



ANNUAL REPORT 2020-2021

Theme of the Year

Supporting Rural Livelihoods
during the Pandemic



NATIONAL AGRO FOUNDATION

www.nationalagro.org

ANNUAL REPORT
2020-2021

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Greetings!!! From National Agro Foundation

Message from Managing Trustee



I am happy to present the Foundation's Annual Report for the year 2020 – 2021. Even during this crisis period, National Agro Foundation has braved these trying times and reached out to the rural communities despite numerous challenges posed by the pandemic. As the world and India grapple with the distress caused by the COVID 19 pandemic, National Agro Foundation stands strong with the communities across all its operational areas in 8 states of the country.

Most of the world's poor and vulnerable live in rural areas. Although physical distance, relative isolation, lower population density and their own production of food play in favor for rural areas, they are particularly vulnerable to severe impact from the pandemic and the ensuing economic contraction.

The Pandemic has proved to be more than just a health crisis but has permeated and disrupted every fiber of life, having long lasting or even permanent impact on life and livelihoods especially of the rural communities in India. While the well-off have more staying power, there are grave concerns about how the poor and those with meager livelihoods even in normal times can cope and survive the pandemic. The challenges are all the more severe in isolated rural communities with a host of varying development disadvantages.

The impending economic crisis has further reduced employment opportunities in towns and cities for migrant labourers which was previously a major source of income for rural families. National Agro Foundation has swiftly responded to the pandemic, ensuring that humanitarian aid and recovery assistance reaches those most in need through several initiatives supported by various corporates and government agencies. The organization stands in solidarity with the scores of front line workers and humanitarian workers to fight this pandemic. NAF has been able to prioritize and support rural livelihoods during the pandemic, by restoring livelihoods, providing market opportunities for farmers, financial support for women to begin new micro enterprises within the villages, providing critical backward and forward linkages for the farming community to sell their produce thereby providing hope to hundreds of families who are in dire need of income. Strengthening farmer producer organizations and facilitating various bank loans and government subsidies have given a ray of hope to more than 1 lakh farmers who are members of these FPOs supported and nurtured by National Agro Foundation.

My sincere thanks to the Board of Trustees and the Governing Council of NAF for their unconditional support, cooperation and guidance for the past 21 years. But for their support, NAF would not have spread its wings across major states of India.

I would like to place on record my appreciation to the entire team at NAF who have contributed to the growth of the organization through their dedicated service and commitment. My heartfelt gratitude to all the donors, supporters, well wishers, various institutions, corporate companies and the Government who have contributed immensely to improving and supporting lives and livelihoods of the needy during the pandemic and reposing faith in us to march forward through their continued support.

This Annual Report brings to you various interventions undertaken by NAF to support vulnerable communities during the pandemic. We will strive to stand true to our Founder Mr. C Subramaniam's vision through these challenging times ahead and let our efforts continue to create positive impact in the lives of the rural communities.

Stay Safe & Happy Reading!!!

S.S.Rajsekar

National Agro Foundation (NAF) was set up as a Public Charitable Trust in 2000 by Mr. C Subramaniam, (Architect of India's Green Revolution and Bharat Ratna Awardee) to usher in rural revolution with special focus on agriculture and small and marginal farmers as well as to bring about inclusive growth. Having been the architect of India's Green Revolution with a "Seed to Grain" approach, Mr. Subramaniam envisioned NAF for economic and social development of farmers with a "Soil to Market" approach on a sustainable basis. Dr A P J Abdul Kalam, Former President of India succeeded Mr.Subramaniam and guided NAF as the Chairman of its Governing Council till he became the President of India.

From its humble beginning based on small practical approaches to sustainable development, NAF has grown to a fully fledged professional organization providing cutting edge services creating large scale impact in the rural areas and changing lives of scores of farmers in the country. Joining hands with the Government, corporate houses and other stakeholders to implement its core programs, NAF has been successfully addressing local and global challenges of agriculture and rural development through multi pronged approaches and targeted interventions.

Vision & Mission

Vision:

To create a "Healthy, Literate and Prosperous Rural India"

Mission:

"Creating replicable models of prosperous rural clusters through ecologically safe, environmentally sustainable farm and non-farm sector activities, natural resource management, rural enterprises and human resource development by networking various stakeholders through mutually beneficial partnerships."

“Achieving better balance between interdependent and mutually reinforcing pillars of sustainable development – “Education”, “Economy”, “Environment” & “Empowerment”

The 4E approach to Sustainable Development



NAF Working Divisions

Sustainable development is about recognizing, understanding and acting on interconnections – between the thematic areas of education, economy; environment and empowerment. In pursuit to achieve significant and verifiable outcomes across these cross-cutting thematic areas and to streamline the broad-spectrum interventions NAF has divided the organization into multiple divisions comprising:



Agricultural Development Division

Farm Mechanization, Sustainable Climate Smart Agriculture, Knowledge and Technology Partner, Implementation of Projects, Action Research etc.

Agri Business Development Division

Formation & Development FPOs, Agri-business trainings, Digitization of FPO Business Operations, FPO Credit & Market Linkages, Rural Entrepreneurship etc.



Watershed Development Division

Natural Resource Management, Watershed Development, Soil and Water Conservation, Climate Change adaptation and mitigation, Promotion of Agro Forestry, Rehabilitation of areas affected by flood disaster, etc.



Training & Capacity Building Division

Training and Capacity building for adoption of Sustainable Agriculture practices, Organic farming, Lean Farming, Climate Smart Agriculture, Agri Clinic and Agri Business training, Agricultural Technology training, Micro Enterprise Development, Awareness programmes, etc.

Social Development Division

Community Mobilization, Financial Inclusion, Livelihoods, Entrepreneurship, Promoting formation and Supporting Self-help Groups, etc





Laboratory Services Division

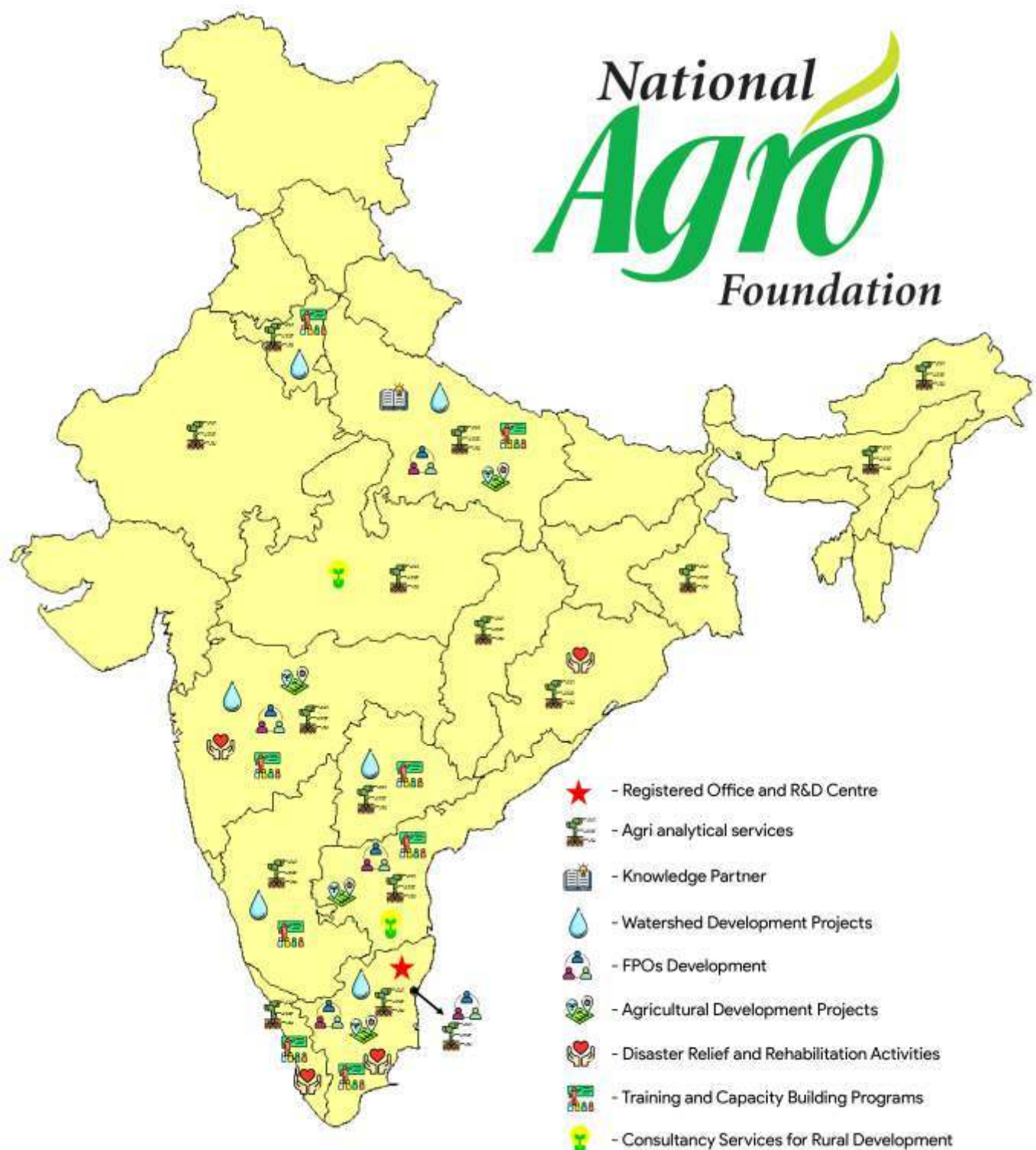
Technology and analytical services for food and agriculture development covering soil, food quality & safety analysis, consultancy services, training and academic programs, etc.

Research & Development Division

Undertaking applied R&D in the field of food, agriculture and environment. Facilitating research scholars under various academic programs etc.



3,50,000+ rural families from over 2100 + villages
across 8 states have benefitted from NAF's interventions



NAF's 4 Pillars of Sustainable Development

Economy

SDG 1,8

No Poverty, decent work and Economic Growth

- Increasing the income of farmers through sustainable agriculture and agribusiness for small and marginal farm holders including women.
- Agricultural productivity improvement through "Lean Farming" addressing "Seed – Grain" and "Soil – Market" value chain.
- Frontline Demonstrations, Promoting Agribusiness and agri allied sector enterprises etc.

Environment

SDG 6, 12, 13

Clean water and Sanitation
Responsible consumption and production. Climate Action

- Strengthening and conserving the natural resources of rural ecosystem through Watershed and NRM (reclaiming ecosystems).
- Watershed development, Afforestation, lean farming, agro and bio-diversity conservation, WASH initiatives etc.

Education

SDG 5, 8

Gender equality, decent work and economic growth

- Strengthening the human asset in the agriculture and rural sector through need based and demand driven training and capacity development programs.
- Training and building capacities of farmers, women farmers, students, civil societies, government agencies and other stakeholders, entrepreneurship development programs, etc.,

Empowerment

SDG 5, 17

Gender equality, Partnership for the

- Creating dynamic, vibrant and sustainable rural communities who work in the spirit of cooperation, equity, equality and collective ownership.
- Promoting and nurturing various community-based institutions like Farmers Producer Companies, SHG Federations, Farmers Cooperatives, Water User Groups for collective decision making and action for institutional sustainability.



Awards

- National Agro Foundation had received Appreciation Award as a Project Facilitating Agency for Kuppachiparai and Kotteri watershed projects by National Bank for Agriculture and Rural Development (NABARD) in 2020



Recognition

- Nodal training institute for ACABC training programs (Recognized by MANAGE)
- Technical partner with Tamilnadu Corporation for Development of Women Limited, an organization of Ministry of Rural Development, for Mahila Kisan Shashakthikaran Pariyojana (MKSP).
- Recognition of NAF as Scientific and Industrial Research Organization (SIRO), by the Department of Scientific and Industrial Research under the scheme on Scientific and Industrial Research Organizations (SIROs), 1988.



Empanelment & Certifications

- CSR Empanelment certification and accreditation under the TISS Assessment and Empanelment Standards for Development Institutions in India (TISS AESDII), 2021.
- Certificate of Empanelment as Training Partner to impart Training under Food Safety Certification and Training (FoSTaC) programme of FSSAI.
- Empanelled resource institute/POPI for Central Small Farmers Agri- Consortium (SFAC) and NABARD respectively for promoting and nurturing FPOs.
- Empanelled Field Partner of Bank of New York Mellon and its subsidiaries for their Community Partnership Initiatives.
- Empanelled as CBBO under central Sector Scheme for promotion of FPOs in 3 New states of AP, UP and MH.



Accreditation

- NAF Laboratory Services Division has been granted accreditation for soil, food, water and organic fertilizer testing; as per ISO/IEC 17025:2017 International standard by National Accreditation Board for Testing and Calibration Laboratories (NABL), Quality Council of India.

Environment

Agriculture & Allied Services

- Direct agri-technology transfer to **5000** acres of smallholder farms.
- Productivity levels of various crops improved by **30** to **66%** and substantial increase in family income; cropping area under technology based agriculture increased multifold.
- Cropping intensity increased and change in cropping pattern has been witnessed in all watershed areas with new and improved technologies.

Water Resource Management

- Watershed development program covering over **72** villages, benefitting **32400** families.
- Total surface area treated is **45000** + ha.
- Increase in water table upto **270** ft in borewell and **9** ft in open wells.
- **3010** lakh litres of water was harvested, through water conservation and harvesting structures across various projects in the villages.
- **400** + toilets have been built under total sanitation program addressing health and sanitation requirements of the community.

Economy

Agri Business and Livelihood Promotion

- **102** FPOs have been promoted by NAF with a share capital to the tune of **8.5** crores in Tamilnadu.
- FPO business activities promoted and supported by NAF, have been successfully established through various market linkages with an annual turnover of INR **10** crores.
- **211** women were facilitated with loan for Income Generating Programs to establish micro enterprises in the villages to the tune of INR **76.25** Lakh.
- Total of INR **15** lakh worth of Milk was collected through Milk Aggregation Portal of Milk Producers Group in Uthiramerur Block and an amount of INR **5.2** crores has been digitally transacted through NAFs KANCHI digital portal during FY 2020-21.
- Agriculture inputs worth INR **1.48** crores sold by our FPOs in Tamil Nadu and transactions digitally captured in ICD Portal of KANCHI during FY 2020-21.

Education & Empowerment

Training & Capacity Building

- **145+** training programs were conducted to benefit **5500+** farmers on various agricultural and agri-business development activities.
- Village Institution Development.
- **44** Village Watershed Committees formed and developed.
- Encouraging women participation in development activities through **927** SHGs with **12,309** members.
- **458** Producer groups created, trained and linked with Farmer Producer Organizations.

COVID 19 Relief

- As emergency COVID 19 response, NAF with support from its corporate partners was able to reach out to over **3890** families and over **76500** individuals by providing relief in the form of dry ration kits & essential items, food through community kitchens across all its operational areas in India.
- Facilitating Sustained Supply Chain Management during COVID 19, benefitting **347** farmers and **5264** rural customers with support from government of Tamilnadu.



Highlights of COVID-19 Relief Initiatives to communities across India

National Agro Foundation, with support from its CSR Partners has been able to reach out to scores of people across 8 states during the pandemic in delivering not just essential items and groceries, but also much needed medical equipment and sanitation supplies to frontline workers from the healthcare, police departments and members of the press. It has been a humbling experience to facilitate relief and aid to the most needy, especially during a crisis period, but the organization worked on war footing to take these essential services to the communities in the most critical phases of the Covid 19 pandemic.

The organization wishes to place on record special appreciation and gratitude to its partners and staff who came forward to implement these various measures and put the interest of the needy communities and the front line workers before their own. NAF continues to stand in solidarity with all those warriors who are fighting to curtail the spread of this deadly virus and is playing its own role in doing the same across all its project locations in India.

COVID 19 Relief Initiatives Supported by BNY Mellon

The Bank of New York Mellon (BNYM), in partnership with National Agro Foundation, has acted on humanitarian grounds to respond to the crying needs of its stakeholders during the COVID 19 pandemic in India. Through their multiple forums, they were actively supporting various relief measures carried out with the support of NAF across the country.



COVID 19 Rapid Response and Relief Initiatives

COVID 19 Relief Initiatives Supported by BNY Mellon

Covid Relief Activity	Beneficiary group	Items Distributed
Donation of Personal Protective Equipments (PPEs)	Chennai City Police	Face Masks, hand sanitizers, floor cleaners, hand gloves
Distribution of basic provisions	1100 families	Grocery items like rice, dal, cooking oil, salt, spices, soap and toiletries
Distribution of Medical Equipment	The Commissioner, Greater Chennai Corporation for frontline workers, Sanitation Workers	5000 3 - ply face masks, 4000 hand gloves, 200 hand sanitizers and 500 PPE kits
Distribution of Dry Ration Kits - Chennai, Pune	stranded families of poor and migrant labourers, migrant labourers, Transgender Persons	2880 dry ration kits
Donation of PPE to Hospital	Frontline workers of Government Stanley Hospital, Chennai	15000 masks, 3500 gloves, 1200 PPE kits, 2000 N95 masks
Distribution of PPEs	Public and 100 poor families	100 PPE kits each containing a face-mask, a pair of hand-gloves and a sanitizer bottle was distributed to the public. Essential provisions to 100 poor families
Donation of PPEs and Sanitizers	Front line workers of Madurai City Police	8000 face-masks, 4000 pairs of hand-gloves and 210 sanitizers
Donation of Home-made Face-masks	Frontline Health Workers and Police in Chunampet block	2000 home -made cloth masks
Donation of Medicine and Basic Provisions	SOFOSH (Society of Friends of the Sasoon Hospitals) child-care centre	Medicines and essential provisions

COVID 19 Rapid Response and Relief Initiatives

Donation of Basic Provisions – through Hadapsar Police, Pune	Stranded Labourers	300 basic provisions kit
Donation of PPEs	Sanitation Workers in Perumbakkam Panchayat	500 face-masks and 500 pairs of hand-gloves
Donation of PPE Kits	Royapettah General Hospital	100 PPE kits to support the medical professionals treating the COVID-19 infected patients.
Community Kitchens – Madharpakkam, Royapuram and Villupuram	local communities, stranded and migrant labourers	served 4000 meals, 3 times a day for 15 days
Donation of PPE Kits	Frontline workers at Mangadu police Station, frontline media workers at Deccan Chronicle	PPE kits, N95 masks, Gloves, Goggles etc.

Covid 19 Relief Activities Supported by Bay Area Tamil Mandram (BATM) San Francisco

The Bay Area Tamil Mandram provided INR2.35 lakh to support the frontline workers of the Madurai police department, by providing 430 PPE kits, which were handed over to the Superintendent of Police, Madurai.

COVID-19: Farmers Livelihood Project Supported by Bay Area Tamil Mandram (BATM)

The impact of COVID 19 was felt all around the globe, with far reaching negative consequences to the small and marginal farmers, who lost their only source of income and livelihood during the crisis period. Reeling in heavy losses and unable to cater to their basic requirements, the farmers were in a desperate situation.

Twenty one farmers from three villages were severely impacted as they were not able to transport the harvested vegetables due to covid related lockdown in April – May 2020 thereby incurring heavy losses in farming. NAF selected such severely affected farmers from Marakkanam block and provided high quality seeds with high yielding potential and market preference for the ensuing season. Nutrients and IPM kits were also provided to the farmers free of cost. Due to continuous monitoring of NAF and regular field advise to the farmers, they were able to earn INR 1,19,920/- as profit and an yield of 19 tonnes of vegetables, during the crisis.

