ambience in schools has been pursued through educationally informative classroom paintings.

The year witnessed the commencement of new partnership with JSW Foundation, HDFC Bank, Charity for Goodness Foundation and JSW Cement Ltd. for implementing livelihood projects. The implementation phase of Mahindra & Mahindra supported *Jal Samruddhi* project was successfully completed.

Team capacity building exercise was organised across all cadres covering various functional and self-development themes. Aligning with the new normal, virtual platforms were used extensively for capacity building and extension.

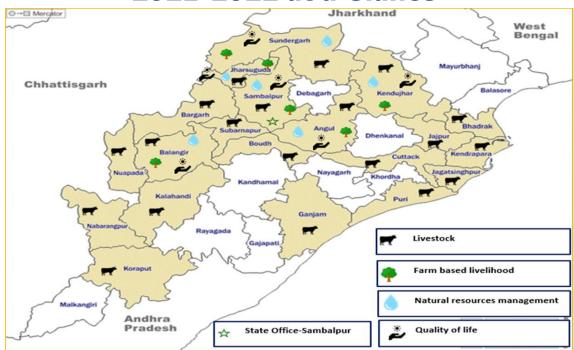
The support from our esteemed partners and sponsors in empowering the farmers of the State through sustainable development initiatives is commendable and is gratefully acknowledged. The valuable guidance from the senior management in shaping the programmes is appreciated.

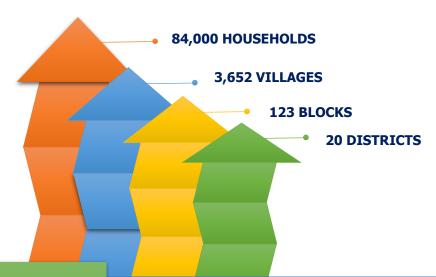
(Suraj Kumar)

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2021-2022 at a Glance





VISION



"Building a self-reliant rural society assured of food security, safe drinking water, good health, gender equity, low child mortality, literacy, high moral values and clean environment."

MISSION



"To create opportunities of gainful selfemployment for the rural families, especially disadvantaged sections, ensuring sustainable livelihood, enriched environment, improved quality of life and good human values. This is being achieved through skill development, effective use of local resources, extension of climate smart technologies, facilitation for value chains of farm-produce and community participation."

CORE VALUES



Equity | Excellence | Participation | Sustainability | Transparency | Wellbeing

PROGRAMME HIGHLIGHTS

1. LIVELIHOOD PROGRAMMES

A. Livestock-based Livelihoods -



Livestock rearing is a major source of rural household income and has been practiced as an allied vocation in concurrence to agriculture. The Livestock-based Livelihoods Programme of BAIF covers bovines (cattle and buffaloes), goats and poultry. A holistic approach of integrating different aspects of breeding, nutrition, health and management is followed for augmenting the income and strengthening the income stream at the family level. Door-step services are provided through the network of Livestock / Cattle Development Centres (CDCs) managed by trained para-veterinarians. Major projects implemented in the State under this thematic component are outlined below.

1. Integrated Livestock Development Programme (ILDP)

Sponsor: Fisheries and Animal Resources Development Department, Government of Odisha

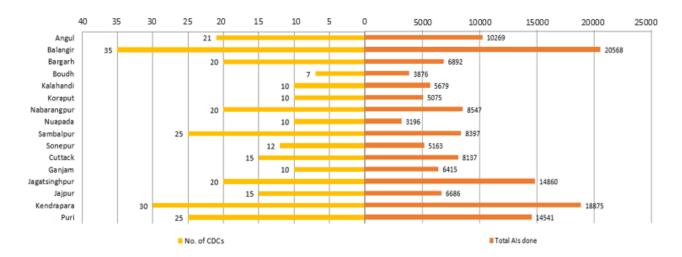
Location: 16 districts (Angul, Balangir, Bargarh, Boudh, Cuttack, Ganjam, Jagatsinghpur, Jajpur, Kalahandi, Kendrapara, Koraput, Nabrangpur, Nuapada, Puri, Sambalpur, Subarnapur)

Duration: June 2018 to October 2021

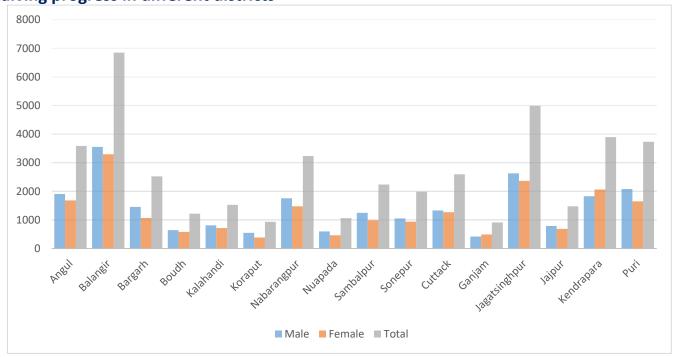
Key achievements: Based on the success of the "Kalyani" programme in transforming dairy farmers' livelihoods in 10 districts through 100 CDCs, the second phase- the ILDP was extended to 16 districts through a network of 285 CDCs. The programme has been successfully completed in October 2021 with an overall cumulative achievement of 98% on artificial inseminations and 95% on a pooled basis (Als and calving). A total of over 6.2 lac Als have been performed in the project while the year recorded 1.5 lac Als. Of the 1,54,700 cases followed up, an encouraging conception rate of 51.2 % has been recorded. 39,616 calf births have been reported during the year. Geo-tagging has been followed for monitoring and traceability. 70 CDCs have reported a monthly average of 80 and above Als over the entire project duration. The top 3 districts in terms of average Al per centre per year are Balangir, Jagatsinghpur and Angul. Promotion of indigenous breeds has been pursued. In addition to the core activity of scientific, quality breeding at door-step, important allied activities of health and nutrition have also been emphasized.

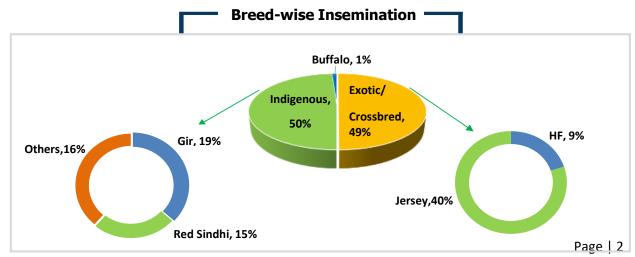
In recognition of the notable contribution, CDC I/C from Balangir Shri. Sakhi Gopal Sahu was felicitated on BAIF's Foundation Day. Shri. Anil Mishra, CDC I/C from Balangir was shortlisted for the prestigious *Gopal Ratna* Award of the Government of India.

AI in different districts



Calving progress in different districts





Major Outcomes*

- Birth of over 2.5 lac progenies of high genetic merit; promotion of indigenous breeds.
- Asset creation at farmer level worth over ₹85 crore from project-born female calves.
- Addition of over 20 crore litres to annual milk production worth over ₹ 500 crore.
- Increase in milk collection in the coverage area of CDCs from about 1.1 lac litres daily to over 2 lac litres daily during last 3 years.
- Increase in collection centres from 448 to 653 during last 3 years.

Livestock for livelihood and gender inclusive development

Location: Kulad, Banarpal block, Angul district

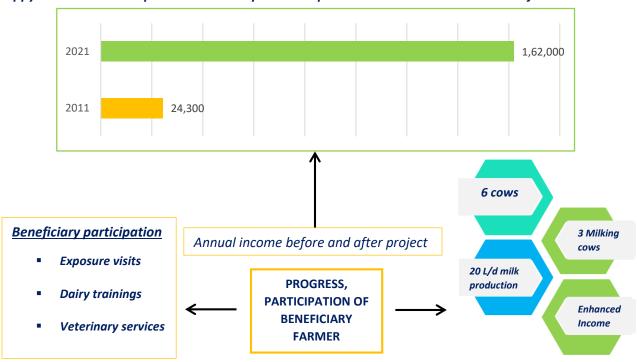
Smt. Anjali Dalabehera is the sole earner in her family. She belongs to the Banarpal block of Angul district. With agricultural land of only 15 decimals, she was looking for diversifying into other economic activities. With almost a decade-long association with the livestock development programme supported by the Odisha Government and implemented by BAIF, there has been a significant improvement in her socio-economic status.

Helping women gain access to services, new technologies (sorted semen) and improving their working conditions are ways that ensure maximum benefits. Keeping this in



mind, exposure visits and training sessions were planned with a focus on women's participation. Anjali regularly participates in dairy training sessions for good cattle management practices.

With an input cost of $\stackrel{?}{\sim} 50,000$, she is able to get returns worth $\stackrel{?}{\sim} 1,62,000$, making for a strong RoI. Anjali is happy with the services provided and she plans to expand her herd with 30 cows in the future.



^{*} over 4-5 years

2. Artificial Insemination Programme

Sponsor: Odisha Livestock Resources Development Society (OLRDS)

Location: 16 districts (Angul, Balangir, Bargarh, Boudh, Cuttack, Ganjam, Jagatsinghpur, Jajpur, Kalahandi,

Kendrapara, Koraput, Nabrangpur, Nuapada, Puri, Sambalpur,

Subarnapur)

Duration: December 2021 to December 2022

Key achievements: The programme is in continuation to ILDP and is being implemented in convergence with NAIP. BAIF has been entrusted with supervision and monitoring of the programme. Existing 285 centres have been operationalised under the new programme. A total of 5,439 Als have been reported in this new programme.

3. Livestock Development Programme

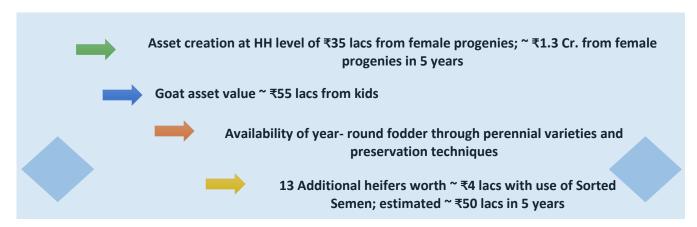
Sponsor: Adani Foundation

Location: Chandbali block, Bhadrak district

Duration: April 2019 to March 2024



Key achievements: The project is being implemented in the peripheral area of Dhamra port in the Chandbali block of Bhadrak district of Odisha. Beginning with two Livestock Development Centres, two more were added subsequently. The overall objective of the project is to augment the livelihoods of households in the cluster through sustainable initiatives related to dairy husbandry. During the year, a total of 1,813 artificial inseminations have been performed, comprising of the usage of 1,306 and 507 regular and sex sorted semen respectively. Goat AI introduced in the project has received an encouraging response with a total of 484 AIs reported during the year. With a focus on green fodder availability, 129 demonstrations covering perennial and seasonal fodder have been undertaken.





Livestock being a major contributor to the family income and being in abundance in Odisha in the form of both small and large ruminants, there are several other holistic-themed projects operating with the support of CSR partners which cover livestock activities as a part of the intervention package.

Significant contributions to family wellbeing are made in the CSR-supported projects and livestock continues to be the major contributor to family income as well as the dominant component of project intervention based in Odisha.

B. Water-centric Livelihoods

Agriculture forms the backbone of the rural economy and water forms the backbone for agriculture activities. Water-centric livelihoods have been laid emphasis in most CSR - supported projects as it directly supports livelihoods and immediately enhances family income.