COVID-19: Farmers Livelihood Project Supported by KLA

This project is being implemented in Olakkur block for the farmers who are victims of COVID-19 related lockdown in 2020. Twenty farmers from six villages were selected and provided with quality seeds of brinjal, bhendi, chilli, bottle gourd, ridge gourd and snake gourd. The farmers have sown these seeds in 9.65 acres of land and fertilizers were distributed to them. NAF Experts have been visiting the fields and providing need based advisories and support in a timely manner despite the pandemic.

COVID 19 Rapid Response and Relief Initiatives



Covid 19 Relief Activities Supported by NABARD, TN-SFAC, TN-Collective Farming, TNIAMP FPOs in various Districts in Tamilnadu

National Agro Foundation promoted FPOs under various state machinery came together to support the farmers and the rural community during the pandemic by harnessing all resources and making essential items available to various communities across Tamilnadu.

Farmers in Tamilnadu were the worst hit due to COVID-19 crisis. They were forced to abandon their produce due to lack of transport facilities during the severe lockdown imposed in the state making it impossible to reach the consumers. Supply chains across the state witnessed a total collapse in distribution channels and forced farmers to desperate measures. While farmers had available produce that they could not sell because of the lockdown, on the other hand, consumers could not buy vegetables, and they were either facing scarcity or forced to pay a high price for farm goods.

To overcome the unprecedented situation, a joint initiative of Tamil Nadu Agri business and Agricultural Marketing and National Agro Foundation through its Farmers Producer Organizations' (FPOs) linked the producers and consumers by aggregating the produce of member farmers, and collectively transporting them for sale in nearby towns and urban establishments. 27 FPCs promoted by NAF from 12 districts came forward voluntarily to operate and supply vegetables, fruits and other essential commodities during the COVID-19 crisis by procuring and marketing 1689 tonnes of farmers' produce worth INR 88 Lakh, and were able to provide their shareholders with a much needed income.

NAF facilitated the setup of a supply chain system to connect the producer farmers and the consumers during the strict COVID-19 lockdown through multiple channels. The direct sales and marketing to the consumers helped the farmers to realize better value for their produce. The customers also benefitted through quality products at nominal price amidst the lockdown.



Watershed Development Division

Watershed management interventions such as soil and water conservation (SWC) and water harvesting are crucial to improving the natural assets of an area. As a result, there will be an increase in overall biomass, productivity, cropping frequency, irrigation sources, livestock, livelihoods opportunity etc., all which are crucial to building a sustainable ecosystem in rural India.

NAF has been in the forefront on watershed projects as a part of its Natural Resource Conservation program which is an important component in its comprehensive rural development initiatives. The watershed Program is strategized on a comprehensive integrated Community Development approach integrating areas such as soil and land management, water management, afforestation, pasture land development, agriculture development, livestock management, livelihood support and enhancement, community empowerment to target effective holistic development of rural communities on a sustainable basis.

Watershed management is a holistic concept, which tries to achieve the best possible balance in the ecosystem between natural resources on the one side, and human and other living beings on the other. NAF applies a multidisciplinary & multi-sectoral approach, using scientific knowledge from different fields and a combination of technologies, strategies, and techniques to create maximum possible benefit to the stakeholders.

Watershed projects of NAF are being implemented with the support of various donors and supporters on the following modes:

- 100% funding support by corporate agencies
- Grant assistance from NABARD and Corporate agencies on the basis of 50:50 fund sharing.

CSR Supported Watershed Projects at a glance

Watershed Development Division

Sr. No	Name of the Project	District	No. of villages covered	Total Area (Ha)	No. of Households Benefitted	Funding Partner
1	Integrated Watershed Development Program - Edaiyur	Chengalpattu	4	1526	1630	Tata Capital Housing Finance Private Limited (TCHFL)
2	Water Conservation for Sustainable Livelihood - Vandavasi	Thiruvanamalai & Kancheepuram	9	2305	1556	Tata Capital Housing Finance Private Limited (TCHFL)
3	Integrated Community Development Project- Chettipalayam	Coimbatore	4	2028.31	1520	Larson & Toubro Limited (L&T)
4	Integrated Community Development Project - Pappampatti	Coimbatore	4	1585	3860	Larson & Toubro Limited (L&T)
5	Comprehensive Village Development Program - Watershed Plus	Pune	1	319	542	Larsen & Toubro Technology Services Limited (LTTS)
6	Integrated watershed Management Program/ Implement Watershed Natural Resource Management Project	Chengalpattu	4	1578	1327	Larsen & Toubro Technology Services Limited (LTTS)
7	Water Bodies Rejuvenation Project	Kasna	2	33	871	Asian Paints Limited (APL)
8	Water Bodies Rejuvenation Project	Rohtak	2	17	1124	Asian Paints Limited (APL)
9	Water Bodies Rejuvenation Project	Mysore	8	587	1215	Asian Paints Limited (APL)
10	Disaster Relief Project	Sablewadi, Maharashtra	1	-	25	The Bank of New York Mellon (BNYM)
11	Holistic Rural Development Project	Virudhunagar	20	20425	5054	HDFC Bank Ltd
12	Vallakottai - Water body rejuvenation	Kancheepuram / Tamilnadu	3	50	1150	Renault Nissan Automobile India Pvt. Ltd. (RNAIPL)
13	Community Development Project	Solakpalle	6	-	981	NOVARTIS

Integrated Watershed Development Programme supported by Tata Capital Housing Finance Limited in Edaiyur, Tamilnadu

This project has been implemented in Thirukazhukunram block of Kancheepuram district (now Chengalpattu District) since 2017. Prior to the joint intervention of Tata Capital and NAF, Edaiyur suffered from severe water scarcity during the extreme summer months and both animals and people suffered from various diseases due to lack of access to safe drinking water. Due to concerted efforts from the team and cooperation of the village community, Edaiyur, today, shows all round improvement in visible increase in surface and ground water, change in cropping pattern of the farmers, who now opt for multiple crop cycles due to increased availability of water, thereby increasing yields through adaptation of modern agricultural practices and best techniques, also impacting the level of income of the entire community. Construction of various water harvesting structures in the village has led to the overall conservation and proper storage of water, making this vital resource available to the farming community and thereby impacting the lives of the community living the project area.



Major Interventions: Area Line Treatments such as field bund, water bodies rejuvenation, agro forestry, agro horticulture plantation, drainage line treatments such as channel renovation, construction of check dams, Training and demonstrations for promotion of best agri practices, FLDs etc.

Project Outreach:

- The Project is implemented across 4 villages benefitting 1630 households 5500 members.
- 4SHGs with 80 members were trained and benefitted from Income generating Program.
- 4 Village Watershed Committees were formed with a total membership of 250 members.
- 27 Training and awareness programs were conducted benefitting 650 members.

Impact Created:

- **850** women beneficiaries impacted through trainings, awareness programs and Income generation activities.
- **400** animals treated through comprehensive veterinary camps, thereby reducing diseases and improving cattle health.
- **10** acres brought under fodder cultivation benefitting **500** farmers and making them self sufficient.
- **1526** hectares covered under Project interventions, showing improvement in farming practices and cattle management system.
- **359** hectares farm land irrigated through watershed development.
- Increase in ground water table to **4.5** meters due to various water conservation measures.
- **1700** acres covered under Agro horticulture and Agro forestry initiatives.
- **18,303** trees planted in the watershed area to increase the green cover and promote afforestation.
- **20** village ponds rejuvenated benefitting over **4000** people.
- **29.2** Lakh litres Water harvested through various water conservation measures.

Water Conservation for Sustainable Livelihood Project supported by Tata Capital Housing Finance Limited in Vandavasi, Tamilnadu

Enthused by the ongoing successful project activities and the positive impact created by the project on the community, Tata Capital Housing Finance Limited sanctioned another watershed project in Vandavasi cluster of Thiruvannamalai district. Sustainable village project was designed to cover 11 village hamlets covering a geographical area of 2774.55 hectares, in Acharapakkam block; of Kancheepuram district and Vandavasi block of Thiruvannamalai district.

Major Interventions: Productivity enhancement measures for paddy, pulses, vegetable crops, promotion of sustainable Agriculture production, promotion of organic formulations such as vermi compost, farm yard manure, livelihood promotions for women through micro enterprises such bee keeping, backyard poultry, pasture development, promotion of low cost irrigation, training and capacity building for farmers, construction of check dam, sunken pond, drainage line treatments, plantation of agro forestry and agro horticulture plants.

Project Outreach:

- The Project is implemented across 9 villages benefitting 1556 households.
- 26 SHGs with 390 members were trained and benefitted from Income generating Program.
- 9 VWCs were formed with a total membership of 135 members.
- 30 Training and awareness programs were conducted benefitting 750 members.

Impact Created

- More than **150** women benefitted from Income Generating Programs and relevant Skills up gradation trainings.
- **275** animals were treated during comprehensive veterinary camps, thereby reducing diseases and improving overall health of cattle.
- **5** acres brought under fodder cultivation benefitting **150** farmers.
- **2305** hectares benefitted under the project due to various land and water based interventions.
- **70** acres of land covered under agro horticulture and agro forestry initiatives.
- **9280** trees planted in the project area to increase green cover and promote afforestation.
- **30** hectares of land brought under LEAN farming system benefitting **75** farmers.
- **16.4** lakh litres of water conserved through various water harvesting structures.

Watershed Development Division

S/No	Entrepreneurship Activity	Total Amount	No of women beneficiaries
1.	Backyard Poultry	6,00,000	120
2.	Micro enterprises for marginal families	2,50,000	12
	(a) Idly Batter machine	75,000	3
	(b) Dry Flour machine	25,000	1
	(c) Tailoring machine	50,000	4
	(d) Candle making	25,000	1
	(e) Xerox machine	25,000	1
	(f) Groceries shop	25,000	1
	(g) Milk analyzer / milk fat checking machine	25,000	1
3.	Nursery Raising	50,000	2

Supporting Livelihoods and empowering women through Micro enterprises in rural areas

A total of INR 11.25 lakh has been distributed among SHG women to help them engage in productive business at the village level. Encouraging them through various capacity building and skill development training, NAF with support from Tata Capital Housing Finance Limited has been able to reach out to a total of 196 women and develop them into micro entrepreneurs, thereby empowering them and helping them create an identity for themselves in the village social milieu.



Integrated Community Development Project Supported by Larsen & Toubro in Coimbatore district of Tamilnadu

This project aims at creation of water harvesting structures which were left uncovered in the previous project as well as to promote sanitation as WASH initiative. The project activities include de-silting and deepening of water bodies, construction of check dams, and clearance of channels as well as construction of individual household toilets for the resource poor who already do not have toilets.

Over the past 5 years, NAF has made successful inroads into achieving the various SDGs in the Chettipalayam watershed area by focusing on overall development in social, economic and environmental dimensions and have impacted the lives of the rural community.

Major Interventions in Chettipalayam and Pappampatti: Repair of check dams, construction of individual household toilets for sanitation, training and capacity building of village community, de silting of water bodies, tree plantation.

Project Outreach:

- The project is implemented across 4 villages in Chettipalayam benefitting 1520 members and 4 villages in Pappampatti benefitting 3860 members.
- 300 women beneficiaries in Chettipalayam and 200 women in Pappampatti have benefitted from various trainings and awareness programs.
- 98 Training and awareness programs were conducted benefitting more than 500 members in Chettipalayam and Pappampatti.

Impact Created in Chettipalayam & Pappampatti watershed:

- **2028.31** hectares covered under various land and water interventions in Chettipalayam benefitting **1520** members.
- **1558.21** hectares covered under various land and water interventions in Pappampatti benefitting **3860** members.
- **27** Hectares of fallow land brought under cultivation in Chettipalayam and **25** hectares brought under cultivation in Pappampatti due to availability and increase in ground water resources.
- **224** Household toilets constructed in Chettipalayam benefitting **896** members and **130** toilets constructed in Pappampatti benefitting **520** members under Total Sanitation Program.

- **28** hectares covered under Agro Horticulture initiatives, providing a more sustained income for the farmers in the region.
- **592.91** Lakh litres of water holding capacity has been created through various NRM structures in Chettipalayam.
- A total of **1322.67** lakh litres water holding capacity has been created through various NRM structures in Pappampatti watershed area.
- Significant increase in yield of crops ranging from **15% to 50%** and improved increase in crop cycles, due to water availability and improved farm management practices has been witnessed in both watershed areas.



Comprehensive Village Development Program, Kolwadi Watershed + Project in Kathwadi, Maharashtra, Supported by L&T Technology Services

The project focuses on providing support to uplift the socio-economic status of the Kathwadi village community located in Kolwadi watershed area, Pune district in Maharashtra. The people of Kathwadi village have been facing many problems related to safe drinking water, improper health facilities, poor sanitation facilities, lack of marketing linkages, interrupted electricity network, and unavailability of secondary income generation source. The project components focus on addressing the various gaps through need based approach and community participation.

Major Interventions: Construction of individual household toilets for sanitation, distribution of bio mass stoves, orchard establishment, promotion of income generation among women, skill development, training and capacity building for farmers, front line demonstration and agriculture productivity, construction of NADEP, vermi compost units.

Project outreach:

- The Project is implemented in 1 village benefitting 148 households with 542 members.
- 283 women have benefitted from various trainings and awareness programs and income generation activities.
- 1 Village watershed Committee and 1 Mahila Pani Samiti have been established for the welfare of the community.

Impact Created:

- **319** hectares covered under the Project interventions and benefitted through various land and water interventions.
- **95** farmers benefitted through comprehensive veterinary camps to address diseases and promote cattle health.
- **38** Individual household toilets constructed for the community under Sanitation program benefitting 185 members.

- **7** acres of land come under agro horticulture initiatives thereby providing farmers with a sustainable alternate income source.
- **1146** trees planted under agro forestry initiatives to improve the green cover in the village and promote afforestation.
- **8** acres of land brought under LEAN farming practices.



Supporting Livelihoods and empowering women through Micro enterprises in rural areas

S/No	Entrepreneurship Activity	Total Amount	No of women beneficiaries
1	Provision Store	76000	2
2	Book Stall	16000	1
3	Sheep Rearing	296000	18
4	Goat Rearing	96000	6
5	Buffalo Rearing	982000	36
6	Cow Rearing	36000	2
7	Masala Kandap Machine	16000	1
8	Tailoring machine	164000	7
9	Pico- Fall Machine	48000	3
10	Dry Fish Stall	16000	1
11	Cloth Shop	56000	1
12	Country Chicken Poultry	52000	3
13	Educational Loan	20000	1
14	Flour Mill	16000	1
15	Vermicelli Making Machine	20000	1
16	Chicken Centre	20000	1

The year of the Pandemic has been difficult and challenging for most communities across the globe, not to mention the poor and the marginalized sections, who have felt the full force of this disaster. This very remote community in Kolwadi watershed was adversely affected by the pandemic due to loss of jobs and livelihood for most of the people. It was during this trying time that NAF together with support from LTTS, was able to reach out to 85 women SHG members and provide them with livelihood support to kick start their micro business centres within the village, giving the local economy a small boost during this challenging phase. Apart from financial assistance to begin these micro enterprises, all women also received skill development trainings, exposure to NGOs in Maharashtra working on women empowerment and micro enterprises, thereby empowering the women with knowledge and skills and exposure to uptake various micro businesses to support the income of their families. It has been a successful venture, with most earning a decent amount from the various enterprises set up. A total of INR 19.30 lakh was distributed to women to help them establish various micro enterprises in Kathwadi with the support from LTTS.

Integrated Watershed Management Program -Kokkaranthangal Watershed, Tamilnadu, supported by L&T Technology Services

Kokkaranthangal watershed is situated in Kancheepuram district, Tamilnadu. The watershed covers four villages namely Kokkaranthangal, Amandhakaranai, Arcadu & Bhudhur. The delineated area of the Kokkaranthangal Watershed is 1578.1 hectares with 1327 households. The project focuses on upliftment of the rural community through its Integrated Watershed Management Program while impacting the farmers and restoring the natural resources through its various interventions.

Major Interventions: Construction of check dams, channel lining, WAT, sunken pond, farm pond, training and capacity building for farmers, de silting of drinking water well, distribution of books for school library, Agriculture enhancement in crops such as paddy, pulses, watermelon, grams etc,

Project Outreach:

- The project is implemented across 4 villages with 1327 households and 5303 members.
- 2824 women benefitted from various training and income generating program for livelihood enhancement.
- 10 SHGs formed and capacity building provided benefitting 187 women.
- 4 Village watershed Committees formed and trained and supported for development initiatives.

Impact Created:

- **1578.1** hectares covered under project interventions benefitting **1327** households under various land and water interventions.
- **50** women benefitted from Income Generating Loan for development of Livelihood.
- **235** hectares of farmland irrigated through watershed interventions benefitting **1345** farmers.
- **25** hectares of fallow land brought under cultivation due to availability of water resources.
- **343** acres covered under Agro horticulture and **4635** acres under agro forestry initiatives to provide a sustainable alternative livelihood for farmers.
- **4978** trees planted under Greening initiatives to promote afforestation.
- **2.20** Lakh litres of water conserved through various water harvesting structures.

Supporting Livelihoods and empowering women through Micro enterprises in rural areas

S.No.	Entrepreneurship Activity	Total Amount	No. of women beneficiaries
1	Cow Rearing	12,60,000	42
2	Goat Rearing	40,000	2
3	Petty Shop	60,000	2
4	Grinder	60,000	2
5	Mini Tea Stall with Fast Food	30,000	1
6	Sewing Machine	40,000	4
7	Photo Copier Machine	30,000	1
8	Rice Shop	30,000	1
9	Cloth Selling	30,000	1
10	Poultry	25,000	1

Empowering women with knowledge and skills by providing them the right support system and enabling environment to succeed in setting up micro enterprises has been a major focus of the watershed project supported by LTTS and implemented by NAF in Kokkaranthangal, Tamilnadu. A total of INR 16.5 lakh was distributed to 57 beneficiaries during the past year. This amount came to their assistance at the right time during the pandemic, when most of their earning members lost their source of income. This was seen a blessing in disguise to all women, who proactively were able to provide for their families through setting up of micro enterprises in their villages, earning them a respectable status within the family and in their communities.



Water Resource Development Project in Kasna, Uttar Pradesh Supported by Asian Paints Limited

Mahepa Jagir is a medium sized village located in Sikandrabad Tehsil of Bulandshahr district, Uttar Pradesh, whose population is largely dependent on agriculture as their only source of livelihood and they are heavily dependent on irrigation from the Ganges.

Continuous drawing of water for irrigation over a period of time without proper replenishment has led to a declining trend of the groundwater level in the region. To prevent the loss of soil and water and to conserve and sustain the natural resources, Water Resource Development program has been taken up in the region.

The Kumargad Talab is a water body in Mahepa Jagir Village which is mainly used for cattle rearing. The pond has a catchment area of 2, 38,425 sq.m; receives storm water during monsoon and also excess irrigation water draining from the adjoining agricultural fields. The water collected in the pond is available as a surface source for around 20 days on an average. The percolation rate of water into the subsurface zone is high owing to the sandy-loam nature of the soil of the pond.