Major projects in this theme are the Comprehensive Community Development Programme supported by Mahanadi Coalfields Limited, *Jal Samruddhi* Project supported by Mahindra & Mahindra Ltd. and the Holistic Cluster Development Programme supported by JSW Foundation. A Project wise description under this theme is given in the following sections.

1. Comprehensive Community Development Programme (CCDP) - Utthan

Sponsor: Mahanadi Coalfields Ltd.

Location: Angul, Jharsuguda, Sambalpur, Sundargarh

Duration: May 2019 to November 2024

Key achievements: The project is one of the major holistic initiatives supported by Mahanadi Coalfields Ltd. in 40 villages across 4 districts. It follows a holistic approach to



enhance living standards with a focus on livelihoods and quality of life. For sustainable livelihoods, the model is to create multiple income avenues spread across the year. Quality of life activities mainly focus on awareness and behavioural aspects. For both, a combination of improved practices and appropriate technologies is followed. 6,900 households have been covered up till now. During the year, 625 households were covered under water resources development and improved agriculture practices. The focus of the *Kharif* season has been on enhancing the yield while increasing the cultivated area with new crops is undertaken during the *Rabi* season. 8 solar lift irrigation systems of 5 hp each, enabling irrigation on 17 ha and covering 113 families, have been commissioned during the year. Diversifying income is pursued through a combination of the following activities:

- Small plot high value crop cultivation.
- Integration with water harvesting, conveyance, use efficiency and post-harvest management.
- Adoption of improved cultivation practices, residue free production.

Major Outcomes

- Establishment of 8 solar LI units providing additional irrigation potential to approximately 17 ha.
- Improved cultivation practices leading to approx 20% yield increment in paddy.
- Intercropping in 244 Wadis converting 48 ha of underutilised land to productive assets to farmers.

Transforming barren land into asset

Location: Badhunjharia village, Sundargarh district

Shri. Benudhar Bhoi and Smt. Pushpalata Bhoi belong to a poor tribal family having 1.6 ha of land as the only source of income. Benudhar was working as a daily wage labourer. With project support, they planted 56 plants of mango and lemon on 0.2 ha land and started growing bitter gourd, chilly & green vegetables in the established wadi. Inter-cropping practices could fetch ₹15,000 in a season.

The family got assured of income for 2 seasons. Their respect in the village has increased and the community looks up to them. This has led to active participation in the decision-making process of village development.







2. Jal Samruddhi

Sponsor: Mahindra & Mahindra Ltd. **Location:** Deogaon block, Balangir district **Duration:** November 2020 to March 2022

Key achievements: The project, as the name suggests, focused on water-centric livelihoods through various activities. The selected project area is mainly rain-fed with lack of livelihood avenues during the post-monsoon months. A model of water harvesting integrated with accessibility, use efficiency and downstream optimal utilisation has been introduced in the project which has resulted in tangible outcome of enabling additional cropping. The project was implemented in 4 villages



covering a total of 428 households. The major activities taken up included water resources development (harvesting, conveyance, drain line treatment), soil conservation, improved agriculture practices, promotion of micro-irrigation and diversion based irrigation. During the year, 80 farm ponds were excavated, 7 percolation tanks dug, 40 loose boulder structures built, 5 core wall gabions constructed, 80 water lifting

devices installed (including 10 solar lifting) and 80 micro-irrigation systems deployed. As a part of model village development, common utilities like solar street lights, drinking water purification units and custom hiring centres have also been pursued. Landless households were supported with seed capital for micro-enterprises like grocery stores, stationery kiosks, tailoring and catering.

Major Outcomes

- 36.5 TCM harvesting potential created through various water harvesting strictures as farm ponds, percolation tanks and other drain line treatment and area treatment measures.
- 30 ha of irrigation potential created.
- 100 ha of area brought under cultivation.
- Increased cropping intensity by 10-15% in participant families through direct project intervention.
- 20 TCM water saved per year (compared to flood irrigation).
- Increased income by ₹30,000 per family per season.

Appropriate technology for enhanced livelihood

Location: Dahimal, Landapathar GP, Deogaon block, Balangir district

Shri. Parameshwar Gadua belongs to village Dahimal. In his household there are 3 people. The household is wholly dependent on agriculture, NTFPs and daily wage labour. Due to drought, the HH could not get enough agricultural produce during the monsoon. It was challenging for him to meet the needs of his family.





He came to know about the trellis farming system which was promoted under the Jal Samruddhi project's support. Following instructions from the project team, he cultivated bitter gourd in his trellis. He recorded 20 kg of bitter gourd per week from his trellis. In 4.5 months, the total harvest of bitter gourd was 8 quintals with an earning of ₹24,000. Trellis-grown produce has provided his family with a steady source of income. Parameshwar Gadua and his family are grateful to BAIF and M&M for making their lives better.

3. Holistic Cluster Development Programme (HCDP)

Sponsor: JSW Foundation

Location: Joda and Koira blocks in Keonjhar and

Sundargarh districts respectively

Duration: November 2021 to October 2024

Key achievements: The project is spread across 17 villages in the mining areas of JSW Steel in Keonjhar and Sundargarh districts. The project after commencement could gather significant pace in execution completing all designated targets for the financial year covering more than 100 farmers within a few months. Major activities undertaken till March 2022 are given below.



- Excavation of 10 farm ponds with cumulative storage potential of 80 lac litres.
- Farm bund cum trench of 1,282 running meters covering 10 ha for soil moisture conservation.
- Support to 30 farmers with water lifting devices enabling irrigation on 6 ha.





C. Agri-horti-forestry (*Wadi*)

Agriculture and horticulture form the backbone of the economy in rural areas. In the context of Odisha, land resources are available in plenty, while water resources are lacking. Proper management and utilisation of water can result in efficient utilisation of land towards development of *Wadis* (tree-based farming model). This approach has been adopted in two projects wherein successful conversion of land has been undertaken to provide year-round productive engagement and additional income. BAIF's innovative model of "Agri-horti-forestry (*Wadi*)" integrates horticulture into the farming system for sustainable livelihoods through climate smart practices, productive engagement with underutilised land and optimal use of local resources. The model with horticulture as the core component, ensures multiple income streams round the year especially during the lean period from a combination of medium gestation-high resilience and short gestation-high return cropping patterns.