In recent times, the pond is slowly turning into a dumping spot for the waste. In order to bring back the functionality and the serenity of the pond, the pond was selected to be rejuvenated under the Water Resources Development program of 2020-2021 funded by APL, Kasna. Under the program, the pond was first de silted and the capacity increased by 1250 kilolitres and the embankments have been strengthened by brick pitching.

Major Intervention: Pond Rejuvenation

Impact Created:

- Increase in the capacity of Pond by **1250kl**.
- Indirect benefit to **39** farmers at the proximity in terms of increase in ground water level (The water harvested in the pond augments the groundwater level in the locality, the benefits of which could be harnessed directly by the surrounding **39** farmers in the proximity of the pond in terms of increased availability of water for irrigation).
- Restoration of Pond Ecosystem.
- Enhanced strength of Pond Embankments.



Water Resources Project in Rohtak, Haryana, Supported by Asian Paints Limited

Kharawar is a village in Rohtak district of Haryana with agriculture as the predominant occupation of the villagers. Wheat and Paddy are the major crops cultivated by the farmers in the village. The main sources of irrigation are canal water from Western Yamuna Canal and the individual Tube wells. Most of the channels constructed to carry irrigation water are unlined, and hence, a large part of irrigation water is lost in percolation and absorption. The seepage losses can be avoided or minimized by lining of irrigation channels.

National Agro Foundation with the support under CSR of Asian Paints Limited, Rohtak has undertaken the channel lining project; in order to encourage the farmers to efficiently utilize the canal water and reduce their dependency on tube wells.

Major Intervention: Lining of Irrigation Channel for farmers.

Impact Created:

- Increased supply of river water to the directly irrigated 21 acres of agricultural field.
- Reduced maintenance cost (de silting and removal of weeds) from INR Rs.2500/- to Rs.500/- per acre per annum.
- Increase in ease of supplying irrigation water by using cemented shutters in place of labour-intensive tasks.
- Reduction in fuel consumption of pumps in tube well due to its reduced usage.
- Increase in productivity of crops using good quality river water than saline tube well water.



Water Bodies Rejuvenation Project in Nanjangudu, Karnataka Supported by Asian Paints Limited

Three ponds from Badanavalu and Nerale villages were selected to be rejuvenated under the Water Resources Development programme of 2020-2021. Under the programme, the following activities were carried out such as bush clearance, removal of sludge and dirt water, de silting and deepening of ponds, embankment strengthening by means of mechanical compaction and clearing the channels of the catchment that drain to the pond.

The potential for collection of water has been increased by 14654kl by this activity. In order to ensure the additional strength and durability of the Nerale Pond, the embankments of the pond have been lined with stone pitching.

The ponds have been connected to the natural streams of the catchment and the water stored in the ponds will recharge the groundwater of the villages and ensure sustained availability of water resources to the downstream villages.

Major Interventions: Rejuvenation and strengthening of pond embankments.

Impact created:

- Restoration of pond eco-system.
- Increase of water-saving potential by **14654kl**.
- **313** farmers benefitted by harvesting rain water in the rejuvenated ponds.
- **273** cattle farmers benefitted by using the cattle tanks constructed in three villages.
- **42** farmers have benefitted from use of Chisel Plough in two villages.

- Increase in duration of availability of irrigation water to farmers by reducing the wastage of rainwater.



Water Body Restoration under Disaster Relief Project in Sablewadi, Maharashtra Supported by BNY Mellon

This project was undertaken in Sablewadi village in Satara district in Maharashtra which was affected by flash floods in the year 2019-. This project was supported under the CSR of BNY Mellon. Lack of proper water storage infrastructure was identified as the major reason for floods and the project activity was dedicated to creating water harvesting structures and channelizing the excess flow through proper drains. The major focus of the Project was pond rejuvenation, strengthening the embankments, deepening and increasing the water holding capacity of the pond and clearing the channels to prevent future flooding and efficient water usage by the farmers in the nearby vicinity.

Major Intervention: Pond Rejuvenation

Impact Created:

- Water harvesting potential created upto **53.38** lakh litres in Sablewadi through rejuvenation of 1 pond.
- **25** members impacted through this intervention, due to prolonged availability of water in the pond for domestic uses.



Water Bodies Rejuvenation for Rain water harvesting near Industrial Area, Oragadam, Kancheepuram, Tamilnadu Supported by Renault Nissan

Over the years, water is proving to be a precious resource facing many challenges and much shortage in both urban and rural areas due to over exploitation, improper conservation and climate change, thereby impacting lives and livelihoods across the country. One of the major reasons, for this acute shortage; has been the poor water holding capacities of the existing water bodies such as tanks and lakes, many of which have disappeared due to poor management or diversion of that land for other purposes.

This joint venture with Renault has helped to augment the water resources viz., the water bodies like tanks and panchayat lakes through de-silting and deepening, creation of effective water ways and channelizing them through construction of suitable water harvesting structures in order to support the people. Thus NAF has been able to effectively address this water crisis using a “Catalytic Strategy” to enhance the productivity and profitability of the farming systems and livelihood security.

Major Interventions: Lake Rejuvenation.

Project Outreach: This project is implemented across 3 villages, benefitting 1150 households.

Project Impact:

- The embankment has been strengthened and this will help prevent flooding in the area due to heavy monsoons.
- Additional water holding capacity has been created to **15,750** kl of water .
- Ground water table will increase substantially due to water retained in the lake.

- The surrounding has been cleaned and plantations Introduced to enhance aesthetic value of the location as well as encourage a pollution free environment thereby increasing the livelihood of the neighboring community.



Holistic Rural Development Project in Virudhunagar District Supported by HDFC Ltd

The project was approved by the end of 2020 with the focus on Natural Resources management, Skill Training and Livelihood enhancement, Healthcare & Hygiene, Financial literacy & Inclusion, Promotion of education. The project proposes to work in 20 villages in Virudhunagar District of Tamilnadu.



Integrated Water Resource Management Project Supported by Novartis, Solakpalle, Telengana

This project is being implemented in 6 villages in Telengana with the aim to address various challenges faced by people in these villages with support from Novartis. The primary focus of the project being soil and water conservation through watershed interventions, promotion of LEAN farming technologies through agri model farm demonstrations, installation of safe drinking water purification units for the schools, training and capacity building of the local communities, proper sanitation facilities for the government schools in the project villages. The project baseline data collection work has been completed and various entry point activities carried out during the period.



Watershed Projects Supported by NABARD and Corporate Partners

NAF has been undertaking watershed projects with the grant assistance from NABARD and Corporate partners under CSR support on 50:50 fund sharing basis. The following is the list of watershed projects being undertaken by NAF under NABARD & CSR partnership, totally eight projects are being implemented as detailed in the table given below.

Sr. No	Name of the Watershed	District	No. of villages covered	Total Area (Ha)	No. of Households Benefitted	Funding Partner
1	K.N.Palayam	Erode	5	1161.2	3178	NABARD &Bannari Amman Sugars
2	Melpennathur	Thiruvannamalai	4	1346.9	3337	NABARD &Bannari Amman Sugars
3	Kuppachiparai	Krishnagiri	7	1182.87	2736	NABARD & The Rotary club of Madras Coromandel
4	Kotteri	Cuddalore	4	1079	2042	NABARD & TITAN
5	Narumanam	Cuddalore	4	918.35	1664	NABARD & TITAN
6	Kolathankurichi	Cuddalore	6	947.73	2725	NABARD & TITAN
7	Thandakarankuppam	Cuddalore	5	921.72	2328	NABARD & TITAN
8	Pulleri	Chengalpattu	11	984.31	5668	NABARD

Watershed Projects Supported by NABARD and Corporate Partners

The following activities were carried out across the NABARD & CSR funded projects:

Area Line Treatments:

- **Field Bund:** Field bund was formed in the agricultural lands for a quantity of **14576** Cu.M. in NABARD & CSR funded projects during the reporting period. It has helped to improve the soil moisture content of the agricultural lands and reduced the loss of top soil during heavy runoff.
- **Chisel Plough:** Total land area of **177** ha was ploughed in all the watershed villages .
- **Farm Ponds:** **25** farm ponds were newly excavated with the quantity of **7744** Cu.M. in the watershed villages of K.N.Palayam, Kuppachiparai, Melpennathur, Kotteri and Pulleri.
- **Farm pond inlet & outlet:** During the reporting period, **23** farm pond inlet/ outlet were constructed in Kuppachiparai and Melpennathur watersheds.
- **Cattle ponds:** **6** cattle ponds were excavated with the quantity of **17049** Cu.M. in the watershed villages of Kotteri and Thandakarankuppam.
- **Catch pit:** Because of the field condition and need, catch pits of total quantity of **294** Cu.M. was excavated in Kotteri and Narumanam watersheds.
- **Well Recharge Pit:** **3** well recharge pits were constructed in the watershed of K.N.Palayam and Melpennathur.
- **Water absorption trenches:** Water absorption trenches (WAT) was created in Pulleri and Kuppachiparai during the reporting period. Total achieved quantity for the year was **1186** Cu.M.
- **Agro Forestry & Agro Horticulture Plantation:** The forestry plants and horticulture plants that are suitable for the respective watershed area were chosen and distributed to the farmers living within the watershed area. Agro forestry saplings like pongamia piñata, wild neem, jamun, tamarind, neem, etc and Agro Horticulture plants like mango, fig, jack, lemon, amla, cashew, pomegranate, guava, etc were planted in these watershed areas. In Total, **68940** nos. of agro forestry saplings and **46210** nos. of agro horticulture saplings were successfully planted and raised with utmost care. Drought resistant varieties like pungan, wild neem, tamarind, etc were planted in the common lands benefitting the communities.
- **Fodder Development:** During the reporting period, **20** beneficiaries in K.N.Palayam watershed, **5** beneficiaries in Narumanam, **11** beneficiaries in Pulleri watershed were provided with **1500** Co4 variety fodder stems each. These fodder stems had grown well in the field of 10 cents. The farmers had started to use this fodder as cattle feed and improve the quality of milche animals. This variety of fodder crop will help to improve the fat content of milk, thus increasing the income of these marginal farmers. From the matured fodder stems, farmers will be able to produce more fodder throughout the year, thus providing a sustainable solution for the fodder demand.

Watershed Projects Supported by NABARD and Corporate Partners

Impact Created due to Area Line Treatment in the Project Locations:

Name of Intervention	Post Intervention	
	Quantity	Impact
Field bund	14576 rm	- Increased subsoil moisture and infiltration - Reduced loss of rain water through runoff - Conversion of Fallow land into cultivation - Prevented inundation of crop to some extent.
Chisel Plough	177 Cu.M.	- Breaks subsoil hardpan - Increased subsoil moisture and infiltration - Ground water level improvement - Reduced frequency of irrigation in irrigated
Farm Pond	7744 Cu.M.	- Availability of additional quantity of water. - Improved groundwater recharge. - Additional income through Fish Rearing, Bund planting etc.
Farm pond inlet cum outlet	23 Cu.M.	- No/ minimum possibility of damage to bund. - No deposition of silt particles in farm pond.
Cattle Pond	17049 Cu.M.	- Availability of water for cattle. - Can be used for growing plants in common land. - Ground water recharged.
Catch pit	294 Cu.M.	- Increase in organic matter content of soil. - Prevents the transport of top soil from agricultural land. - Availability of soil moisture for longer duration in root zone
Well Recharge Pit	3 nos	- Directly recharges the open well. - Availability of water for extraction. - Dilutes salt content - Brought back the defunct wells to operation.
Water Absorption trenches	1186 Cu.M.	- Prevents the transport of top soil from ridge. - Harvests excess runoff and improves groundwater recharge. - Increases vegetative growth
Agro Horticulture	68940 nos	- Additional Income generated. - Improved micro climate of the region. - Additional Health benefits
Agro Forestry	46210 nos	- Additional Income generated. - Improved micro climate of the region. - After few years, it can be used to raise <u>emergency fund. for the village</u>
Fodder Development	36 nos	- Availability of Fresh and green fodder - Increased fat content in milk - Higher income - Prevented over grazing

Watershed Projects Supported by NABARD and Corporate Partners

Drainage Line Treatments:

- **Channel Formation:** Channels to the tune of **7618** Cu.M. was excavated to facilitate the flow of water of these watersheds. Earlier, the water used to get into the nearby agricultural lands and habitations because there was no proper runoff drainage channel. Extra efforts were taken to save grown trees in the line of excavation of these channels. Channels were formed in the watersheds of Pulleri, Kolathankurichi, Narumanam, Kotteri and K.N.Palayam.
- **Gabion Check Dam:** The first attempt of laying Gabion check dam was completed in Pulleri watershed for a quantity of **8** running meters.
- **Loose Rock Check Dam:** In total **69** Cu.M. of Loose rock check dam was formed in Kuppachiparai, Narumanam and Pulleri watersheds. **21** Cu.M. in Kuppachiparai, **32** Cu.M. in Narumanam, **16** Cu.M. in Pulleri was completed during the reporting period.
- **Masonry Check Dam:** The location was chosen so as to ensure maximum water holding capacity of check dam. The storm water that runs to join the nearby stream will be slowed down and made to percolate into the sub soil improving the ground water table. This indirectly increases the water availability to the well which can be used for agriculture. Totally five masonry check dams were constructed during the reporting period, each having water holding capacity of **120000** litres of water in a single fill.
- **Percolation Pond:** Percolation Ponds with the sanctioned quantity of **14404** Cu.M. was excavated in K.N.Palayam, Kuppachiparai, Narumanam and Thandakarankuppam. In addition to this quantity, excess quantity was also excavated with the contribution of farmers.
- **Sunken Pond:** Sunken ponds with the quantity of **2838** Cu.M. was excavated in the channels passing through the watersheds of Kuppachiparai and Narumanam. These pits will act as a water storage structure and settling point of sediments carried by the rain water.



Impact of Drainage line Treatments

Watershed Projects Supported by NABARD and Corporate Partners

Under drainage line treatments, percolation pond and channel formation were completed in K.N.Palayam watershed.

Name of Intervention	Post Intervention	
	Quantity	Impact
Masonry Check Dam	5 nos(60 lakh litres storage capacity)	- Improved Ground water recharge; - Controls the velocity of the runoff and soil erosion by trapping silt and solid particles. - Improved growth of vegetation.
Channel Formation	7618 Cu.M.	- Prevents flooding in agricultural land and habitations - Increased the possibility to fill nearest water body - Ensures the riparian rights of valley portion also.
Gabion Check dam	8 nos	- Improved Ground water recharge; - Controls the velocity of the runoff and soil erosion by trapping silt and solid particles in second order streams. - Improved growth of vegetation.
Loose Rock check dam	69 nos	- Improved Ground water recharge; - Controls the velocity of the runoff and soil erosion by trapping silt and solid particles. - Improved growth of vegetation.
Percolation Pond	14404 Cu.M.	- Stores water to facilitate vertical percolation of water. - Improves ground water table.
Sunken Pond	2838 Cu.M.	- Traps silt and soil which can be reapplied into the agricultural land easily. - Prevents bund damage by slowing down the rain water.



Watershed Projects Supported by NABARD and Corporate Partners

Livelihood Support Scheme for Women and Landless

Under the Livelihood Support scheme for Women, an amount of INR 38 Lakh was distributed; benefitting 129 SHG women members. With the help of this amount and the repayment amount along with the minimum interest received from the beneficiaries, loan assistance was provided for an amount of 53.68 Lakh for the purchase of goats and milche animals, etc Regular meetings are being conducted to monitor and guide SHG members under various entrepreneurship activities.

S.No	Purpose of loan	Total Loan Amount	Total no. of beneficiaries
1	Milche animal	3435000	112
2	Fancy store	35000	1
3	Mushroom cultivation	35000	1
4	Goat farming	180000	9
5	Saree Business	20000	1
6	Sewing Machine	15000	1
7	Poultry farming	80000	4
Total		3800000	129

Training & Capacity Building of Farmers

Agriculture and its allied activities account for major source of income in the project area. It employs both skilled and unskilled labour of the region. In order to provide alternative source of income and to improve the agricultural practices, training and demonstrations were given to the villagers of these watersheds. A total of 33 trainings were organized benefitting 863 participants.

Climate Proofing Projects Supported by NABARD

The goal of this program is Integration of watershed development program activities towards rehabilitation of degraded Soils and building climate resilience by improving adaptive capacities of the communities against changing climate in Arasur, Nugumbal, Sirukalathur and Othivilagam WDF watershed in Chengalpattu District supported by NABARD.

Watershed Projects Supported by NABARD and Corporate Partners

Major Interventions:

The following interventions were implemented under the watershed projects over a period of four years.

- Adaptation of existing measures and implementation of required additional physical measures for soil and water conservation, erosion and degradation control, land reclamation and land improvement on common and private land;
- Promotion of measures to improve soil quality and soil health, e.g. integrated nutrient management using organic fertilizers, farmyard manure application, mulching, green leaf application, vermi-composting, promotion of crop diversification, crop rotation, lean farming technologies and related soil protection measures;
- Promotion of sustainable farming, productivity enhancement and natural resource management practices and climate change adaptation measures, e.g. crop diversification, crop intensification, minimizing irrigation, micro-drip-irrigation through convergence, nutrient enrichment, organic fertilizers and integrated pest management;
- Implementation of measures to improve nutritional security and livelihood promotion by backyard poultry or group fisheries in common pond, azolla cultivation;
- Promotion of livelihood options (on-farm/off-farm), using existing village-level revolving funds, partly topped-up through project funds on a grant basis under maintenance funds;
- Capacity building and institution building for above mentioned activities and especially climate change risk, adaptation and mitigation measures through Project Facilitating Agencies;
- Implementation of a GIS based programme management information system;
- Systematization and documentation of local experiences and best practices, publications, trainings, policy dissemination as well as workshops, exposure visits, events for knowledge exchange

Watershed Projects Supported by NABARD and Corporate Partners

Outreach & Impact:

Arasur Climate Proofing Project			
S No	Name of the intervention	Activities completed	No of beneficiaries impacted
1	Soil and Water conservation	18100Cu.M.	180 Lakh litres of water harvested 1100 farmers benefitted covering 430 acres
2	Soil Health Management	Bio fertilizer : 250 Nos Soil sample : 600 Nos FYM : 45 Nos Azolla : 50 Units Summer plough: 150Ha	1265 farmers benefitted
3	Sustainable NRM, Lean farming practices & Nutritional security	Crop diversification with pulses: 215 acres Promotion of millet crops: 25 acres Promotion of intercropping: 25 acres Promotion of IPM : 50 acres Vermi compost units : 25 Fish culture : 4 ponds 7000 fingerlings yielded 3500 Kgs of fish Desi chicken: 57 units	396 acres covered and 557 farmers benefitted
4	Preventing climate change risk	Automatic weather station installed	200 farmers are receiving Weather based advisories 2 times a week on regular basis for the past 3 years
5	Training and Capacity building	20 trainings conducted on various adaptive measures to climate change effect	600 farmers participated in capacity building training programs