Major projects are HDFC Bank - supported Focused Rural Development Programme (FRDP) and Mahanadi Coalfields Ltd. - supported Comprehensive Community Development Programme (CCDP – *Utthan*) covering the above mentioned theme, brief description of which is given in the following section.

1. Focused Rural Development Programme (FRDP)

Sponsor: HDFC Bank Ltd.

Location: Jujomura, Rairakhol and Naktideul

blocks, Sambalpur district

Duration: January 2022 to December 2024

Key achievements: Wadi is an environmentally sustainable programme for regeneration of natural resources, especially tree cover, as one of the basic outcomes. It aims at helping low-income families establish agri-horti-forestry plantations to provide long-term sustainable benefits. Wadi establishment encompasses plantation of fruit bearing trees, forestry species and intercropping of vegetables along with soil water conservation measures development of suitable water resources for the plot.



Under the FRDP project, 200 such *Wadis* are in progress in which capacity building of farmers has been carried out in the initial duration. *Samudayik Utthan* – Focused Rural Development Programme (FRDP) sponsored by HDFC Bank under their flagship CSR initiative *Parivartan* aims to cover 5,000 families. At present, this project has benefited around 200 farmers with establishment of 20 farm ponds and distribution of 90 water lifting devices which have resulted in water harvest potential of 4.5 TCM and irrigation of 9 ha.

Access to irrigation: Critical link for livelihood...

Shri. Ashutosh Pradhan belongs to Lipinda village in the Jujomara block of Sambalpur district, Odisha. He is one of the participants of the Focused Rural Development Programme launched in collaboration with HDFC Bank in January 2022. The village lacks proper irrigational facilities since long and people have been using a traditional method of irrigation called *Tenda Patti*. Water is drawn from the well by hands using a long bamboo stick. This adds drudgery to women who usually draw water from wells. Through project support, he received a water lifting device which has made irrigation more convenient. The area under irrigation increased from 30 decimal to 50 decimal. This helped to boost the agricultural productivity of his field, as a result of which he could sell the extra produce earning ₹2,000 extra per month.



2. Comprehensive Community Development Programme (CCDP)- *Utthan*

Key achievements: The CCDP *Utthan* also has a component of *Wadi* establishment and 244 standing *Wadis* have been helping participants by way of additional income during the lean period since three years. Under the project, inputs and technical support have been provided to farmers for promoting food crops, vegetable crops and diversification. 244 *Wadis* have been established covering more than 48 ha of land until now. Within three years of the implementation of the project, the plantations are now in an early stage of fruit bearing.

Major Outcomes

- 244 Wadis established.
- 49 ha of additional green cover established.
- Additional income of approximately ₹30,000 per year for participant families on an average through intercropping.





D. Rural Non-Farm Sector-based Livelihoods

The role of the Rural Non-Farm Sector (RNFS) in augmenting livelihoods cannot be overlooked considering fragmented holdings and limited resources. Such village-level enterprises are stronger on the sustainability front and the engagements are productive with forward linkages. With this background, RNFS is a component of all the livelihoods support projects. The specific projects with RNFS component and their contribution to the RNF Sector are detailed below.

1. Jal Samruddhi

Key achievements: Individual enterprise development and additional income generation have been successfully achieved under the *Jal Samruddhi* Programme in Balangir. Adaptive methods for income generation while attending to pressing requirements of the local scenario can be easily observed.



Major Outcomes

- Livelihood support for 20 families for income augmentation through non-farm activities support.
- Creation of village level utilities and services.





Key achievements: Under CCDP, mushroom production and mahua value addition have been taken up where the approach followed is that of production at the household level and aggregation at the group level thus leveraging both collective strength and individual ownership.

158 new families have been added under Rural Non-Farm Sector-based livelihoods. 162 youth have been provided training in various vocations in both physical and virtual modes. This has resulted in employment for 142 youth. Training was provided on mushroom cultivation, petha making, sanitary pad production and value-added products of ragi and mahua. Petha brings about 25% more income as compared to raw melon sales. Additionally, backyard poultry in semi-free range model has been taken up by 280 households during the year.

Major Outcomes

- Adoption of mushroom cultivation for 100 families.
- Incremental income of ₹4,000 per family on an average for a 6-month period.

3. Livelihoods Enhancement Programme

Sponsor: JSW Cement Ltd. **Location:** Danagadi, Jajpur

Duration: March 2022 to July 2022

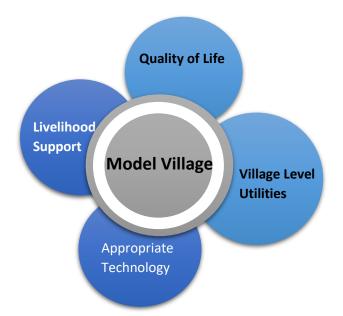
Key achievements: A short term project was initiated in partnership with JSW Cement Ltd., Jajpur for establishment of immediate and long term livelihoods benefits for the families residing in Direct Influence Zone (DIZ). As a part of the programme, a farm equipment bank was established to provide mechanised farm equipment such as power weeder and water pumping units. These equipment sets can be used by the group as well as be given on rental basis creating a custom hiring centre.

In another intervention package, tailoring machines were provided to WSHG members to provide them with an added means of income through tailoring. Major activities in the project area:

- Establishment of a farm equipment bank.
- Creation of a village level training facility.

E. Samruddha Gram (Holistic Village Development)

The concept of "Samruddha Gram" (Prosperous village or Model village) aims at providing sustainable livelihoods to the target families as well as improving their quality of life through household and village-level initiatives that improve the overall living standards in the village. The thematic areas of water management and improved agriculture primarily focused on livelihoods, and the initiatives planned for developing a model village were health, sanitation, empowerment, enterprise development, clean energy, education, functional literacy, digitalization, and common utilities which are aligned with the national priorities. These activities are undertaken in the Jal Samruddhi and CCDP -Utthan projects.







- 1. Farm equipment bank: A Farm equipment bank was established at Dahimal village where different agricultural equipment i.e, power tillers, water lifting pumps, bush cutters, farm sprayers, and power weeders were provided for ensuring smooth cultivation practices ranging from nursery preparation to harvesting. The bank is owned by a village level administrative body named M/S Maa Laxmi Gramya Committee, Dahimal.
- **2. Solar street light:** Lighting is essential for all villages and households. Hence, the project supported solar powered street lights in the Model Village where 17 solar street lights were installed. Apart from the model village, 12 solar street lights were also installed in other villages.



- **3.** *E-dost:* To provide various services digitally, one E-dost centre was established in the Model Village where the community can avail the services of depositing and withdrawing cash without visiting to bank or ATM premises which are far from the village area. The E-dost is equipped with a smart phone and thumb sensor which enables the E-dost to provide services to the villagers.
- **4. Drinking water purification system:** Two solar drinking water systems have been installed in Dahimal village with 5,000 litres of water storage capacity, and with the attachment of purification system. These systems are meant to provide purified water for drinking and also for the household.

2. CLIMATE ACTION PROGRAMMES

Climate change is a global threat which is affecting lives globally while barring growth at local levels too. In the present context, it becomes inevitable that all project interventions include climate change adaptation and mitigation measures to secure livelihoods and at the same time secure resources for future generations.

In Odisha, climate change has its effects in reduced and uncertain rainfall, erratic and prolonged dry spells in *Kharif* and abnormal temperature rise and fall which not only affects production and hampers immediate income but also mars the local resource base. Land - based interventions are taken up in such a manner as to include climate change adaptation along with maintaining livelihoods and income intact for immediate benefits. Specific interventions and packages promoted are listed and explained in the following sections.

A. Climate Change Adaptation and Mitigation Strategies

1. Jal Samruddhi

Key achievements: Land based interventions in agriculture are revolving around paddy in *Kharif* as that is the staple as well as universal crop in monsoons throughout Odisha. Short duration varieties of paddy which are also tolerant to prolonged water stress are promoted at the same time maintaining at par production as the long duration varieties. 120 families are covered under land based interventions with climate smart agriculture practices.

Water stress due to change in rainfall patterns is affecting crop production globally. Local water harvesting structures are established for immediate application to fields for reducing water stress and for bringing more area under cultivation. 80 such harvesting structures have been created in the form of farm ponds.



Renewable energy has been promoted under the project in the form of small capacity solar pumps which are able to irrigate a small patch of land thereby significantly reducing the stress of participants and eliminating the cost on fuel for pumping. 10 such units have been disseminated under the project successfully producing 9,000 kWh of green energy while irrigating additional 1 ha land.

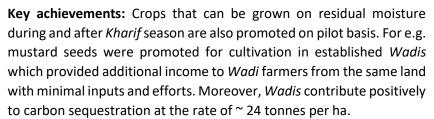
Major Outcomes

- Water harvesting structures in the form of farm ponds have been established for captive irrigation and cultivation during the lean season for reducing the stress of ground water and promoting optimum utilisation of local natural resources. This has enabled sustainable cultivation and utilisation of existing land adding to the family income to the range of 50%.
- Diversion based irrigation has been demonstrated in one site in Balangir which diverts rain water from natural drain lines towards cultivated lands via gravity with no external energy. This helps in providing protective and added irrigation to approximately 2.8 ha of land benefitting 4 farmers.

2. Comprehensive Community Development Programme (CCDP) - Utthan



| March | Marc



The sex-sorted semen technology contributes to reduction in GHG emissions through optimal herd sizing. As herd size is reduced, dung production and rumination decreases, resulting in lower methane gas emissions.

In the dairy sector, preference is always given to a female calf and thus the use of X chromosome bearing sperm semen will be useful to produce maximum number of females.



High capacity solar pumps (5 hp) with conveyance are installed for a group of farmers (8 to 10) for *Wadi* and other agricultural lands. Individual solar pumping of approximately 1 hp capacity is also promoted with several farmers resulting in a total green energy generation of approximately 36,000 kWh. Solar insect traps have been introduced for effective pest control with reduced use of chemicals.

B. Agro-Biodiversity Conservation

1. Comprehensive Community Development Programme (CCDP) - Utthan

Key achievements: Indigenous land race recognition has been taken up in all the clusters of the CCDP *Utthan* project. Paddy and other crop species which are traditionally grown over generations have been collected and recognised. Ten different varieties of paddy and six different varieties of vegetable crops are identified so far. The plan is to multiply the use and officially recognise these varieties as indigenous varieties for wider and organised scale up.





C. Renewable Energy

1. Comprehensive Community Development Programme (CCDP) - Utthan and Jal Samruddhi



Renewable energy is one of the most efficient forms of climate change mitigation. Solar power has its benefits and immediate application in the rural context for energy applications in lifting. Solar lift irrigation is demonstrated in fields in western parts of Odisha on both family and group levels.

High capacity solar pumps (5 hp) with conveyance are installed for a group of farmers (8 to 10) for *Wadi* and other agricultural lands. Individual solar pumping of approximately 1 hp capacity is also promoted with several farmers.

A total green energy generation of approximately 45,000 kWh annually is estimated with all installations combined.

Looking at the significance and the impact of the activity along with its benefits, incorporation of renewable energy applications in other projects has also started growing.