Watershed Projects Supported by NABARD and Corporate Partners

Nugumbal Climate Proofing Project			
S No	Name of the intervention	Activities completed	No of beneficiaries impacted
1	Soil and Water conservation	20080 Cu.M.	200 Lakh litres of water harvested 1400 farmers benefitted covering 320 acres
2	Soil Health Management	Green manure : 125 Nos Green leaf manure : 125 Nos Bio fertilizer : 125 Nos Soil sample : 465 Nos FYM : 125 Nos Summer plough: 100 ha	1675 farmers benefitted
3	Sustainable NRM, Lean farming practices & Nutritional security	Crop diversification with pulses : 115 acres CC resilient crop Promotion of millet crops: 25 acres Promotion of intercropping: 25 acres Companion crop : 3 acres Promotion of IPM : 25 acres Vermi compost units : 5 Fish culture : 3 ponds 3500 fingerlings yielded 1200 Kgs of fish	401 acres covered and 520 farmers benefitted
4	Preventing climate change risk	Automatic weather station installed	203 farmers are receiving Weather based advisories 2 times a week on regular basis for the past 3 years
5	Training and Capacity building	16 training conducted on various adaptive measures to climate change effect	480 farmers participated in capacity building training programs

Watershed Projects Supported by NABARD and Corporate Partners

Othivilagam Climate Proofing Project			
S No	Name of the intervention	Activities completed	No of beneficiaries impacted
1	Soil and Water conservation	11171 Cu.M.	110 Lakh litres of water harvested 920 farmers benefitted covering 395 acres
2	Soil Health Management	Bio fertilizer : 155 Nos Soil sample : 540 Nos FYM : 125 Nos Green manure: 125 Green leafy manure: 125 Summer plough: 75 ha	1119 farmers benefitted
3	Sustainable NRM, Lean farming practices & Nutritional security	Crop diversification with pulses: 115 acres Introduction of CC resilient crop: 25 ha Promotion of intercropping: 25 acres Sustainable agriculture: 25 ha Companion crop: 2 ha Vermi compost units : 6 Fish culture : 2 ponds	350 acres covered and 690 farmers benefitted
4	Preventing climate change risk	Automatic weather station installed	200 farmers are receiving Weather based advisories 2 times a week on regular basis for the past 3 years
5	Training and Capacity building	15 training conducted o various adaptive measures to climate change effect	375 farmers participated in capacity building training programs

Watershed Projects Supported by NABARD and Corporate Partners

Sirukalathur Climate Proofing Project			
S No	Name of the intervention	Activities completed	No of beneficiaries impacted
1	Soil and Water conservation	16525 Cu.M.	165 Lakh litres of water harvested 800 farmers benefitted covering 525 acres
2	Soil Health Management	Soil sample : 435 Nos FYM : 145 Nos Green manure: 145 Nos Green leafy manure: 145 Summer plough: 145 acres	1160 farmers benefitted
3	Sustainable NRM, Lean farming practices & Nutritional security	Crop diversification with pulses: 315 acres Promotion of millet CC resilient crops: 25 acres Promotion of intercropping in groundnut: 25 acres Companion crops: 2 acres Vermi compost units : 6 Fish culture : 2 ponds 1500 fingerlings yielded 1150 Kgs of fish	392 ha covered and 1525 farmers benefitted
4	Preventing climate change risk	Automatic weather station installed	200 farmers are receiving Weather based advisories 2 times a week on regular basis for the past 3 years
5	Training and Capacity building	18 training conducted on various adaptive measures to climate change effect	450 farmers participated in capacity building training programs

Watershed Projects Supported by NABARD and Corporate Partners





Agricultural Development Division

NAF's agricultural development division functions with the goal to enable our farming communities to adopt the latest technological practices in agriculture and up skill themselves to adapt to the fast changing environment.

NAF has been promoting sustainable agriculture through Lean Farming which is a combination of organic, bio and inorganic approach with climate change adaptation and mitigation measures which is economically viable, environmentally safe and ecologically sustainable. These initiatives are undertaken with support from various stakeholders including the Government and Corporate sector agencies. In addition, every effort of our implementation team strives to involve the targeted beneficiaries from the project-planning phase to the project exit phase creating and nurturing a sustainably lasting model.

Of late, in addition to the above, NAF has started focusing on up skilling the farmers to practice smart farming by building their various capabilities including business skills, to overcome the challenges posed by global forces and to become profitable. Introduction of modern technologies like laser land leveling, precision agriculture, poly houses, micro irrigation and other advancements in farming technologies such as GIS and RS, A I etc., has become integral part of NAF's interventions.

These initiatives are undertaken with support from various stakeholders including the Government and Corporate sector agencies. NAF in collaboration with various corporate partners is implementing the following projects:

Sl no	Name of the Project	No of Villages	District	State	CSR Partner
1	Sustainable Agriculture	1	Kancheepuram	Tamil Nadu	Apollo Tyres Foundation
2	Tree Farming and Carbon sequestration	3	Thiruvannamalai	Tamil Nadu	Apollo Tyres Foundation
3	Water and Agriculture Development (WADI) Project	3	Kancheepuram	Tamilnadu	Oerlikon Friction Systems
4	Water and Agriculture Development (WADI) Project	4	Pune	Pune	Oerlikon Friction Systems
5.	Lean Farming Project	12	East Godavari	Andhra Pradesh	BNY Mellon
6	Lean Farming Project	14	Varanasi	Uttar Pradesh	BNY Mellon
7	Lean Farming Project	4	Rohtak	Haryana	National Agro Foundation
8.	Lean Farming Project	3	Kasna	Uttar Pradesh	National Agro Foundation
9.	Micro Irrigation Project	2	Villupuram	Tamilnadu	BNY Mellon
10.	Upliftment of Small Farm Holders Community affected by COVID 19 Pandemic	2	Pune	Maharashtra	BNY Mellon

Project on Sustainable Agriculture, Vallam Supported by Apollo Tyres Foundation

This project includes components such as Refresher Trainings, Adoption and Replication of Lean farming Technologies, Enriched Farm Yard Manuring, Slow release Nitrogen practices, Chisel ploughing, Laser Leveling, De-silting of and strengthening the bunds of Pond and Irrigation channel, Tree planting on pond bunds, grouping farmers under social media and Online advisory services.



Major Interventions: Technology Dissemination and transfer of scientific know-how to farmers, Promoting Use of Farm Machinery for efficient Productivity, Water Conservation, Demonstration of Organic practices, Greening Initiatives through Plantation, Other Support services, Training and Capacity Building,

Impact of the Project:

❖ Technology Dissemination

- **100** acres of land have been brought under lean farm technologies.
- Agri Advisory services during field visit by agri experts have helped the farmers in taking right decision on crop management including nutrient management and pest and disease management.
- Soil Health Cards and Soil testing facilities have been made available to **20** farmers, who have been able to use that information to undertake corrective measures to improve the quality of soils in their fields.
- **20** acres of farm land has been fertilized by use of enriched farm yard manure.
- **20** acres of land has been using slow release nitrogen practices through various demonstration and trainings to farmers.

❖ Promoting Use of Farm Machinery for efficient Productivity

- **20** farmers have used the chisel plough on their land covering **34.10** acres over 30 hours, thereby reducing surface run off and increasing rain water percolation in to the ground, retaking soil moisture for better rooting of plants.

- **13** farmers have used the laser leveler on their land covering **24** acres over 30 hours, thereby reducing drudgery, lowering land preparation costs and increasing water use efficiency.

❖ **Water Conservation**

- De-silting of Pond has been carried out and storage capacity of the pond has been increased to **2.25** lakh litres as additional storage, thereby prolonging the water availability for the local community.
- Shrub clearing and bund strengthening works has been completed on irrigation canal to the tune of **1750** C.uM.

❖ **Demonstration of Organic practices**

- Five Azolla units have been established with 40% contribution from the beneficiaries. These Azolla are being used as both organic manure and cattle feed.
- Five Vermi compost units have been established with 40% contribution from the beneficiaries. The vermi castings from these units are being used as nutrient supplement for their crop and kitchen garden.

❖ **Greening Initiatives**

- **200** tree saplings were planted on pond bunds to increase the green cover in the area, with the support and involvement of the local communities, who will maintain the trees for future use.

❖ **Support services**

- Facilitation of government schemes have been undertaken through interactive sessions for 24 farmers. Farmers were grouped under social media in the name of NAF-Apollo Vallam Farmers Group Online advisory services through Whatsapp & AV on topics such as new agri technologies, farm machineries, crop insurance, online webinars, etc. to reach out to 96 farmers. A database of 96 farmers has been created and facilitated for information flow based on demand from the farmers.

❖ **Training and Capacity Building**

- Five refresher training programs were conducted on Laser Leveling, Improving Fertilizer Use Efficiency, Improved methods of paddy cultivation, tree planting and water management to enhance the farmer's knowledge and skills on the above topics.



Project on Tree Farming and Carbon Sequestration, Vandavasi Supported by Apollo Tyres Foundation

To encourage tree growing activities amongst farmers as a viable economic activity, It is a three year project and the second year activities are ongoing. The project has components such as knowledge training, Farmers Field School, soil health improvement, intercropping in between tree crops, Training and pruning of trees, Vermi, Azolla and compost models, online advisory services etc.

Major Interventions: Soil Health Improvement, Webinars on Tree cultivation Technologies and Agro forestry, Training and Pruning, Promoting Intercrops in Tree farming for additional income, Online Advisory services.

Impact of the Project:

❖ Soil Health Improvement

- One vermi compost, two azolla and one proper composting units were established in the Model Pilot plots to supply quality organic manure.
- Soil sample was taken from the pilot plot for comprehensive soil health analysis. Based on the soil analysis, organic manures, bio fertilizers, soil amendments, macronutrients,



secondary nutrients and micronutrients were prescribed and applied in right quantities at right time in the model plots.

- The comparison of soil test results between the year 2019 and 2020 of the Model pilot plots has revealed that there is significant improvement in the soil health status including microbes and other essential parameters.

❖ Webinars

- Due to Covid-19, knowledge trainings were conducted on virtual mode through webinars. Two such webinars were conducted on Tree cultivation Technologies and Agro forestry.

❖ Training on Tree Pruning

- The trees planted in demo plots were properly pruned and the farmers were taught scientific techniques of pruning and its frequency for optimization of tree growth in the plots.

❖ Intercrops in Tree farming

- For effective utilization of the available space between the trees, short duration intercrops were introduced. In the model pilot plots, farmers raised groundnut, Red gram and curry leaf during first season. During the past year, the farmers have raised vegetables like carrot, cabbage, knoll-khol, beans, spinach, brinjal, chilli, etc. This has yielded good result and has added to interim income for the farmers.

❖ Online Advisory services

- In addition to Advisory services through regular field visits by NAF Experts, online services were also provided by the team.

Water and Agriculture Development (WADI) Project Supported by Oerlikon Friction Systems

NAF is implementing Water and Agriculture Development Initiatives (WADI) projects in Tamilnadu and Pune District under the CSR support of Oerlikon Friction Systems.

a. Water and Agriculture Development (WADI) Project in Tamilnadu

WADI project is in the second year of implementation phase in three villages of Kancheepuram district. The major components of this project are training and capacity building, soil health improvement, cattle development and infrastructure development.

Fourteen awareness training programs, three cattle camps, three livestock training programs have been completed. To improve soil health, six vermi compost units, five azolla units and fifty composting units were established. In addition, 173 acres of problematic soils have been reclaimed by adding soil amendments and frequent awareness to farmers. Fodder kits have been distributed to the farmers. Thirteen FLDs on paddy and four on vegetables have been established during the reporting period 2020 - 2021.

Water bodies Rejuvenation

Oerlikon has sanctioned an additional budget for rejuvenation of water bodies in Walajabad project villages for a period of 1.5 years. The project commenced on October 2019. The project components are rejuvenation of village pond, irrigation channels, and construction of sluice gate and well recharge pits.

Irrigation channels were de-silted to a volume of 1724 C.uM. and 21 well recharge pits have been constructed during the reporting period.

b. Water and Agriculture Development (WADI) Project in Maharashtra

In Pune district, four villages namely Adavali, Karanjawane, Askavadi and Kodavadi were selected to implement Water and Agriculture initiatives. First phase of the project was for 1.5 years and it was completed by September 2019. The second phase of the project is for 2.5 years and it commenced from October 2019. The project components for current year are Training and capacity building, Construction of water conservation structures, community pipeline, and improving logistics for transportation of agri produces, convergence of Government schemes, Replication of Agri technologies, Establishment of orchards and Promotion of IGP activities through Reserve Fund.

Intensive technical training was conducted for 32 farmers from the project villages at NAF Centre for Rural Development (CFRD). Three awareness training programs, two pre season camps and one livestock training were conducted at village level. Orchards were established in all the villages. Nine FLDs are ongoing. Lean farming technologies are being replicated in 124 acres totally in all the four villages. Farmers' fields were regularly visited by agri experts and necessary technical advice is being provided to the farmers.



Lean Farming Project in Andhra Pradesh Supported by BNY Mellon

NAF has been promoting sustainable agriculture through Lean Farming which is a combination of organic, bio and inorganic approach with climate change adaptation and mitigation measures which is economically viable, environmentally safe and ecologically sustainable. These initiatives are undertaken with support from various stakeholders including the Government and Corporate sector agencies.

NAF has started to implement Lean Farming Technologies (LFT) project in East Godavari district with support from BNY Mellon. In order to create an impact amongst the cultivators, participatory adaptive research trials were conducted wherein a portion of land was brought under LFT(Demo Plot) and the balance portion of land was under Farmers' Practice (Control Plot) and the farmers were allowed to experience the benefits of LFT through the principles of "Seeing is Believing" and "Learning by Doing".

Project Objectives:

- To train the farmers and build their capacities and skills in adoption of Lean Farming Technologies (LFT).
- To increase yield, decrease input costs by adopting package of practices.
- To reduce excessive use of fertilizers, thereby reducing environmental pollution .
- Soil reclamation based on soil testing and application of recommended solutions.
- Improving water use efficiency through better water conservation and management practices.

Outcomes of the Project intervention are as follows:

- No of pesticide sprays have been reduced from an average of 5 pesticide sprays in control plots versus 1.67 sprays in demo plots.
- Use of fertilizers have reduced, thereby reducing costs of application per acre to 2700/- in demo plots vis-à-vis 3650/- in control plots.
- Earlier, there was no knowledge of organic practices, after introduction of Panchakavya and other organic formulations, the cost of inputs for the field have reduced considerably.
- As preventive measures for pest control, various eco friendly pest control tools such as Pheromone traps, bird perches, sticky traps, light traps, pest repellents were introduced to reduce pest incidence in the fields.
- As prophylactic measures for disease control, seed treatment with bio fungicides and pseudomonas foliar spray has been undertaken for all crops in the project area.
- Polluted soils have been reclaimed based on comprehensive soil tests recommendation, by treating with soil amendments to increase the overall productivity and health of the soils in the area.
- To reduce usage of inorganic fertilizers, bio fertilizers have been introduced in the farms, thereby lowering the dependency of chemical fertilizers.
- **54** FLDs have been established and are in current season of crop.
- Due to improved methods of cultivation by adopting Lean Farming Technologies, there has been a marked difference in the cost of production and yield per acre.

Lean Farming Project in Uttar Pradesh Supported by BNY Mellon

As part of popularizing Lean Farming, a pilot project has been implemented in Varanasi district of Uttar Pradesh with support from BNY Mellon. The major components of the project are training and capacity building, Soil health management and Institution building.

Totally forty nine Front Line Demonstrations on Lean farming Technologies on different crops have been established. Twenty eight FLDs have been completed and the results have been found encouraging

Lean Farming Project in Haryana and Uttar Pradesh Supported by NAF.

In order to promote Agriculture water saving, NAF is promoting Lean Farming in the project villages where watershed projects are implemented in Rohtak (Haryana) and Kasna (U.P). NAF has established 10 FLDs in Rohtak, and 8 FLDs in Kasna. As per soil test recommendations, critical inputs were provided and IPM tools were also installed to prevent pest incidence. The entire process is being monitored by Agri scientists from NAF.

Micro Irrigation Project in Tamilnadu Supported by BNY Mellon.

Micro irrigation is an important system which reduces water usage upto 75% in addition to yield increase. NAF, with CSR support from BNY Mellon is working towards covering upto over 100 acres in two villages of Marakanam block of Villupuram district from traditional irrigation methods to micro irrigation systems. The farmers belonging o these villages are predominantly growers of vegetables and watermelon. The Government of Tamilnadu is offering up to 90% of subsidy for establishment of micro irrigation system and the balance is to be provided by the farmers. However, NAF is offering to support the cost of the balance amount through support received from BNY Mellon. NAF is creating awareness among the farmers on micro irrigation system, to encourage them to adopt these facilities with assistance from government subsidies in addition to self contribution and support from NAF. Totally 59 farmers have benefitted under this project covering 103 acres of land. Installation of drip irrigation and sprinkler irrigation is under different stages of progress during the reporting period.





Upliftment of Small Farm Holders Community affected by Covid- 19 Pandemic through Sustainable Lean Farming in Maharashtra through BNY Mellon.

BNY Mellon has sponsored this project to alleviate the financial impact caused due to COVID - 19 among small farmers of Parawadi and Chorepadal villages of Bhor Thesil in Pune District of Maharashtra. The major components of this project are Intensive technical training, awareness trainings, pre season camps, establishment of Vermi compost units, bio Input unit and mini processing units, Institution building and revolving fund assistance and frontline demonstrations.







Agri-Business Development Division

Indian economy is globally identified as an agrarian economy. Agriculture is called the backbone of our economy as it supports the livelihood of more than 50% of the nation's population. But the farmers, especially the small land holding farmers, struggle to make ends meet on a day-to-day basis due to various issues at both the national and local level. Ironically though, farming is deemed to be economically profitable, but being a farmer is not.

Of late, there has been considerable shift in agriculture from “Subsistence farming” to “Market Led” approach. i.e. “Agri – Culture” to Agri – Business”. Thus, collectivization and resource pooling has been the norm for sustainable agribusiness options. Farmers Producer Organizations (FPOs) have been identified as engines of change in agribusiness. In order to address the challenges faced by the farmers in making agriculture a profitable business, FPOs are being promoted with handholding support from the Government.

FPOs are agribusiness companies (registered under Companies Act 2013) promoted by farmers and primary producers as shareholders. This helps in collectivization of their inputs and resources thereby enabling them to access technology, inputs, credit as well as market thereby realizing the economic benefits from agriculture.

The core purpose of this division is to focus on formation, nurturing and strengthening of the FPOs as a profitable and sustainable business model through the application of scientific management principles such as branding, marketing, setting up a supply chain, operations management, financial management, value addition, processing, market linkage, digitization etc. NAF is increasingly focusing on equipping the FPOs and considers these collectives as a strategic tool to achieve the government's vision of doubling the farmers' income by 2022.

Broadly promotion of agribusiness and FPOs are done by - building rural entrepreneurship; linking SMF to integrated agri value chains; promoting agri enterprises and facilitating forward and backward linkages through credit linkages, produce aggregation, value addition and marketing linkage/tie ups

NAF has been empanelled as a Resource Institution (RI) by Small Farmer Agri Business Consortium (SFAC), Ministry of Agriculture, and Government of India as well as by NABARD as Producer Organization Promoting Institute (PoPI) for promotion of Farmer Producer Organizations (FPOs) in Tamil Nadu. Apart from the above, NAF has also been empanelled by SFAC, NABARD, NCDC and NAFED as Cluster Based Business Organization (CBBO) for promotion of FPOs under Central Sector Scheme for promotion of 10000 FPOs in Tamilnadu, Andhra Pradesh, Uttar Pradesh and Maharashtra. NAF has been promoting FPOs with support from Small Farmer Agribusiness Consortium (SFAC), Central & State Government, NABARD and World Bank.



55 FPOs
TNSFAC-Collective
Farming-Phase-1,2



26 FPOs



5 Districts



NCDC
Empanelled

127 FPOs across
38 Districts,
207 Blocks,
1947 villages



Empanelled



1 FPO



23 FPOs in TN,
MH, UP, AP &
PNY

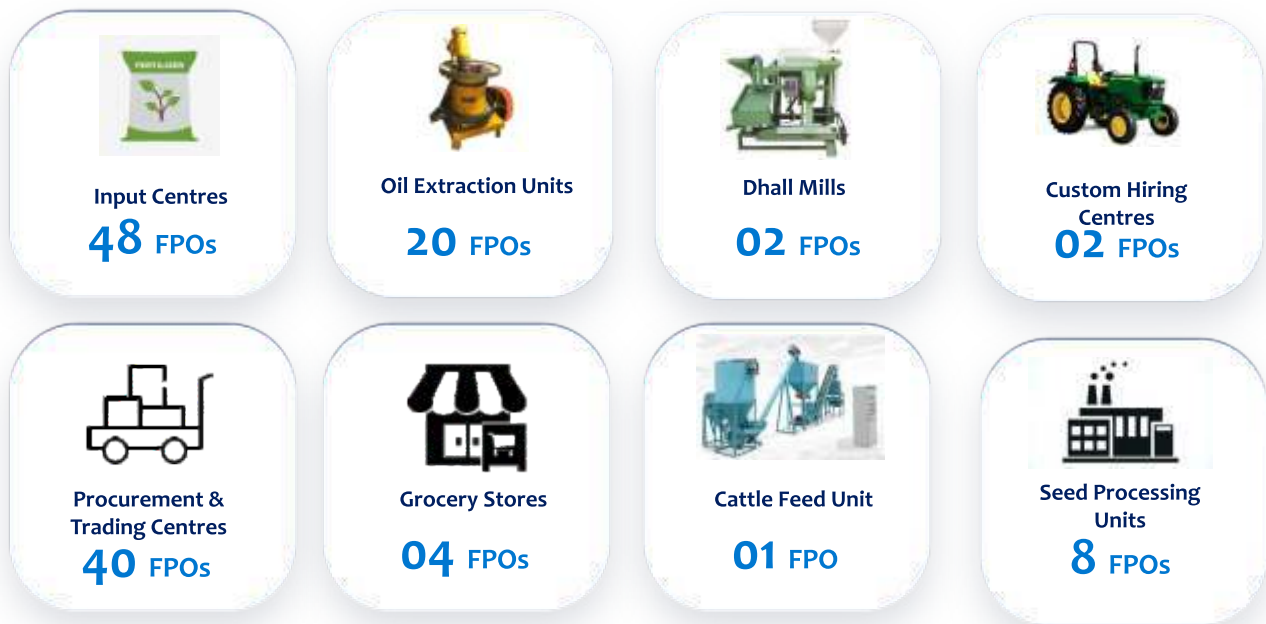


22 FPOs in
AP & TN



Business Operations Undertaken by NAF Facilitated FPOs

Agri-Business Development Division



Value Addition & Branding of FPO Products



FPOs promoted under Collective Farming Scheme of Government of Tamilnadu - Phase I

Based on the performance of the FPOs which were allotted to NAF earlier, TNSFAC allotted 23 more FPOs in first phase (18 FPOs in 2019 and 5 FPOs in 2020) under Collective Farming project. This was a project promoted by Department of Agri Business and Marketing, Government of Tamilnadu with an aim to form commodity groups and federating them as a FPO. Out of 23 FPOs, 21 FPOs are fully functional with varied business operations like input centre, seed farm, produce aggregation etc.

Mezzanine Loan of
INR Rs.10 Lakh from
Nabkisan to
Melmalaiyanur

Mezzanine Loan of
INR Rs.10.1 Lakh for
procurement of Oil
expeller machine
from Nabkisan to
Yelagiri FPO

Start up Grant for
Business
promotion

INR Rs.5 Lakh each
for 20 FPOs from
GOTN

Support to 20
FPOs to Apply for
Central Small
Farmers Agri-
Business
Consortium Equity
Grant

Rs.8 Lakh from
Agricultural
Engineering
Department to
Bodhidharman
FPO for Purchasing
Tractor

Promoted 23 FPOs
under Collective
Farming Phase-3, &
all have been
incorporated
successfully

FPOs promoted under Collective Farming Scheme of Government of Tamilnadu -Phase II

TNSFAC allotted 9 new FPOs to NAF in second phase during 2019-20 of which all have been incorporated during the lockdown period and share amount collection process has been completed across all the FPOs. 7 FPOs out of 9 FPOs are fully functional with varied business operations like input centre; cattle feed business, selling of rice bag, oil trading, and grocery shop etc.

FPOs promoted under Collective Farming Scheme of Government of Tamilnadu -Phase III

TNSFAC allotted 23 FPOs to NAF in the third phase during 2020-21, and the incorporation for all FPOs has been completed. Share money collection and business activity decision is under various stages of progress across the 23 FPOs

- Araniyaru CFFPCL availed working capital loan from for an amount of INR Rs. 2,00,000
- Bodhidharman CFFPCL availed scheme under TNMSDA for an amount of INR Rs.8,00,000



FPOs promoted under the Tamilnadu Small Farmer Agribusiness Consortium (TNSFAC), GoI / GoTN and NABARD (Phase I&II):

As part of agribusiness activities, NAF has been promoting Farmers Producer Organizations (FPOs) with support from the Small Farmer Agribusiness Consortium (SFAC), GoI / GoTN and NABARD. Four FPOs were promoted with support from SFAC in the first phase in April 2015.

Under the second phase, 6 new FPOs were sanctioned to NAF for promotion and handholding. These FPOs were formed and handhold between 2015 and 2018. Out of 10 FPOs promoted, all have commenced business activities.

Rajadesingh FPCL
Dhal Processing Unit

ThangaThamarai FPCL
Dhal Processing Unit

Valwil Sudesi FPCL
Business of millet-based snacks

Eriyurmanimutha FPCL
Input supply and edible oil business

Uthiramerur FPCL
Input Centre, Groundnut seeds and oil business

Ponneri FPCL
Input Centre and grocery business

Jarugumalai FPCL
Flower Trading

Alangayam FPCL
Cattle feed and cooking oil trading

Resahe FPCL
Vegetables trading

High hill tea FPCL
Tea Leaf trading

SFAC FPOs- Training and Credit linkages facilitated

S. No	Name of the FPO	Total Nos (TOT Trainings, FLD, exposure visit, capacity building)	Total Trained Beneficiaries	Credit Linkages Available	Grants, Schemes and Subsidy Available	Subsidy Amount Available (INR)
1	Raja Desingh FPCL	-	513	Working capital loan, milche animal loan	Equity Grant, MSDA, NFSM, SPU, NAF	1,09,40,000
2	Eriyurmanimutha FPCL	-	513	-	Equity Grant	10,00,000
3	Thangathamalai FPCL	-	513	Working capital loan, dhal mill	Equity Grant, MSDA, NFSM, SPU, NAF	1,10,39,000
4	Valwilli Sudesi FPCL	15	513	-	Equity Grant, MSDA, SPU	85,00,000
5	Uthiramerur FPCL	7	275	-	Equity Grant	5,00,000
6	Ponneri FPCL	7	250	Mezzanine capital	Equity Grant, TNRTP, NAF	10,80,000
7	Jarugumalai FPCL	7	351	Mezzanine capital loan, Working capital loan	Equity Grant-State, TNRTP (Seed), NAF	10,50,000
8	Alangayam FPCL	7	235	-	Equity grant verification completed, MSDA, solar drier	10,00,000
9	Resahe FPCL	4	115	Working capital loan	Equity grant applied, Working Capital, MSDA, SPU, Pure vending machine	11,00,000
10	High hill Tea FPCL	9	390	Mezzanine capital loan	Equity grant (state verification is pending); SEED (NAF)	8,00,000



Highlights of FPOs promoted under NABARD

NAF has promoted 10 FPOs with support from NABARD between 2015 and 2018. Eight out of ten FPOs are fully functional and currently engaging with various business activities.

S.No	Name of the FPO	Date of Incorporation	District	No. of villages covered	No. of shareholder	Business Activity
1	Lathur and Chitthamur FPCL	2/3/2016	Chengalpattu	43	500	Oil Mill, input center
2	Madurantakam and Atchirupakkam FPCL	29/1/2016	Chengalpattu	44	500	Input center
3	Gummidipoondi Goodluck FPCL	8/1/2016	Thiruvallur	8	500	Input Centre
4	Sholavaram FPCL	12/1/2016	Thiruvallur	19	500	Input Centre, Vegetable Trading
5	Marakanam Watermelon FPCL	21/1/2016	Villupuram	24	500	Input centre, groundnut trading
6	Olakkur FPCL	26/2/2016	Villupuram	39	500	Input center, grocery shop
7	Thellaru FPCL	11/2/2016	Thiruvannamalai	16	500	Input center
8	VeerarajendraChozhan FPCL	16/9/2016	Cuddalore	15	500	Milk collection center

NAF's Efforts in Facilitating and Promoting FPOs under NABARD in Tamilnadu



NABARD FPOs - Training and Credit linkages facilitated

S.No	Name of the FPO	Total No (Trainings, FLD, exposure visit, capacity building)	Total Beneficiaries Trained	Credit Linkages Availed	Grants, Schemes and Subsidy Availed	Subsidy Amount Availed (INR)
1	Lathur and Chitthamur FPCL	12	116	Working capital loan (Oil Expeller Unit)	Equity grant, SPU	65,00,000
2	Madurantakam and Atchirupakkam FPCL	12	96		Equity grant	5,00,000
3	Gummidipoondi Goodluck FPCL	12	116	Working capital loan	Equity Grant	5,00,000
4	SholavaramFPCL	12	101	Working capital loan	Equity Grant, TNRTP, CSR	22,50,000
5	Marakanam Watermelon FPCL	12	96	Working capital loan, Mezzanine capital loan,	Equity Grant	5,00,000
6	OlakkurFPCL	12	76	-	Equity Grant, CSR	7,50,000
7	Thellaru FPCL	12	136	Milche animal loan, working capital loan; Mezzanine capital loan	Equity Grant, MSDA	15,00,000
8	Veerarajendra Chozhan FPCL	12	76	Milche Animal Loan	Equity Grant	5,00,000

Kurinjipadi Women Farmers Producer Organization (CII - Blue star - NAF)

Women producers, who are often excluded or have their participation restrained in organizations, face additional challenges such as cultural and legal discrimination that prevent them from accessing productive assets, finance, education and technology. Establishing their own organizations or becoming more active in integrated organizations can help them overcome these constraints, increase their economic and social status and improve access to needed services. With this background, Women Farmer Producer Organization was formed in Kurinjipadi, Cuddalore District with only women farmers as shareholders. This is the first Women Farmer Producer Organization in the state of Tamil Nadu. This project was launched on 17th June 2019 at Kurinjipadi. This project is being supported by Blue Star Ltd, a leading Cold Storage Company through arrangements with CII.

- NAF has facilitated Milche Animal loan of INR Rs.7.60 Lakh from Canara Bank to 19 Women members of Kurinjipadi FPO under livelihood activities.
- NAF has facilitated establishment of input center by the FPO which was inaugurated on 16th February 2021.
- NAF has facilitated a Grant amount of INR Rs.6 Lakh from Tamilnadu Rural Transformation Project under Covid Assistance Package, to 4 Women Farmers Interest Group for the purpose of manufacturing organic manure.



FPOs promoted under TN Irrigated Agriculture Modernization and Water bodies Restoration and Management (TNIAMWARM) Project

This World Bank assisted project has been implemented predominantly in river basin areas of Tamilnadu wherein modernization of irrigated agriculture, promotion of water saving technologies etc were focused. As a part of sustainability of IAMWARM project, the Government is focusing on community strengthening and business development through promotion of Commodity Groups and federating them as FPOs. NAF has been selected as Technical Support Agency (TSA) by TNSFAC for providing handholding support to FPOs (formation, training and capacity building of FPOs on Governance, statutory compliances, business promotion and supply chain management activities) for these FPOs. NAF is extending technical support to 20 FPOs in 15 districts of Tamil Nadu state in the first year and 6 FPOs in 4 districts additionally from second year onwards.

Salient features / highlights of the project

- NAF has facilitated in arranging the start up grant amount of INR Rs.5 Lakh to every FPO.
- NAF has supported all the FPOs to arrange Share Certificates and distributed to all the Shareholders in the FPOs.
- NAF has facilitated Productive Investment Documents prepared for TNIAMP – Phase-1 – 24 FPOs and submitted to Government of Tamilnadu for INR Rs.20 Lakh; which has been received by every FPO for commencing business activities as per the Detailed Project Report.
- NAF has facilitated forward market linkage for Dhanya FPCL with an export agency for export of small onion in Dindigul district.

Business Activities of FPOs supported by TNIAMP

S.No	Name of the FPO	Date of Incorporation	District	No. of villages covered	No. of shareholders	Business Activity
1	TNIAMP 2019-2020 Dhanya FPCL	13/4/2020	Dindigul	7	1000	Onion Trading
2	IAMP 2019-2020 Mullainaathi FPCL	26/3/2020		8	1000	Input Center
	TNIAMP 2019-2020 Southuparai FPCL	20/3/2020	Trichy	8	1000	Input Center
4	TNIAMP 2019-20 Trichy FPCL	5/5/2020		17	1000	Rice Retail
5	TNIAMP 2019-2020 ViralimalaiPonnaniyar FPCL	19/3/2020	Pudukottai	16	1000	Rice Retail
6	TNIAMP SaathaiyarArulmihuKallazhakar FPCL	13/3/2020	Madurai	15	740	Paddy Procurement
7	TNIAMP GowsigaNathi FPCL	5/2/2020	Virudhunagar	21	809	Minor Millets Procurement
8	TNIAMP 2019-2020 Mamalan FPCL	24/2/2020	Kanchipuram	22	1000	Input centre, cattle feed, rice bags
9	TNIAMP Pambar Farmer FPCL	13/4/2020	Dharmapuri	15	1000	Maize procurement
10	TNIAMP 2019-2020 Sri Aranganthar FPCL	27/2/2020	Coimbatore	10	1000	Input centre, Coconut, banana, veg trading;
11	TNIAMP Lower Bhavani FPCL	13/5/2020	Erode	10	1000	Paddy maize procurement and paddy sale
12	TNIAMP PonnaiNadhi FPCL	5/3/2020	Nagapattinam	20	1000	Seeds Sales
13	TNIAMP South Indian FPCL	19/3/2020	Thiruvavur	21	1000	Seeds Sales
14	TNIAMP Pragatheeshwarar FPCL	3/3/2020	Thanjavur	17	1000	Input centre, cattle feed
15	TNIAMP Kumbakonam FPCL	23/5/2020	Thanjavur	19	1000	Input centre, rice bags
16	TNIAMP Vikatakavi FPCL	19/3/2020	Cuddalore	10	1000	Input centre, Maize aggregation
17	TNIAMP 2019-20 Perambalur Vellar FPCL	19/2/2020	Perambalur	9	1000	Maize aggregation
18	TNIAMP Lower Vellar FPCL	30/3/2020	Kallakurichi	8	1000	Paddy seed sale, cattle feed, black gram aggregation
19	TNIAMP Thamirabharani Pasumai FPCL	5/8/2020	Tuticorin	8	992	Seed Sales

TNIAMP FPOs - Training and Credit linkages facilitated

- A total of 11 trainings were organized for 20 TNIAMP FPOs during the year 2020 – 2021 benefitting 276 farmers across the state.
- A Startup & Productive investment grant of INR 25 lakh was arranged and provided to 19 FPOs and Startup & Productive investment grant & MSDA grant for INR 45 lakh was provided to TNIAMP GowsigaNathi FPCL.

Tamil Nadu Rural Transformation Project (TNRTP)

NAF has been selected as a Technical Support Agency (TSA) for a World Bank assisted project for extending support to Producer Collectives that have been formed by Tamilnadu Corporation for Development of Women Ltd (TNCDW), department of rural development & Panchayat Raj. Under this project, both on-farm sector and off-farm sector enterprises promoted under SHG programs are being upgraded to FPOs. NAF has won the contract for Region II covering 5 districts including Salem, Erode, Tiruppur, Coimbatore and Nilgiris.

NAF has been providing the following services to TNRTP FPOs in Tamilnadu

CAP Assistance: Issued COVID Assistance Package to the FPOs

Strengthening the existing Enterprise Groups (EG), Producer Groups (PG), by developing an online grading and mapping assessment tool for the FPOs

Value Chain Analysis: Value Chain Analysis has been completed for six commodities viz., Groundnut, Banana, Pulses, Goaterry, Dairy and Handlooms..

Developed a Grading tool which was completed along with all TSA (Technical Supporting Agencies

Participatory Growth Plans (PGP): The objective of this study is to develop inclusive development investment plans for the communities for enterprise promotion

Capacity Building Training module for Producer Collectives along with Techno Serve limited,



Market Linkage Arrangements Facilitated by NAF during the reporting period:

The various business opportunities for FPO were analyzed on the basis of value chain of major crops cultivated in this region. As a support service provider to the FPOs, NAF has arranged for market tie up agreement with the following companies (Retailer/Wholesaler) who have agreed to procure commodities from the FPOs promoted by NAF, thereby creating additional marketing channels for farmers to sell their produce:



Purple Patch Agro Solutions Pvt. Ltd.

All FPOs promoted by NAF are tied up with Purple Patch Agro Solutions. Based on market requirements, FPOs are in turn procuring and selling their processed commodities through Purple Patch Agro Solutions P. Ltd., They are outlet dealers and accept commodities only through the FPOs. In this connection, the company has procured an amount of INR Rs.1.12 Crores of Urad Dhal.

WayCool Foods and Products Pvt. Ltd.

WayCool Foods and Products Pvt. Ltd., is one of the leading organization having B2B and B2C facilities for various commodities like vegetables, fruits, spices and other edible products etc. They specialize in bulk procurement and sales from the farmers. They are currently procuring around 500 to 600 kgs of peeled garlic on a daily basis from Sholavaram FPO who also own a garlic peeling machine. Sholavaram FPO also outsources a part of the job to other traders on MoU basis to meet the order requirements.

Sastha Foods Pvt. Ltd.

Sastha Foods Pvt. Ltd., is one of the leading exporters for commodities like millets, grains, traditional rice, edible oil etc to USA exclusively. In this connection, they have procured 6 tonnes on a monthly basis amounting to INR 5 to 6 Lakh from the FPOs promoted by NAF.

Green Tatwa Agri-Tech LLP.

Green Tatwa Agri-Tech LLP, is one of the leading exporters based at Hyderabad – Telengana, for commodities like millets, grains, traditional rice etc to various countries. In this connection, they have procured some of the product samples from the FPOs promoted by NAF and price negotiation between FPOs and Green Tatwa is under progress.

Other Domestic Traders/Retailers:-

We are also facilitating market linkages with companies like Ansio, Kalpavruksha etc. for various commodities of the FPOs promoted by NAF. We are initiating the FPOs to start Input Centers on their own to facilitate the leading vendors like Stanes, Syngenta, IFFCO, Tata Rallis etc, the manufacturers of seeds, pesticides, fertilizers, to support the farmers at the right time with quality and best pricing on the availability of the products under one roof.