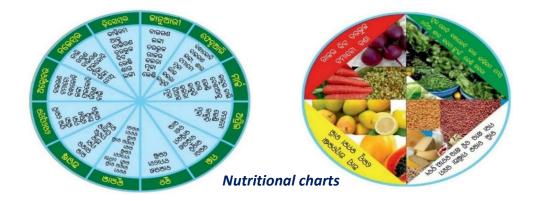
3. CROSS CUTTING PROGRAMMES

A. Health and Nutrition

1. Comprehensive Community Development Programme (CCDP) - Utthan and Jal Samruddhi

The emphasis under this theme is to synergise efforts to improve overall living standard in each of the villages through inputs in health, hygiene, nutrition, education, literacy, knowledge and awareness. Quality of life activities complement the livelihood generation initiatives and multiply the impact through progression to overall development and well-being.

"You make a living by what you get, but you make a life by what you give." - Anonymous



Key achievements: To solve drinking water quality and access issues, hand pumps are being repaired with provision of platform and soak pit. Clean drinking water was supplied benefitting 80 households.



Kitchen garden establishment is pursued with the objective of strengthening nutrition intake at the household level. Nutrition charts are shared with the households for easy reference and understanding. During the year, 300 households were covered through this activity.

B. Women-centric Development

1. Comprehensive Community Development Programme (CCDP) - Utthan

To address the issue of ignorance of menstrual health and hygiene among women, extensive awareness sessions are conducted. Establishment of a women - SHG operated sanitary pad making unit at Sambalpur cluster is a step forward in ensuring self-reliance, easy accessibility and livelihood.

While health camps were conducted, a model of community level health resource persons were deployed for providing basic diagnostic services. 456 households have been provided with preventive health care. Some key figures are listed below.











CASE OF WOMEN MANAGED SANITARY PAD UNIT: INTEGRATING QUALITY OF LIFE WITH LIVELIHOODS

While promoting menstrual hygiene has been a focus area, it was also felt important to build sustainability and self-reliance to the initiative for tangible impact. An approach of buying and distributing sanitary pad would have had only short-term benefits. This gave way to the scouting of feasible options. With the coming forward of a women's group in Sambalpur, it has been possible to establish a sanitary pad unit at Birsinggad village in Sambalpur cluster of CCDP —



Utthan. The unit has been received courtesy BASF – Nunhems India Pvt. Ltd. The unit has a capacity of manufacturing 250 pads/napkins and is managed by 7 women from 2 SHGs. The group members have learnt the complete process of operations through a series of training sessions by overcoming the challenges of the pandemic restrictions. The unit was formally inaugurated on 26 January 2021 by Shri. S.L. Touriya, General Manager – Civil, Mahanadi Coalfields Ltd. in the presence of Shri. Arabinda Sahoo, Asst. Manager – CSR, Mahanadi Coalfields Ltd., BAIF team and the community. The unit by integrating quality of life with livelihoods, is an inspiring example of aligning with the missions of "Vocal for Local" and "Atmanirbhar Bharat".

C. Capacity Building

Capacity building exercises focus on information dissemination, knowledge sharing-learning and empower the community to be self-reliant. Various activities like training, exposures, demonstrations, documentation, and camps. are undertaken in this context. It also helps in keeping the team apprised of emerging development. The summary is given below.





Team Capacity Building

| Theme | Sessions (No.) | Participants (No.) |
|--|----------------|--------------------|
| Agriculture | 2 | 20 |
| Communication | 1 | 22 |
| Finance | 2 | 8 |
| HR | 6 | 51 |
| Information and Communication Technology | 2 | 50 |
| Livestock | 5 | 28 |
| Natural Resources Management | 2 | 20 |
| Quality of life | 1 | 16 |
| Documentation | 2 | 20 |
| Programme Management | 5 | 23 |

BAIF conducted training sessions in goat AI for 60 Veterinary Officers of the Department of F&ARD, Government of Odisha during the period 4 - 11 October 2021. This initial batch is expected to be master trainers for subsequent capacity building of the State team. Two expert resource persons from BAIF conducted the training sessions covering theory and practical in Sambalpur, Cuttack and Ganjam.



D. Educational Initiatives

1. CCDP, Jal Samruddhi, ILDP, FRDP, HCDP

i. Learning Management System (LMS)

The Leaning Management System of BAIF provides short and long duration courses in areas such as agriculture, livestock, natural resource management, community based development, enterprise development for capacity building of farmers along with webinars. 236 farmers could learn through this platform and develop their skills for livelihoods enhancement.

The courses offered cover multiple domains and hence are applicable for usage and benefit across multiple projects.

ii.Smart class





Featured Courses(04)



Digital e-learning class room was established to help the students to understand the concept better and bring them closer to technology - based learning. Interactive learning experience through audio visual multimedia platforms supported on an e-learning setup which essentially combines an interactive responsive screen and a computer system is installed along with power backup. The activity is carried out under *Jal Samruddhi* project and is widely appreciated by local and institutional partners. Classrooms have been coloured with educational informative paintings for enhancing learning ambience.

E.ICT for Development

1. CCDP, Jal Samruddhi, ILDP, FRDP, HCDP

i.Digitalisation

The complete record of Artificial Inseminations conducted in the field is entered in a mobile application-based database management system specifically developed for the purpose. It has been found to be a very useful application for recording Artificial Inseminations, pregnancy diagnosis, calvings, and monitoring.



ii.Geo Tagging

It is a simple authentic document to collect data from the field and to preserve it for future reference. In the field, a photograph of the asset along with geo-location which includes latitude and longitude, is being collected. This practice helps in maintaining updated record, monitoring and verification as and when required. It also helps in avoiding data duplication.