Project KANCHI (Kisan Advancement through Cashless Innovation)

NAF has developed an innovative multi module digital platform to digitize FPO business operations as well promoting financial inclusion KANCHI (Kisan Advancement through Cashless Innovation). Under this, several modules are being worked upon like the Farmer Data Repository (FDR), Farmer Investor Services (FIS), Milk Aggregation Portal (MAP) and Lending and Recovery System (LRS), Input Center Digitization (ICD), Farm Lease, Product Aggregation (PA) & Warehousing Services (WHS) were developed.



i. MAP Enhancement: MAP has been upgraded to suit the requirement of milk aggregators of AAVIN, wherein automatic milk analyzer and weighing machines are used. The enhanced system will capture data directly from the milk analyzer and facilitates aggregators to generate payment advice.

Total Amount of 15,56,378.80 litres of milk was collected through Milk Aggregation Portal of Milk Producers Group in Uthiramerur Block and an amount of INR Rs.52,916,852 has been disbursed to the farmers through KANCHI's MAP during FY 2020-21

ii. Input Center Digitization (ICD) In order to capture the business operations of input centers run by FPOs, ICD module has been devised and has been rolled out. This creates a stock management and invoicing system. This will also facilitate cashless payment system through integrated machine linked with Apna Pay. We have transacted an amount of INR Rs.1.22 Crore using Apna Pay in the first year.

INR Rs. 1.48 crore worth of Agriculture inputs sold by our FPOs in Tamil Nadu and transactions digitally captured in ICD Portal of KANCHI during FY 2020-21.

iii. Farm Lease Module: Similar to ola and uber taxi services which are successful as aggregator models, KANCHI has developed an additional module, namely the 'Farm Lease' wherein the farmers' requirement of farm machineries like tractors and implements, harvesters etc., can be booked through mobile with payment made possible through mobile banking. This is in the pilot stage of field testing.

iv. Produce Aggregation (PA), Warehousing system (WHS), e-Commerce (KANCHI KART) and Revenue and Expenses Management (REM) modules are in place in order to facilitate digital transactions of FPOs, These modules will help track the businesses as well as smoothen the business processes besides facilitating compliances for FPOs in the long run. All these modules are in the development stage wherein ERD (Entity-Relationship Diagram) has been completed and prototypes are being generated along with user stories

FPO Digitization Project Supported by BNY Mellon through United Way Worldwide

The project is aimed at empowering the Farmers Producer Organizations (FPOs) using digital financial inclusion platform to enable them to digitize their business operations as well as create verifiable data for access to credit, market, inputs and other services thereby increasing the profitability and economic empowerment of small farm holders who form part of those FPOs as shareholders.

4700 farmers have been completely e-profiled and share certificates allotted including digital share management. 3 FPOs input centers have been digitized. Ponneri FPO has transacted input business of INR 17.21 lakh on seeds sale and Alangayam FPO has transacted INR 0.74 lakh on cattle feed. Using Lending and Recovery system, 90 members' loan schemes worth INR 40 lakh have been digitized for Jarugumalai FPO. Out of INR 40 lakh loans disbursed, 27 lakh has been repaid to the bank facilitated by digital platform under the project thereby creating credible transaction history. Resehe FPO has digitized their input sale worth INR 26.35 lakh. Under Produce Aggregation portal, 6.6 tons of groundnuts worth INR 4.65 lakh by Alankayam FPO, 78 tons of flowers worth INR 51.33 lakh and 4.8 tons of vegetables worth INR 1.39 lakh have been transacted.

The project has impacted the farmers positively in enabling them to

- Manage their share allotment and share certificates,
- Billing and stock maintenance has been made easy using the digital platform.
- Loan repayment schedule and alert for repayment has been generated.
- Digitization of aggregation of produce from both member and non member farmers and market connect has been established.



Training and Capacity Building Division

NAF has been focusing on skill development in rural areas to improve employment opportunities for rural youth and communities, reduce poverty, provide livelihood opportunities, enhance productivity and promote environmentally sustainable development.

NAF - Center for Rural Development was established to provide training and capacity building for farmers on technology based agriculture to transform the direction of the Indian agriculture from “production-oriented” to “market-oriented. We have strived to achieve this, by developing an integrated and innovative rural development model to equip farmers with technology which in turn increases the productivity per unit area. The prime objective is not only to increase the ability of farming community to innovate and adopt new technologies in agriculture but also to ensure continuous improvement in economic, environmental and social performance of the rural community. Training is imparted on “technology-oriented” and “participant-oriented” modes to various stakeholders of agriculture and rural development including farmers, youth, agripreneurs, women, socially excluded, functionaries of NGOs, water users, producer groups, input suppliers, bankers and students among others.

Skill upgradation of agro service providers for Economic Empowerment of Small Farm Holders in Tamilnadu, Supported by Pershing India Operational Services Pvt. Ltd., A BNY Mellon Company

The objective of this training was to enhance the knowledge and skill sets of agro service providers/farmers to enhance the crop productivity and profitability of small farm holders thus enhancing their livelihood. The program aimed at developing the hard and soft skills of

farmers/service providers by providing training on handling machineries, attending minor faults at field level, preparation of bio inputs with available local inputs and next set of training given to farmer producer company shareholder's to develop their soft skill in accomplishing timely compliances, effecting good governance and selecting sound business plan which in turn enhance the profitability of small holder farmers by converting them as entrepreneurs and facilitating them as stakeholders in value chain markets.

Project Activities:

- Training on preparation of bio inputs.
- Training on repairing and maintenance of tractor.
- Training and repairing of power weeder.
- Trainings on "Developing professional skill set of BODs and CEOs for effective Management of FPO".
- No of beneficiaries capacitated: 334 from 15 districts of Tamilnadu.

Sustainable Development Project (SDP) Supported by NABARD

The Sustainable Development Projects aims to build the capacities of rural stakeholders through various need based training and awareness programs, like strengthening of Village watershed committee, self-help groups, book keeping and record maintenance and other agri technical trainings. A total of 424 beneficiaries have been trained over the past 2 years under this project

Project Activities:

- Effective function of VWC and other Community based Organization.
- Effective functioning of SHG & Federation for holistic development.
- Financial inclusion through SHG in watershed Village.
- Awareness program on government schemes.
- Awareness on credit facilities in bank.
- Training on Cattle management and feed production.
- Exposure visits to KVK, FPC.

Outreach of the Project

• No. of Household in the watershed	:	882
• No of beneficiaries under training	:	905
• No of beneficiaries under exposure visits	:	263
• No of beneficiaries under demonstration	:	46
• No of beneficiaries under FPO	:	255

Outcome of the Sustainable Development Project

- The Village Watershed Community, Self Help Groups, Farmer Clubs, Joint Liability Groups and Farmer Producer Organizations are functioning efficiently.
- VWC members strengthened to take over the watershed management.
- SHG members were capacitated to maintain records of daily activities and savings.
- Easy access to officers and experts from line departments, KrishiVigyan Kendra, Research stations and Universities for quick transfer of technologies.
- Access to the banks to facilitate financial inclusion and crop and other loans etc. and regularized repayments.
- The Farmer producer organization have been established and have begun functioning effectively.
- Millet production has been enhanced through FLDs.
- 20% of the farmers produce and use organic formulations in their fields and are reaping the benefits of low cost of production.
- 19 Vermi compost units are functional.
- 8 Azolla units serve as feed for country chicken and cattle.
- Nearly 10% of the SHGs were connected with banks for additional loan support.
- 100% of the families were facilitated with bank account opening.
- Many of the farmers have drip and sprinkler irrigation devices in their field and produce quality crops, flowers, vegetables and fruits.
- Due to crop diversification, more number of farmers are cultivating millets and pulses in their fields.

Skill Development for Rural Women Entrepreneurs Supported by BNY Mellon

Promotion of micro-enterprises and various income generation activities is an important aspect of women empowerment. Although it is extremely challenging to find remunerative self-employment, there are enormous untapped opportunities in the rural sector. These include both on-farm and off-farm opportunities.

Fifteen women were trained in the skill of jute bag making. A total of 66 beneficiaries were trained over the past 2 years in jute bag making. Many women started their own business venture as a collective group formed by SHG. They are getting many orders from nearby offices, schools etc. and are successfully running this enterprise.

Objectives:

- To improve the entrepreneurial skills of rural women.
- To improve the food safety standards of rural food enterprises run by women.
- To promote off farm and non-farm business activities among rural women.



Training and Capacity Building Division



S.No.	On farm & Off farm activity training	No. of trainings
1	Training on Preparation of bio inputs	3
2	Training on Mushroom Production	2
3	Training on Low cost cattle feed formulation	2
4	Training on Backyard poultry	3
5	Training on Ethno veterinary practices	3
6	Training on IFS - Honey Bee production, Vermi, Dairy, Poultry, Fish culture	2

S.No.	Non Farm activity Training	No. of trainings
1	Training on Value addition of agriculture produce	2
2	Training on Jute bag manufacturing	4
3	Training on FSSAI - FoSTaC (Food Safety Training and Certification)	3

Soft Launch of Tailoring Training Centre:

The Rotary Club of Madras Coromandel had sanctioned the “Non-farm sector Training – Tailoring for women” under Kuppachiparai Watershed Plus project. The tailoring training programme was inaugurated on 22.1.2021 by the chief guest RTN. Aroiyaraj, President of Krishnagiri Rotary Club in the presence of RTN. Pramod - Member of Krishnagiri Rotary Club, RTN. Venkatesh Gupta - Member of Sankagiri Rotary club, Mr. K.P.Krishnan - Presiednt of Kuppachiparai Village watershed committee, Mr. Mageswaran - Joint Director of National agro foundation along with the villagers and field team of NAF.



- **BNY Mellon Project:** Seven training programs have been conducted for SHG women entrepreneurs under sponsorship of M/s. BNY Mellon at Chennai and districts like Thiruvallur, Salem, Pudukkottai, Villupuram, Cuddalore, Dindugul and Pudukottai etc. Totally 265 women candidates were trained as Food Safety Supervisors.

Out of the 265 candidates, 188 candidates are SHG members under Mahalir Thittam. They have registered with FSSAI and are operating small food enterprises and supplementing their family income. This training has enhanced their knowledge on food safety and also created awareness on the increased hygiene aspects to be maintained in the context of covid pandemic.

CSR Watershed Team Refresher Workshop

A customized workshop was designed to engage the CSR watershed staff on various elements of work life at NAF. Thirty five CSR watershed staff from various locations of India participated in this motivational workshop. Aside from reviewing performance of various teams, the workshop also dealt with building new knowledge in aspects such as community mobilization, social development and sustainability of projects, technical aspects of watershed development and management of staff, in addition to team building and motivation exercises for the team.

Workshop cum Refresher Training For FPO Staff

A customized training cum workshop was organized for the 35 staff in Agri business division, to motivate them as well as to update them on ROC compliances, registration of FPC, auditing compliances, Business planning, Preparation of DPR, leadership and time management. This workshop was also an opportunity to facilitate peer learning and share and exchange knowledge and ideas to help improve the team efficiency.

Development of Kiosks for Farmers' Services – Project Supported by BNY Mellon

This project is being supported by BNY Mellon and will be implemented in Tamilnadu initially and up scaled to other project locations in the future. The project aims at creating a knowledge management kiosk to address the requirements of the farmers in terms of technical information, market information, weather advisory, details about various schemes of state and central governments for farmers welfare, stories of successful farmers, visual farm sector skill development modules, details on environment protection, soil health management, natural resource management and other relevant details for the farmers.

The kiosk will be linked with FPO so that the member farmers of the FPO will get right kind of farm advice and support services at right time. Moreover, the latest technologies in farm management could be disseminated to large section of farmers through this kiosk. This will also act as a mini ATM for soil related services. Promotion of farm skill development will also be done through the kiosk.

The basic architecture of kiosk has been completed and testing of the prototype is under way along with content development.



Laboratory Services Division

The Laboratory Services Division has been widely recognized and is accredited with ISO/IEC 17025:2017 standard by NABL, Quality Council of India. It is actively engaged in providing quality and affordable soil, food, water and organic fertilizers testing services to various stakeholders and also extends services to research scholars and students from various departments of agriculture, food technology, bio technology etc from different universities.

The NAF R&D Centre is an empanelled training partner for Food Safety Training and Certification (FOSTAC) by FSSAI since 2018. Food Safety Supervisor training programs are conducted at three levels – basic, advanced and special in various sectors like manufacturing, catering, storage and distribution etc. Target participants are food handlers, food safety supervisors, students, professionals and other persons intending to enter the food industry.

Soil Testing Laboratory Services

Analytical Services:

- NAF Soil Testing Lab has been providing comprehensive soil health diagnostic services for agriculture development for the past 20 years. During April 2020 to February 2021, 2337 Soil samples, 109 water samples and 854 other samples (compost, leaf, metal content soil for texture etc.) have been tested.
- Apart from samples from Tamil Nadu, soil and other samples from other states - Maharashtra, Kerala, Karnataka, Andhra Pradesh, Haryana and Utter Pradesh were tested during this period.

- Out of 1434 samples, 834 Soil samples for NABARD Climate Proofing Projects, 315 soil samples for CSR Projects & Watershed Projects, 226 soil samples from Soil Mapping Project, 550 samples from HDFC Project and 422 Soil samples for other customers were tested during the current year.

Training / Internships:

- Five students from Rajalakshmi Engineering College and six students from Vels University (VISTAS) are doing their final year project work on microbial degradation/transformation of heavy metals in contaminated soil and water/effluent at NAF Soil Testing Laboratory under the guidance of NAF scientists.

Food Testing Laboratory Services

The Food Testing Laboratory at NAF was conceptualized to provide analytical services to the small and medium scale food industries; help in providing quality to the consumers and raising the general standard of quality particularly in the small-scale sector.

Analytical Services:

- Accredited with ISO/IEC 17025:2017 for Chemical Scope, the food testing lab has been carrying out Analysis of Food products for compliance to FSSAI Standards & Nutritional Analysis for Labeling Purposes.
- During July 2020 to March 2021, totally 352 food samples comprising of 305 Chemical analyses, 45 Instrumental Analysis and two Microbiological Analysis samples were analyzed.
- The analytical services are also being extended to FPOs for testing the food grains and Edible oils, as part of their business ventures.
- Instrumentation (HPLC & GC): Validation of test procedures has been carried out for Preservatives, Artificial sweeteners, Phenolic compounds and Caffeine & Inter Laboratory Comparison has been initiated and is on the verge of completion.

Advisory Services:

- Advisory services for setting up food processing industries at all levels like developing prototype products customized to the needs of clients, standardizing quality parameters, preparing bankable project reports, erection and commissioning of machinery and standardizing production etc. is being extended to the food industries since Jan 2021.

Academic Services:

Partnership with Anna University:

- NAF Food Testing Lab is Adjunct Laboratory for Anna University's B.Tech and M.Tech Food Technology Programs.
- Chemical & Instrumental Testing Services are also extended to students who are doing their final year projects through Anna University
- M.Tech Food Technology students' Instrumental analysis sessions have been conducted at NAF Lab. 24 students participated in the sessions.

Partnership with IGNOU:

NAF Food Testing Lab is a registered Learner Support Centre (P) for IGNOU's PG Diploma in Food Safety and Quality Management since 2013.

- Chemical and Microbiological Online Revision sessions were conducted for IGNOU PGDFSQM batch 2019.
- In July 2020 session, 44 students have registered for the program. Theory counseling sessions commenced on 13th March, 2021.
- Pending Chemical Guided practical sessions for July 2019 batch, which could not be conducted due to Covid, are being conducted since 1st week of March 2021.

Training/Internships/University projects:

- Two students of M.Sc Food Technology and Management from MOP Vaishnav College for Women have carried out their Internship including Mini Project in NAF.
- Two students of B.Tech Bio Technology from Sathyabama University, two students from Rajalakshmi Engg. College & two students from St. Joseph's College are carrying out their Final year project with NAF.
- One student from SRM University is utilizing the lab for his final year project.

NAF a FoSTaC empanelled Training Partner

- National Agro Foundation is empanelled as Training Partner (TP) for Food Safety Training and Certification (FOSTAC) by FSSAI since 2018. FSSAI conducts trainings at 3 levels – basic,

advanced and special through empanelled TPs. Target participants are food handlers, food safety supervisors, students, professionals and other persons intending to enter the food industry.

- During this year, three FoSTaC - COVID 19 Online Awareness Free training programs were conducted for Food Business Operators. Two Advance Manufacturing Food Safety Supervisors (FSS) – Online session & one offline session was conducted. A total of 20 candidates were trained as Food Safety Supervisors.
- Basic Catering FSS Training programmes have been conducted for Noon meal Scheme organizers under TN Social Welfare Department. 150 noon meal workers from various Chennai Corporation Schools participated in the training.
- **AVT Project:** Three FSS training programs on Street Food Vending have been conducted at Chennai under the sponsorship of A V Thomas & Co. Ltd. Totally 113 candidates have been trained as Food Safety Supervisors. Objective of the training was to create awareness on the food safety aspects and hygiene practices to be followed by street vendors as per FSSAI regulations. The street food vendors upon completion of the training were provided with a Food Safety Display Board and a hygiene kit comprising of apron, disposable plastic gloves, washable caps, duster cloth and antiseptic soap etc, to inculcate hygiene practices amongst them.



Recognition as Scientific and Industrial Research Organization (SIRO)

NAF has received recognition as a Scientific and Industrial Research Organization (SIRO) by the Department of Scientific and Industrial Research (DSIR), GOI for the period upto 31.03.2023.



The R&D division strives to keep abreast of the latest dynamics in the development sector and propels scientific research in fields of food, agriculture and environment, thereby contributing to the knowledge domain as well as pioneering the dissemination of this knowledge in palatable form to the drivers of development across the country. Of the many functions, that the division plays, its core being able to translate scientific know how into practical and functional inputs for the farmers, thereby being able to customize best farming practices, encapsulate best agri technologies for progressive farmers, promote technology update and motivate behavior change through impactful learning methodologies. It also undertakes field oriented research projects on soil health, integrated remediation of contaminated soils using phytotechnologies, climate smart agriculture, new food product development etc,

Research Projects

Under the research theme “**Safe Food from Clean Environment**” formulated for the year 2020-21, different research experiments have been undertaken by NAF Lab as given below:

- **Soil Mapping for Sustainable Agriculture:** Till now 226 soil samples had collected from 10 villages and analyzed for various soil parameters. Preparation of digital soil fertility maps for the 10 villages is under progress.
- **Development of Novel Products from Cow Urine:** Distilled cow urine and enriched cow urine have been developed and seed germination test has been completed using the developed products. Work regarding the development of pellets of cow urine is under progress.
- **Mitigation of entry of heavy metals in to the food chain:** Various types of biochars were collected and the adsorption/desorption study with respect to different heavy metals as well as biochar was initiated. The adsorption of Cr with respect to all the three types of biochar has been completed. On the other hand, a multi-metal adsorption study has also been initiated to reduce the experimental time.
- **Assessment of heavy metal accumulation in fruits and vegetables and its impact on their phytochemical properties:** Vegetable samples from City markets are being processed and analyzed for heavy metal content.

New Food Product Development:

- **Development of Millet Idly:** The products such as Idly batter and Ada dosa batter have been developed through five different trials, Trials with variation of composition of ingredient is in progress to improve the fermentation of the batter and its texture.
- **Development of garlic powder and formulation of garlic buttermilk:** Immunity boosting buttermilk with garlic powder is being developed.
- **Development of value added products from Carrot, Beans and Peas tidbits:** The following products are under development in this project.

- a) Development of Masala mix with dehydrated carrot, peas and beans.
- b) Extraction of carrot extracts and analysis of beta carotene content.
- c) Ready to eat carrot halwa preparation

DST-SERB Project:

- DST – SERB funded ECRA Project entitled as “An Integrated Remediation Approach for Chromium Contaminated Soil and Waters in Vellore District, Tamil Nadu” has been completed with the total budget of INR Rs. 46,29,800/-

Salient findings of the project

- The results of the laboratory, pot and field experiments consistently have shown that the application of bio amendments to the Chromium (Cr) contaminated soil enhanced the bioavailability of Cr in the contaminated soil.
- After soil application, the bio amendments form complexes with fulvic acid and humic acid fractions of Soil Organic Matter (SOM). While fulvic acid complex would enhance the bioavailability by mobilization of Cr ions, the humic acid complex results in immobilization of Cr and enhances the adsorption of Cr ions on soil exchange sites.
- The enhanced bioavailability of Cr (as evident from the increase in water soluble and exchangeable Cr) facilitates greater absorption of Cr by plants. The higher Cr content of below ground biomass of chrysanthemum and cumbu napier provide evidence for this. It is also expected that due to the decomposition of bio amendments various organic acids are produced resulting in reduction of soil pH. Some of the insoluble Cr precipitates and would increase the bio availability of Cr and thus greater removal of Cr by plants.
- The other benefits of bio amendments include improvement in soil physical characteristics and enhancement of soil action exchange capacity besides adding nutrients to the soil, which favors better growth and biomass production of plants.
- Thus, the study has demonstrated that a phyto remediation strategy could be developed by in integrating bio amendments and hyper accumulators (chrysanthemum and cumbu napier) for remediation of Cr contaminated soil.

Publications:

- A research paper entitled Soil Fertility Evaluation to Adopt Climate Smart Agriculture in Mambattu Village, Maduranthankam Block of Kanchipuram District, Tamil Nadu, India has been accepted for publication in the scientific research journal Nature Environment and Pollution Technology. The paper is to be published in Vol. 20, No. 2 (June), Year 2021.
- A research paper entitled Stability and Usability of Natural Colourant from *Opuntia ficus-indica* in Food Products has been published in International Journal of Food Science & Technology (IJFST) Vol. 10, Issue 2, Dec 2020, 27-36.
- A research paper entitled Studies on an alternative method for preparation and fermentation of idlis made from Proso Millet (*Panicum miliaceum* L.), Horse gram (*Macrotyloma uniflorum* (Lam) Verdc.) and Fenugreek (*Trigonella foenum-graecum* L.) has been accepted for publication in the Asian Food Science Journal.

Client Projects:

The following client projects have been completed as a part of the industrial consultancy services during the year:

- Sonomone Food Products (Pappad) - Standardization and finalization of Pappad production using ingredients supplied by the client for their large scale production.
- Mazeco Food Products - Preparation and standardization of fruit juices with nature identical flavors with added basil seeds for large scale production.





Social Development Division

Social Development is at the core of every project or intervention that NAF undertakes, creating dynamic, vibrant and sustainable rural communities who work in the spirit of cooperation, equity, equality and collective ownership. NAF strongly believes that rural prosperity can be achieved through effective participation of rural communities in the management of their own social, economic and environmental needs.

Most rural communities are in transition, taking on the new globally inflicted challenges and are at cross roads of development. Despite the many constraints of lack in infrastructure, growth and opportunities, rural communities have proven to be resilient in times of challenges and have come together to display skill and leadership.

NAF has adopted an inter disciplinary and inter sectoral approach to address the diverse social dynamic in play in rural India, by, organizing the rural people into grass-root level community-based institutions, and encouraging informed decision making, equal participation by women and demand driven development.

NAF is promoting and nurturing various community-based institutions like Farmers Clubs, Self Help Groups, Joint Liability Groups, Farmers Producer Organizations, Farmer Producer Companies, Water User groups, Watershed committees etc. for inclusive decision-making and collective-action.

These institutions has helped the communities in achieving a sense of ownership for the development interventions, accumulation of capital & resource mobilization for institutional growth, ease-of-access to government schemes, gender equality and other social benefits.

Focus Areas:

- ★ Promotion of Community Based Institutions
- ★ Common Resources Management
- ★ Awareness Generation
- ★ Women Empowerment

Highlights of NAF – RF – Supported Activities

NAF has been at the forefront reaching out to marginalized sections in rural areas during the pandemic, providing not just financial support, but handholding support as well to women and farmers to help build their lives during the crisis period. Rebuilding livelihoods has been a major focus during the pandemic, especially empowering women through financial inclusion projects, income generating projects and micro entrepreneurship, thereby ensuring that new streams of income are sustained and people are able to cope with sudden loss of mainstream incomes. Some of the initiatives are listed below..

- Provision of Sewing Machine to the SHG for entrepreneurship Initiatives
- The SHG women undertook the task of stitching masks during the Initial COVID 19 period and earned a good income from this activity
- Masks were provided to Government offices like Police Station, Banks, Hospitals, Block Development Office and the general public.
- The self help group received jute bag manufacturing orders periodically from NAF
- NAF has also given the mask orders for 66000 masks, which will fetch them a good remuneration.
- NAF facilitated INR Rs.7.2 Crore bank loan linkages to the SHGs to combat the losses incurred during the COVID 19 period.
- e-seva center service was enabled to cater to the needs of the poor communities in rural areas.



A Ray of Hope in Difficult Times - Women SHG Members turn COVID Warriors



Women SHG members expressing their gratitude for this opportunity to help during crisis with the support of the CSR wing of BNY Mellon.

Invaluable Women Resources Builds Social Capital In Difficult Times Of Covid 19

The Covid 19 crisis has forcefully confined 1.3 billion Indians to their homes, in an unprecedented 40-day lockdown by the Nation in an attempt to defeat the corona virus. As a curse to mankind, it has caused irreparable damages to the economy across the globe, especially in India. It has left in its wake disastrous consequences and propelled people and the global economy in quarantine.

The Women Self Help Group movement began 15 years ago, to transform the lives of women tremendously. It was game changer for the socially, economically and vulnerably backward women, especially in rural areas. For the first time, women came together to recognize their needs, understand their potential and value their contributions within the household, and the society at large. They were able to understand, the power within them to effect change in their communities and experienced empowerment through participatory decision making processes, the feeling of involvement in their communities and their own development has helped sustain this movement till date. These voices and helping hands have only been growing stronger and more resilient over the years and they have taken control of deciding the course of their development.

In these extraordinary times, when we are all united in our fight against the Covid 19 virus, these women's groups are playing a critical role," said Junaid Ahmad, the World Bank's Country Director in India. It is true the collective action and strength of Women SHG's has come to limelight again.

Actions Speak louder than words is true of a small group of 15 women, hailing from Illedu, a remote village, in Chengalpattu district of Tamilnadu; who came together to turn COVID warriors. Using their skills, they began to produce 5000 safety masks in a week and silently went about creating awareness among the vulnerable rural communities in remote villages. They

were instrumental in saving the lives of many, through their efforts of distributing masks and creating awareness about this deadly virus.

These women a year ago (2018-19) were trained by National Agro Foundation supported by the CSR funding of BNYM under **“Skill Development Training For Rural Women Entrepreneurs”**. These women are from economically under privileged section of the society, and are made further vulnerable by the nature of being destitute, physically challenged, older unmarried single women. They hail from a remote village in Tamilnadu, where they earned their livelihood either as agricultural laborers or as MNREGA daily wage labor. National Agro Foundation played a crucial role in changing the lives of these 15 women, through its focused skill development and livelihood intervention program. By selecting the most vulnerable and weaker section in the society, NAF has given them a second chance at life with dignity.

They were brought together for training on Jute bag making for a period of 15 days at the Center of Rural Development Campus, 100 kms from Chennai. The women showed not just skill but commitment as well and maintained a strict attendance and time. They learnt to stitch and manufacture 15 variants of jute articles.

Within a week after completion of training, 5 women started their own Jute bag manufacturing unit by taking orders from school teachers and schools to stitch jute hand bags, lunch bags and water bottle pouch etc. This entrepreneurial spirit just displays, that with the right opportunities and encouragement, women do have the power to change their lives and their communities. Their enthusiasm towards starting an enterprise to earn a better and decent livelihood within village without compromising their household duties, has earned them respect in their communities and given them a sense of financial freedom and choice to engage as community leaders and examples for other women in their community.

In a rude shock to the entire Nation with the onset of the global pandemic of COVID 19, their livelihood was at stake, many people lost their jobs, their sources of income due to the lockdown. Most of the community members being daily wage laborers and fall under the unorganized work force, didn't have a choice, but to stay home with no access to any source of income to feed their families

It was at this critical juncture that BNY Mellon in association with NAF provided a ray of hope to these women SHG members. They were given a job order to prepare cloth face masks. The women were only too happy to be involved in this great cause against this deadly virus and came together to use their skills and fulfill their commitment. They completed the order of manufacturing 5000 face masks within a week.

Each woman earned about INR 2000 in 7 days, while the grim reality of dependence and scarcity hit the other families in the village as they queued to get their INR 1000 for their family card. Access to finance or earning an income in these trying times is unimaginable for the

remote community of unorganized workers, however, these women have been instrumental in not just aiding their families but even their community members by showing the way of providing face masks and creating awareness in their own ways about COVID 19.

This has been made possible with the generous support of the CSR arm of BNY Mellon and the field team of National Agro Foundation for their advice and support on ground.

This is Ms. Sivaranjani, aged 32 years; W/o.late Mr.Jany (Chennai), a widow. Three years back, she lost her husband and was left with a five year old daughter Though she completed her DMLT, she could not go out in search of a full time job, as she had to take care of her infant child.. She readily, participated in the skill training provided by BNYM and honed her skills in tailoring. She now earns a decent amount to provide for herself and her daughter without



having to depend on her family members or outsiders. She proudly volunteered to become a COVID warrior, to show her solidarity against this war to control the spread of this deadly virus and has been part of the team stitching face masks for the community and creating awareness amongst her peers.

This is Ms. Sudha, D/o Ezhumalai, 38 years, a physically challenged single woman. She is unable to sit for prolonged periods of time due to the deformity in her legs, which causes much discomfort and pain. She is educated upto class X, but was unable to pursue further education due to many challenges.



She too attended the skill development training organized by NAF at CFRD and benefitted from learning new skills. She has proudly come forward to become a COVID warrior, by rendering her skills to stitch face masks for the community and contribute an income to her family through this venture. Women like Sudha are frowned upon in our society for being a burden on their families and being unproductive, however; even in these difficult circumstances, she has proved herself to be capable of earning INR 1500, competing with other women who are physically fit and contributing to the income of her family through productive means of livelihood. She expresses her whole hearted gratitude to National Agro Foundation and BNY Mellon for their support and encouragement in changing her life and showing her a way ahead.

Dairy farming Business Loan to the Rescue during COVID

Mrs.K. Valarmathy W/o.Mr.Krishnamoorthy, aged 41 years is residing at Amaindhakaranai Village in Kokkaranthangal Watershed. She lives in SC quarters with her 2 kids and husband who is an alcohol addict without proper job/income. Due to this reason, she has suffered a lot in maintaining the family and her kids' educational expenses. This was her situation four years ago, prior to the interventions of L & T Technology Services & National Agro Foundation in the location. As a part of the Watershed Management programme, through the Income Generation Program, she has received INR Rs.30, 000/- in September 2020, for buying a milche cow. With this financial assistance and proper guidance from the NAF team, she worked hard to earn an income through sale of milk and provide for her family.

She collects about 4 litres of milk per day and earns about Rs.160/- per day. Mrs. Valarmathy has earned Rs.4000/month apart from the expenses incurred in maintaining the cow. Her lifestyle has changed positively and her confidence has increased knowing that she is able to provide for her family and her children. She is extremely grateful to LTTS and NAF for creating a sustainable livelihood option for her and is paying her EMIs responsibly and on time. She wishes to expand her business slowly and grow into a fully fledged dairy unit one day.



Providing alternative Income Sources for Vulnerable Women in the village

Mrs.M. Minnal W/o. Mr.Mani, aged 41 years is residing at Arcadu Village in Kokkaranthangal Watershed with 2 kids and a physically challenged husband who is unable to support her financially. Hailing from ST community; she has been living in isolation from other people and dependent only on the NREGA scheme. Apart from this, she would go as a daily wage laborer, on demand basis only. Due to her societal status, she had been denied with loans from local financiers. After joining as a member in the Dr. Ambedkar Women's SHG which was a joint venture by NAF and L & T Technology Services, she placed her request to take up goat rearing as a source of income for her. Based on this she was facilitated with a loan amount of INR Rs. 20,000/- during October 2020.



With the loan provided she had purchased 4 goats (2 male & 2 female) that reproduced 4 off springs. By this way, her assets have increased in a stable way. She can easily sell the offspring to earn a steady source of income and support her family, her children's education and other needs. She is very grateful to LTTS and NAF for this opportunity as she is now earning within the village itself and is not dependent on others for the same.

Improvement in Yield and Soil Conditions through Lean Farming

Ananta Sakharam Pilane from Katwadi village, Velha Taluk, Pune is a 38 years old farmer who lives with his 6 family members. He is a traditional wheat growing farmer who was not aware of interventions like soil testing, recommended use of fertilizers and pesticides or other pest management strategies. This had cost him a lot for the chemicals and fertilizers and less remuneration compared with the input cost. Here comes the role of National Agro Foundation in support with L & T Technology Services where proper guidance on soil testing, using recommended dose of fertilizers, installing yellow sticky traps and purchase of bird perches that help in preying the worms were given and implemented. With this he was able to increase his income by 22 per cent than usual with same wheat crop.

Ananta Sakharam Pilane, has now witnessed for himself the benefits of following a scientific method of cultivation and is eager to adopt this practice for future across his other crops as well. He is now eager to get his soil tested regularly and follow the scientific instructions to avoid paying excessive amount for inputs and preserve the beneficial soil bacteria for better yield and profits. He wishes that many more farmers are roped into this project and can avail of the benefits of LEAN Farming technologies as well.



East Godavari Farmer Fetches Best Yield in Paddy

National Agro Foundation implemented Lean Farming Project in East Godavari District of Andhra Pradesh during Rabi 2019 with focus on Paddy which is the major crop in East Godavari. The district witnessed large scale exploitation of fertilizer overuse in the fields, thereby making the land unproductive and damaging the integrity of the soils, leading to pollution of land and water resources in the area. NAF has been at the forefront in pioneering a reclamation program, motivating the farmers to reduce the over use of fertilizers and reclaim soil fertility and improve the overall ecology of the area through its targeted and scientific approach of LEAN Farming systems in East Godavari District.

Mr. Adappa Lakshmana Rao in Vemulavada village, Karappa Mandal is a traditional farmer, cultivating paddy in his 1.5 acres of land. Normally he cultivate paddy by using more chemical fertilizers without knowing the actual requirement for paddy and use more chemical pesticides to control pest and disease.

Mr. Lakshmana Rao participated in the intensive technical training conducted by NAF in Tamilnadu. He came to know all the agricultural technologies to be followed in paddy cultivation including soil health management, comprehensive soil analysis, integrated nutrient management, integrated pest management, etc.



He wanted to test the technologies he learnt and requested NAF to establish Front Line Demonstration in his 50 cents of land and planned the rest of one acre with conventional method. Soil sample was taken in his 50 cents land and sent to NAF lab for analysis. Based on soil test report, he incorporated 250 kg lime to reclaim his demo plot.

As per NAF experts recommendation and guidance, he did quality seed separation followed by seed treatment. As per soil analysis recommendation, he applied 4 kg Zinc and 3 kg Borax on seven days after sowing. He also applied 25 kg DAP, 38 kg Urea, 12.5 kg Potash and 25 kg 17:17:17 complex as split doses as per the recommendation.

He followed prophylactic pest control measures in demo like installation of bird perches, pheromone traps, yellow sticky trap, spraying of Azadirachtin (organic pest repellent) and Pseudomonas fluorescence (bio fungicide). As per the need, he sprayed two spays of chemical pesticide. He also sprayed Panchakavyam (organic growth promoter) in demo.

Sl no.	Particulars	Demo	Control
1	Yield / ac in kg.	3750	3000
2	Expenses /ac in Rs.	27412.2	31420
3	Total Revenue in Rs	62475	49980
4	Profit/ac in Rs.	35063	18560
5	Cost of chemical pesticides in Rs.	810	9200
6	Cost of production per Kg in Rs.	7	10

In his control plot, the farmer followed conventional practices where he applied more chemical fertilizers and six rounds of chemical pesticide sprays.

The total expenditure was INR Rs.27,412 and INR Rs. 31,420 in his 0.5 acre demo and 1 acre control plots respectively. The yield was 3750 kgs in demo (0.5 ac) and 3000 kgs in control (1 acre)

The yield and expenditure were converted into per acre basis for comparison and the following are the results.

While comparing the demo and control, the farmer availed yield increase by 25 % and profit increase by 89% in demo plot. In addition, he has reduced chemical pesticides drastically in demo which reduces chemical contamination in soil, water and the produces.



Training on Power weeder operation and maintenance

Mr. Rajan from Vanniyanallur village basically a farmer having 1.15 acres of land had changed his cropping pattern from growing paddy to flower crops and bhendi to get some daily income. The major problem he faced was weed control and engaging labour to remove weeds in his field. He was selected for NAF agri training on latest technologies and farming practices and attended it willingly. Through this training he was exposed to various technologies such as power weeder, laser leveler etc. He was very impressed with the power weeder technology and NAF helped him understand the available subsidy from the government. He purchased kisan kraft power weeder worth INR Rs 49000 and is waiting for subsidy. It has been a boon for him, as it has drastically reduced his labour costs and time spent on weeding. Currently he is using the power weeder in jasmine and vegetable field by himself and completing the task in record time with minimum effort and costs. He also rents his machine to nearby farmers and earns a small additional income from this activity. He sincerely thanks NAF for exposing him to this agri technology and for helping him save cost and time.



Training on Preparation of Bio inputs - Multifold Benefits to Farmers

Mr. Shanmugam is having 3 acres of land in Arasur village of Chengalpattu district. He used to practice conventional way of farming in his land cultivating paddy, groundnut and watermelon. He got an opportunity to attend a training conducted by NAF at CFRD in Illedu village. At this training, he learned about the harmful effects of pesticides and chemical fertilizers. Followed by that, in the evening they demonstrated the preparation of panchakavya, jeevamirtham, Ginger, garlic, chilli extract etc. After that, he started producing panchakavya and used it in his own field in the watermelon crop. During the season, many lost their crop due to wilt, however, his crop stood strong due to panchakavyam spray.

Having witnessed the power of organic formulations first hand, and he realized the power of panchakavyam. He started preparing it commercially in three 200 litre barrels. Every month on an average he sells 100 to 250 litres @ INR Rs 120 per litre and earns about INR Rs.3000 to 10000 per month and during watermelon season he earns approximately INR Rs.20000 per month.

He is extremely grateful to NAF for conducting such useful trainings for the farmers by helping them reach maximum profits, reduce input costs and increase income from sale of such products in the local villages.