4. RESEARCH FOR DEVELOPMENT

A research was undertaken to compare energy consumption of solar with fuel/ electricity and cost saving analysis due to solar intervention. It was found that there was cost saving for 24 farmers of ₹18,790 for electricity and ₹1,33,518 for diesel use over a period of 77 days with 2 solar pumps. 6,000 litres of water could be transported for domestic use. It also resulted in decrease in the time consumed because of manual pumping and carrying water from the source to the households. There was enhancement of income, cropping irrigation, increased water consumption by the family, drudgery reduction due to availability and accessibility of water.





A study was conducted to determine the profitability of tomato and bitter gourd cultivation under tree based farming system. The study indicated that bitter gourd under trellis gives good returns over tomato as indicated in the table below.

| Sr. No. | Crop | Average fruit yield (q/acre) | Gross Income (₹/acre) | Cost of Cultivation(₹/acre) | Net Income (₹/acre) |
|------------|--------------|------------------------------|-----------------------------|--------------------------------|---------------------------|
| 1 | Tomato | 68.2 | 1,02,520/- | 40,100/- | 62,420/- |
| 2 | Bitter gourd | 54.4 | 1,50,340/- | 65,140/- | 85,200/- |

| Sr. No. | Name of the variety | No. of Grafts | Survival (%) | At plantin | ng | After 6 m planting | onths of |
|------------|---------------------------|------------------|-----------------|---------------------------|---------------------------------------|---------------------------|---------------------------------------|
| | | | | Average height (cm) | Average no. of branches (cm) | Average height (cm) | Average no. of branches (cm) |
| 1 | Siddu and Sankara | 34 | 85 | 32.86 | 1.60 | 51.76 | 5.39 |
| 2 | Thai All Time | 60 | 95 | 90.74 | 1.84 | 106.1 | 5.26 |



A study was conducted to assess the growth and yield performance of different Jackfruit varieties in 4 districts namely Sambalpur, Jharsuguda, Angul and Sundargarh. The table above shows some of the interim observations.

A study was conducted to understand the current status regarding bathing spaces for women, in terms of availability, type, access, safety, quality, problems faced, behaviour, health and socio-economic aspect. The results are as follows: 54% women and adolescent girls developed the habit of using toilet and temporary bathroom behind their homes, 33% women & adolescent girl, were relieved from communicable disease, 52% women & adolescent girl used pad disposal in a pit. Additional observations included, that a majority of the girls had the habit of using toilets, including Class 10 dropouts. Although taking bath in ponds was a way to spend time with friends, young girls were shy about bathing in open places. They even faced eve teasing. Unlike urban areas, there was lack of community toilets. There is need of literacy and awareness to encourage people to inculcate healthier habits.



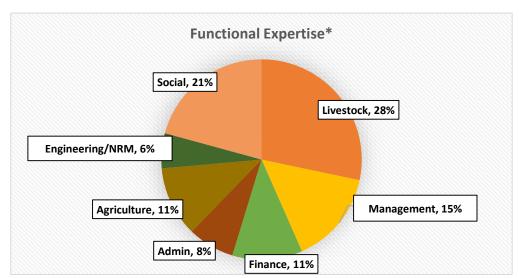
| Observations | (In percentage) |
|--|-----------------|
| Women and adolescent girls developed the habit of using toilet and temporary bathroom behind their homes | 54% |
| Women and adolescent girls were relieved from communicable diseases | 33% |
| Women and adolescent girls used the pad disposal facility pit | 52% |

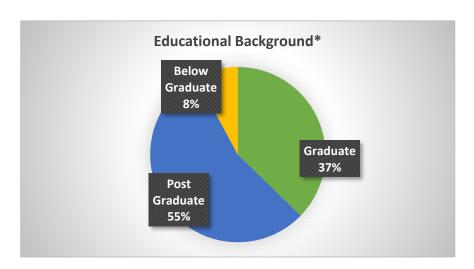
5. COVID-19 PANDEMIC RESPONSE AND RECOVERY

With India currently fighting back COVID 19 and attempting to create a disease - resilient and disease free society, what is needed in rural areas is following of appropriate protocols and ensuring vaccination. Efforts have also been made to enhance access to resilient livelihood avenues. As a result, project design and implementation have factored these into account. This year, BAIF staff assisted with vaccination registration and slot booking for approximately 2,000 people. Community resource persons have also assisted in facilitating people's participation in Government-organised vaccination campaigns and raising awareness about vaccination.

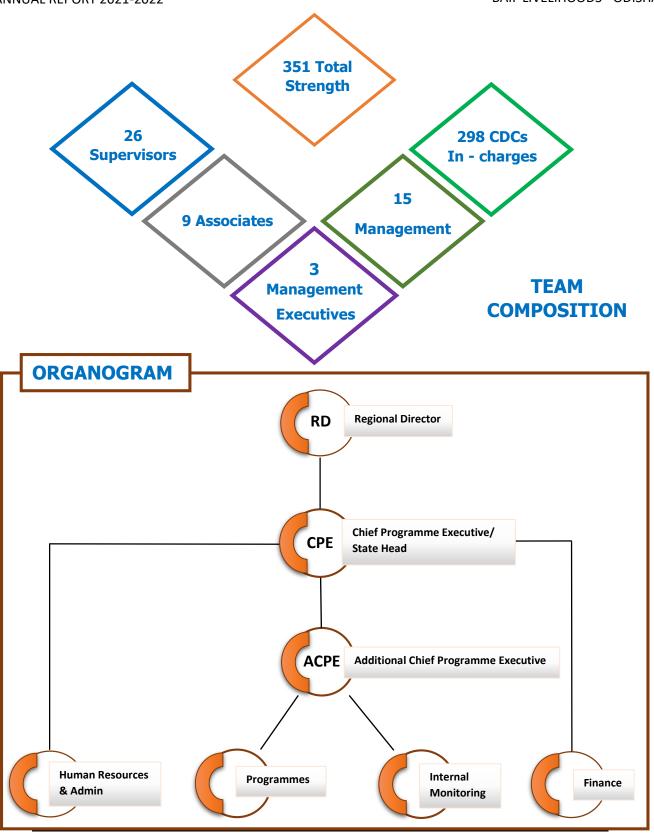


6. HUMAN RESOURCES





^{*}Excludes Cattle Development Centre (CDC I/Cs)



7. PARTNERSHIPS



April 2021: State Level Review Committee (SLRC) meeting of ILDP held remotely over video conferencing under the chairmanship of Agriculture Production Commissioner - cum - Addl. Chief Secretary, Govt. of Odisha.