LEAN Farming Practices Improves yield and reduces cost of production for farmers

Mr. Sarvesh Maurya s/o Bhonu Maurya from Tikri village of Varanasi, who is a native farmer with agriculture being the only source of income for his family, was still practicing the conventional methods of farming with old technologies resulting in poor crop yield and less returns. In the year 2020, he got introduced to National Agro Foundation which gave him new insights on bottle gourd cultivation. They advised him to start with soil testing in his field to know the nutrient status, wherein they provided him with those micronutrients required for cultivation that was usually not available in local shops there.

Next step on crop protection was deploying Yellow sticky traps and Pheromone traps after sowing, helping a lot in trapping of insects and reducing the pesticide sprays. Bio control measures like Trichoderma spray and Panchakavya were also provided by NAF which eventually resulted in good productivity, large and attractive fruits. These fruits were with promising quality and were sold Rs.1-1.5 higher than the fruits of other farmers of the same locality. This was his first experience with scientific farming methods, proving to be cost effective and remunerative. The relatable performance of this year had been 55 Quintals (from 3/4th of the field where demonstration was done), rather than the usual normal of 14 Quintals in 1/4th of the total field accounting to a 25 per cent more production. He had also reduced the usage of pesticides by 60 per cent along with the inorganic fertilizers; this was a breakthrough from his conventional farming.

National Agro Foundation unlike others has come to the rescue of the farmers and through their guidance and technical trainings, many farmers are benefitting from the new knowledge and skills. He wishes to thank NAF for their efforts and request them to work with many more farmers to help them rebuild their livelihoods through scientific methods of agriculture.



Improving the health of women through Use of Biomass Stove

The above shop is well recognized by the local people who are being benefitted with the way her shop runs on their demand basis. She makes a profit of INR Rs.2500/month that supports her family. She is able to successfully run the shop and meet the requirements of her customers, which has made her popular in the village. She attributes this respect and support from her community to the joint effort of LTTS and NAF in supporting her and giving her the confidence to begin this entrepreneurial venture. She hopes to expand her shop to meet the additional demands of her customers and earn more income from the same.

Mrs. Janabai Anna Pilane is a 52 years old woman who lives in Katwadi village of Velha Taluk, Pune with her 17 family members. People from her village are traditionally using wood and dung cake for cooking. There is a requirement of more firewood to cook for her big family, wherein the field trees are chopped incessantly catering to the household's fuel requirements. Women usually travel deep into the jungles to cut wood and carry heavy loads over long distances for this purpose causing them chronic health problems. Buffalo dung cake is used as a parallel resource. Three meals a day has to be fought with the chunk of smoke that results in respiratory problems and eye irritation, in addition to making the house smoky and unbearable due to the trapped heat. Rainy season makes their life even difficult due to lack of burning materials and light source for cooking. At such a ponderous situation the biomass stove given by LTTS and NAF saves time and fuel wood, thereby conserving energy, saving the environment from excessive tree felling and improving the health status of women in the villages. The built-in LED bulb provides them light source during night time or frequent power cuts in the villages.

The women are extremely grateful for this bio mass stove and see this as a boon to providing them with extra time to cater to other household activities.



Improving Village Sanitation and Cleanliness through Construction of Drainage line

Mr.Datta Genba Pilane is a 45 years aged man from Katwadi village of Velha Taluk, Pune living with his 6 family members. His locality has 10 families with around 43 people living without a proper drainage facility where all the household water gets on the main street itself. The awful smell of sewage water and breeding of mosquito tends to impact their health adversely due to diseases like typhoid, malaria, fever, dysentery etc. Severe down pours in rainy season intensifies the problem with more stagnant water without proper drainage. After the intervention of constructing a closed drainage line by LTTS and National Agro Foundation, odor from sewage water has stopped and there is a free flow of rainwater in the drainage line without any stagnation. The villagers owe the cleanliness of their village to the efforts of LTTS and NAF, without which it would have been impossible to control the stench of stagnant dirty water, making it very unsafe for children and animals.

Today their children can play around the road freely, as most of them move around without any footwear. They need not fear communicable diseases from stagnant water and can freely sit outside their homes and socialize with each other, which was a huge problem earlier with overflow of sewage.

The entire community is very grateful for this initiative and is willing to work hard to continue to maintain the cleanliness of the village through shramdhaan.



Total Sanitation Development of the Community

The 4 project villages in Kalangal and Sultanpet block were selected for improving the sanitation facilities of the villagers and to address their requirements. Due to severe water scarcity in the villages, people used to defecate in open fields and along the roads to avoid using the toilets due to lack of water in the areas. The literacy rate in the project villages was also low and estimated at only 30%, due to which there was very low awareness on the ill effects of poor sanitation and hygiene practices within those villages. Most of the people living in the project villages are economically backward and mostly depend on agriculture as their primary source of income, in addition to daily wage labour as a meager addition to their household income. This poor financial status discouraged many from giving priority to constructing a toilet for their families due to other priority family expenditure. This situation posed a real challenge for women and young girls in the villages as they faced the most embarrassment and difficulty accessing the open areas dictated by time and social norms. Many young girls and even women faced health issues due to improper access to safe hygiene and toilets.

Even though the Villages had a common toilet, it was in a dilapidated condition and not very safe for usage. In addition to the common toilet being poorly maintained, it barely was sufficient to cater to the large community.

It was with this background that L&T together with National Agro Foundation decided to intervene and help to promote total sanitation by constructing Individual household toilets and educating the community through various trainings and awareness drives on the importance of sanitation, hygiene and the ill effects of open defecation on the community and the environment.

Proposed Interventions:

In order to alleviate the felt needs of the community across the 4 project villages, NAF had proposed the following interventions to address the lack of water scarcity and total sanitation.

- Soil and water conservation activities
- Construction of Individual household toilets
- Awareness training program for the community on importance of sanitation and its environmental impacts, ill impact of poor sanitation, women health and hygiene, disease caused due to open defecation and individual social responsibility and maintenance of newly constructed toilets.

After Intervention:

The scenario of the villages began to change in a positive manner after the implementation of the above mentioned interventions, with cooperation from the local panchayat and villagers, they now have new sanitation facilities, which are being maintained by the community and there is a palpable increase in awareness on hygiene and sanitation in the area.

Through various NRM initiatives, the ground water table has been restored to a healthy level, proving water even in dried up tube wells and community pumps, making water available for

not just household consumption, but for sanitation as well.

The villagers are now more aware of the ill effects of open defecation and communicable diseases due the same. They actively participated in various trainings organized by L&T and NAF and were able to gain knowledge on safe and hygienic practices to be followed.

130 households benefitted from construction of individual household toilets in the past year and have also received training on proper toilet hygiene and maintenance. They were also given hygiene and sanitary kits for toilet maintenance.

The common toilets in the villages have been renovated and become fully functional with availability of water and the upkeep and maintenance being undertaken by the local community through the VWC. These toilets are largely benefitting the poorer population, who are landless labourers and migrants who are on rental properties with no toilet facilities in the villages.

The local community has realized the value of this initiative and has whole heartedly supported the initiative by L&T and NAF for promoting Total Sanitation in the area by contributing a total of INR 8.5 lakh for Papampatti watershed. Each member contributed both physically through labour and financially for the cause.

Feedback from Beneficiaries:

- The entire community places on record their sincere appreciation and heartfelt gratitude to L&T and NAF for their tireless efforts in bringing total sanitation program to their village and striving to make it open defecation free.
- The women and girl children in the villages are especially grateful for the construction of household toilets, as their difficult and challenging days of accessing the open areas are now over. The can now access their own toilets, maintain proper hygiene and privacy and feel safe within their houses itself. This is a big blessing for the elderly population, who used to find it difficult to walk long distances in the wee hours for some privacy, they too are grateful for the household toilet
- The entire village community have come together to pledge against open defecation and promise to maintain clean sanitation and hygiene of their communities. They are very grateful to L&T and National Agro Foundation for their wonderful service and dedication towards making their community open defecation free.



Establishing a Successful Business Venture - Story of Dhanya FPC

National Agro Foundation was selected and appointed as Resource Institution by TNIAMP to federate FPOs under Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) scheme in Nilakottai Block of Dindigul district in Sirumalayar Sub basin. Under the guidance of Department of Agri Marketing and Agri Business, NAF has been assigned responsibility for mobilizing farmers in groups at the village level and build their associations at an appropriate federating point to plan and implement product specific cluster/commercial crop.

Status of farmers before the FPC at Sirumalayar Basin

There are 1982 hectares, of cultivable land in Sub Sirumalayar Basin, with Coconut, Flowers and Vegetables being the main focus of cultivation in the area. However, the existing, marketing channels were not remunerative to farmers and most of the farmers incurred huge losses due to high input costs and the lack of marketing opportunities. NAF proposed to form FPOs in these 8 villages by introducing alternative cropping system, new alternative marketing channels, improving agricultural infrastructure to develop the following,

- i. Improving farmer access to markets
- ii. Promoting agri-enterprises
- iii. Institutional strengthening and capacity building of the Farmer Producer Organizations.

FPOs will undertake various activities such as bulk purchase of inputs; and post-harvest management, quality control, grading, aggregation and marketing of produce.

Dhanya Farmers Producer Company has been registered in April 2020 under Companies Act 2013, in the name of "TNIAMP 2019 – 2020 Dhanya Farmer Producer Company Limited". The company has 1000 shareholders including 227 women shareholders from 8 villages in Nilakottai block of Dindigul district. They have been grouped into 50 Common Interest Groups (CIGs). Each CIG are comprised of 20 members and have bank account in their CIG group names. A share capital of INR Rs.10 lakh has been collected from the members and invested in the Company's share account,

Current Business Activities of TNIAMP Dhanya FPC

1. Small Onion Trading

Dhanya FPC conducted board meeting at their registered office and at the time of meeting they decided to start business activities in small onion trading. They also decided that the FPC will procure onion from 200 share holders and the aggregated produces would be sold to Roshini exports, Dindigul District. Before the onset of the business activity, a share amount of INR Rs10 lakh was transferred to the business account to initiative



the onion trading activity for the FPC. The Turnover for the year 2020 – 2021 is at INR Rs 18.50 lakh and the profit is INR Rs.45, 200.

2. Farmers Common Service Centre

The FPC has organized the marginal, small and tenant farmers into groups in order to provide good quality seeds, fertilizers and pesticides at affordable price in the FPC area of operation. The main focus is to supply Bio Pesticides to the farming community. This service centre has been a huge service to the farmers in the region as they have access to quality seeds at affordable prices and in turn make a profit from the sales turnover. They are also able to procure good quality bio fertilizers and bio pesticides at reasonable rates from the common service centre.



Dhanya FPC Shareholders have realized better prices for their produce through FCSC marketing channels in comparison to earlier years, where they were dependent on middle men and intermediaries, losing out on major share of the profits and market options.



Market Linkage of the FPC

TNIAMP 2019 – 2020 Dhanya Farmer Producer Company Limited has tied up with Sri Hari Traders, Dindigul for sale of FPCs various value added products like peanuts, moringa leaf powder and small onion.

The FPC is in the process of further expanding its business operations and will explore future business opportunities in the following areas

1. Onion seed farm
2. Custom Hiring Centre
3. Cattle feed and Moringa leaf powder

Thellaru Farmer Producer Company Limited (TFPCL) is incorporated under the Sub-section (2) of the Section 7 of the Companies Act, 2013 and Rule 18 of the Companies (Incorporation) Rules, 2014, on 11.02.2016. The authorized share capital of the Company is Rs. 20 lakh and the current paid up capital is Rs. 11.40 lakh. The operational area of the Company covers 19 gram panchayats of Thellar Block of Thiruvannamalai District. This company is promoted with support from National bank for Agriculture and Rural Development (NABARD), Chennai and the Technical support of National Agro Foundation as Resource Institution.



NAF has been instrumental in helping the FPO to gain access to various government schemes and subsidies benefitting scores of farmers through this FPO.

Schemes Allotted From Government:

- Goats were provided by the government to specific members of the FPO for goat rearing business.
- The FPO has paved the way for agricultural inputs to be made available free of cost to their FIG's through the TNRTP Program.
- Mini Rice Mill, Pulverizers, Groundnut decorticator, wood ghani machines have been provided in the state of entrepreneurship through the MSDA (Mission on Sustainable Dryland) Scheme at the cost of 10lakh.
- TNRTP (Tamilnadu Rural Transformation Project) Scheme allotted INR 10 lakh (Cattle Feed Machine, Neem Seed Pulverizer, and Baler Machine). Cattle Feed Production Unit will be initiated shortly.

Current Business Activities of the FPO:

1. Oil Extraction Unit

The Thellaru Farmer Producer Company Limited (TFPCL) has established an Oil extraction Unit Under the scheme of MSDA mission on sustainable dry land agriculture, at the cost of 10 lakh. Through this unit, now they involve in procurement of groundnut, sesame and dried coconut from shareholders, processing of oil, proper packing and marketing to both shareholders as well as non shareholders. This unit is doing profitable business and is able to generate good profits for its shareholders.

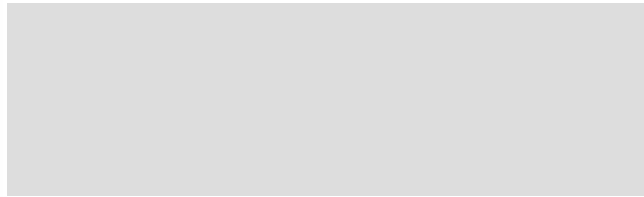
2. Seeds supply

Seeds play an important role in a farmer's life. Through the modernization of agriculture the seed industry has grown exponentially and farmers have become increasingly dependent on the seeds provided by the private sector. With respect to the production and supply of seeds there are two different activities. The first activity is the training and support for the production of certified seeds by the farmers. The company procures these seeds from the farmers and sells the seeds both to members and non-members. The second activity is the organization of a supply system to meet various seed requirements of the members. For this purpose seeds are procured both from the member farmers who are producing certified seeds (mentioned above) as well as other sources. This way the balance between demand and supply is always ensured, in addition to quality seeds production and availability at affordable prices for the farmers in the region.

Future Business Activities and Expansion Projects

- ✓ Cattle Feed Production Unit.
- ✓ Neem seed cake production for using as fertilizer
- ✓ Pesticides and Fertilizer shop

NAF has been providing hand holding support and facilitating various grants and financial avenues to the FPO for the development of sound business practices and expansion into newer product categories and markets.



Celebrating 20 Years of Work Life at NAF... Congratulations!!! To The Executive Team

For completing 20 years of dedicated service with
National Agro Foundation



Dr. M.R. Ramasubramanian
Executive Director
DOJ: 1st Oct, 2000



Dr. Kalpana Rajesh
Additional Director
DOJ: 6th Dec, 2000



Dr. S.V. Murugan
Director
DOJ: 23rd Mar 2001

Remembering Our Lost Ones

This past year has been one of losses for the entire world and especially the NAF family. We would like to recollect and honor the people who we lost during the pandemic for their unfailing and dedicated service to the less fortunate and to the Foundation.



Dr. K.S. Subramanian (NAF Trustee)

20 Years service with NAF, left us on 24th October 2020

Dr K.S Subramanian affectionately called as 'K.S', one of the Founder Trustees of National Agro Foundation (NAF), remained the pillar of strength to NAF until his last breath. He started his career as an IRAS Officer in India, worked for more than 15 years and then moved to Asian Development Bank (ADB) where he served over two decades finally retiring as Director in ADB in 1998. With his easy, approachable and humorous nature, he guided NAF at critical stages. He was also associated with Mozhi Trust and Amar Seva Sangam. He was also member of Sahitya Academy Advisory Board for six years. His knowledge and authority on development financing and project management as well as on Tamil literature were exemplary. He beautifully balanced his role as the head of developmental organization and as a Tamil writer. He was a widely acclaimed translator and had translated many Tamil literatures in to English. He was a philanthropist and had silently helped many students from poor background to continue their education pursue their career. His loss is irreparable to NAF and the Board of Trustees and the members of NAF pay their respectful homage to Dr KS.

Mr. J.Saibaba (Head - Food Safety & Standards Division)

16 Years service with NAF, left us on 11th December 2020



Saibaba sir as he was fondly known by all, joined NAF in 2004 after being part of State Food Testing Lab - Kings Institute, Govt. of Tamil Nadu for over 30 years. Saibaba sir was the fountain head of knowledge in the areas of food safety and quality and was epitome of simplicity with down to earth qualities. His contribution in establishing the NAF Food Testing Lab, helping the resource poor rural food entrepreneurs on food safety and standards and guidance to the students is praiseworthy. He was very passionate about teaching and taught even the difficult subjects in an understandable manner to the students. He was source of inspiration to all those who were associated with him either as the lab clients or as students apart from the NAF team members. NAF family deeply mourns the passing away of Mr. Saibaba.

NABARD Chairman Visit to NAF R&D Centre, Taramani, Chennai



Inauguration of Community Watershed Project, Sollakpalle, Supported by Novartis



Inauguration of Sanitation Complex at Vedanthangal Bird Sanctuary Supported by BNY Mellon



NAF Awarded the Best Watershed Award for Kotteri Watershed by NABARD



During the celebration of 36th Foundation Day of NABARD, **Kotteri watershed project** was honored with “**Best Watershed Award**”

In view of the Pandemic situation, the certificate of recognition was handed over to VWC and NAF by NABARD officers in Kotteri.

Board of Trustees



Mr. M R Sivaraman IAS (Retd.) Former Union Revenue Secretary, Govt. Of India

Former Executive Director, International Monetary Fund, Former Advisor, UN Security Council



Dr. N G Hegde Former President and Managing Trustee, BAIF, Pune Trustee and Principal Advisor, BAIF Development Research Foundation Has rich experience in Sustainable Livelihood and Community Development



Brig. R I Raghunathan, SM VSM (Retd.) Highly Decorated army officer with 38 years of service in Indian Army. Recipient of Seva medals from the President of India. Renowned strategist who Has been in the developmental sector for the past 10 years.



Mr. K Raghavendra Rao Founder - Chairman & Managing Director, Orchid Chemicals & Pharmaceuticals Ltd.



Mr. S. Swaminathan

Tata Tea nominee Director in the Board of Kanan Devan Plantations Private Limited

Vast exposure to social sector projects and NBFCs in India



Mr. S S Rajsekar A first generation entrepreneur with over 30 years experience in real estate promotion and trade. He has been involved in the area of rural upliftment and social and community development. A proactive Rotarian involved in several socially relevant projects in and around Tamil Nadu.

Governing Council Members

Name	Brief
	Mr. N. Ravi Director Of Kasturi & Sons Ltd. Previously, Editor-In-Chief Of 'The Hindu'
	Dr.S.V.Balasubramaniam Chairman & Managing Director, Bannari Amman Sugars Ltd., Coimbatore. Leading Industrialist Especially In Agribusiness.
	Dr.C.Lakshmanan Director, California Agriculture Consulting Services, USA.
	Mr. C.Ramakrishna Eminent Lawyer And A Modern Farmer
	Dr.Y.S.Rajan Honorary Distinguished Professor At Indian Space Research Organisation (ISRO), Department Of Space, Govt. Of India.Former Principal Advisor, Confederation Of Indian Industry (CII),New Delhi. Has Co Authored "Vision 2020" With Dr A P J Abdul Kalam, A Renowned Scientist And Former President Of India
	Ms.Indu Palaniappan Formerly With British High Commission Managing International Development Projects.
	Vice Chancellor(Ex Officio) Vice Chancellor, TNAU
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Many thanks to our supporters, well wishers and stakeholders who share in our Founders dream and support our every effort in reaching out to the underserved and vulnerable communities in rural India.



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