August 2021: Meeting with Shri.. Jayanta Mohanty Regional Head East, Adani Foundation and handing over of the Annual Report.





October 2021: BAIF Odisha participated in a meeting convened by Addl. Secretary and Member Secretary, Smt. Roopa Roshan Sahoo, IAS, Poverty and Human Development Monitoring Agency (PHDMA), Planning and Convergence Department, Govt. of Odisha, to discuss replicable models and convergence.

October 2021: Meeting with Shri. Chandra Shekhar Gowda, COO, Adani Foundation in Bhubaneswar.





November 2021: Regional Director-East and Chief Programme Executive attended meeting chaired by Director AH & VS, Govt. of Odisha on breeding bull production through assisted reproduction techniques and genomic evaluation.

December 2021: Signing of MoU with OLRDS for Al Programme in convergence with NAIP.





March 2022: CPE Odisha attended meeting with Shri.. R. Raghu Prasad, IFS, Principal Secretary, F&ARD Dept., Govt. of Odisha on MAITRI training and implementation.

SPONSORS

Odisha Livestock Resources Development Society Department of Fisheries and Animal Resources Development, Govt. of Odisha

Mahanadi Coalfields Ltd.

Adani Foundation

Bill & Melinda

GatesFoundation

Mahindra & Mahindra Ltd.

JSW Foundation

JSW Cement Ltd.

HDFC Bank

Charity for Goodness Foundation

COVERAGE

Angul, Balangir, Bargarh, Boudh, Cuttack, Jagatsinghpur, Jajpur, Kalahandi, Kendrapara,Koraput, Nabrangpur, Nuapada, Puri, Sambalpur, Subarnapur

> Angul, Jharsuguda, Sambalpur,Sundergarh

> > Bhadrak

Angul, Balangir, Bargarh,
Sambalpur,Sonepur

Balangir

Keonjhar, Sundargarh

Jajpur

Sambalpur

Gajapati

PROGRAMME

Livestock Development: Breeding

Holistic Development

Livestock Development: Integrated services

Livestock Development: Characterization and performance recording

Water-centric Livelihoods

Water-centric Livelihoods

Rural non-farm Sector-based livelihoods

Agri-horti-forestry (wadi)

Needs Assessment

A. INSTITUTIONAL LINKAGES

BAIF has been partnering with SBI Foundation in their flagship Youth For India (YFI) fellowship programme. The State branch has been hosting YFI Fellows over the last two years for their fellowship journey of 13 months. The Fellows have been instrumental in bringing new ideas and approaches into field implementation for enhanced impact and sustainability. Interns are also being hosted from institutes like DMI Patna, XIM University, Centurion University and KIIT School of Rural Management. These internships offer the students a direct exposure to development programmes and the students also contribute to the programme with their creativity, innovation, analysis etc.

Shri. Ankit Mishra, a SBI YFI Fellow posted at BAIF for 2021-22 Cohort, initiated commendable work to fetch higher returns for the community through value addition of NTFP.





BAIF Programme Coverage



APPEAL

BAIF has been committed to sustainable rural development for over five decades of its operations. BAIF's valuable contributions to improving livelihoods of rural households have been recognised in various national and international platforms. Our innovative models and participatory community empowerment approaches have shown pathways to holistic development which have been adopted outside the Organisation as well as for replication. The hallmark of these models is integration of livelihood and quality of life resulting in enhanced living standards.

BAIF is recognised by the Ministry of Finance, Government of India u/s 35 (1) (ii) of the Income Tax Act 1961 for Scientific Research. Contributions made to BAIF for carrying out research activities will be eligible for deduction under income tax. BAIF Livelihoods is a Charitable Institution under the provisions of Section 12A (2) of the Income Tax Act, 1961. Donations made to BAIF Livelihoods will be eligible for benefit of deduction under Section 80G of the Income Tax Act, 1961.

We appeal to the donors to contribute to the maximum extent possible for the noble cause of empowering rural communities and in the process, building a self-reliant, progressive and prosperous India.

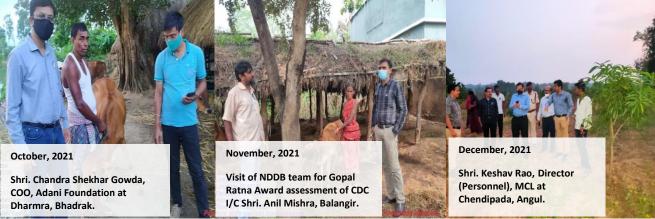
Visitors to field programmes



ACKNOWLEDGEMENTS

The dedication and perseverance of team members – our core strength have been the cornerstone of BAIF's impactful programmes. The generous support from our esteemed partners and sponsors is gratefully acknowledged which has enabled us to enhance our outreach and impact. The valuable guidance from senior management provides deep insights into both strategic and operational aspects of the programme. Last but not the least, the cooperation and trust from the communities we work with is gratefully acknowledged without which the programmes would have just remained as activities.

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Back cover photographs: Shri. Saudagar Kumura and Smt. Subagini Kumura of Deogaon, Balangir with farm produce (top); Smt. Sanjukta Karan of Puintala, Balangir with project born improved progenies (middle-right); Smt. Kardula Kerketta of Sundargarh with farm produce (middle-left); Promotion of trellis farming (bottom).

