

**NATIONAL AGRO FOUNDATION**



## **Annual Report 2016-2017**

**'Creating a sustainability road map for  
Rural Prosperity within Local Ecosystems'**







# Annual Report

## 2016-2017



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## About us

### Who we are



National Agro Foundation (NAF) was established in 2000 by Late Shri C Subramaniam (Bharat Ratna Awardee & Architect of India's Green Revolution), and was further nurtured by Dr A P J Abdul Kalam (as Chairman of NAF Governing Council), for comprehensive agriculture and rural development with prime focus on transforming the direction of the Indian agriculture from “production oriented” to “market-oriented” or in the words of Mr. Subramaniam from 'seed to grain' to 'soil to market'.

### Vision



To create a “Healthy, Literate and Prosperous Rural India”

### Mission

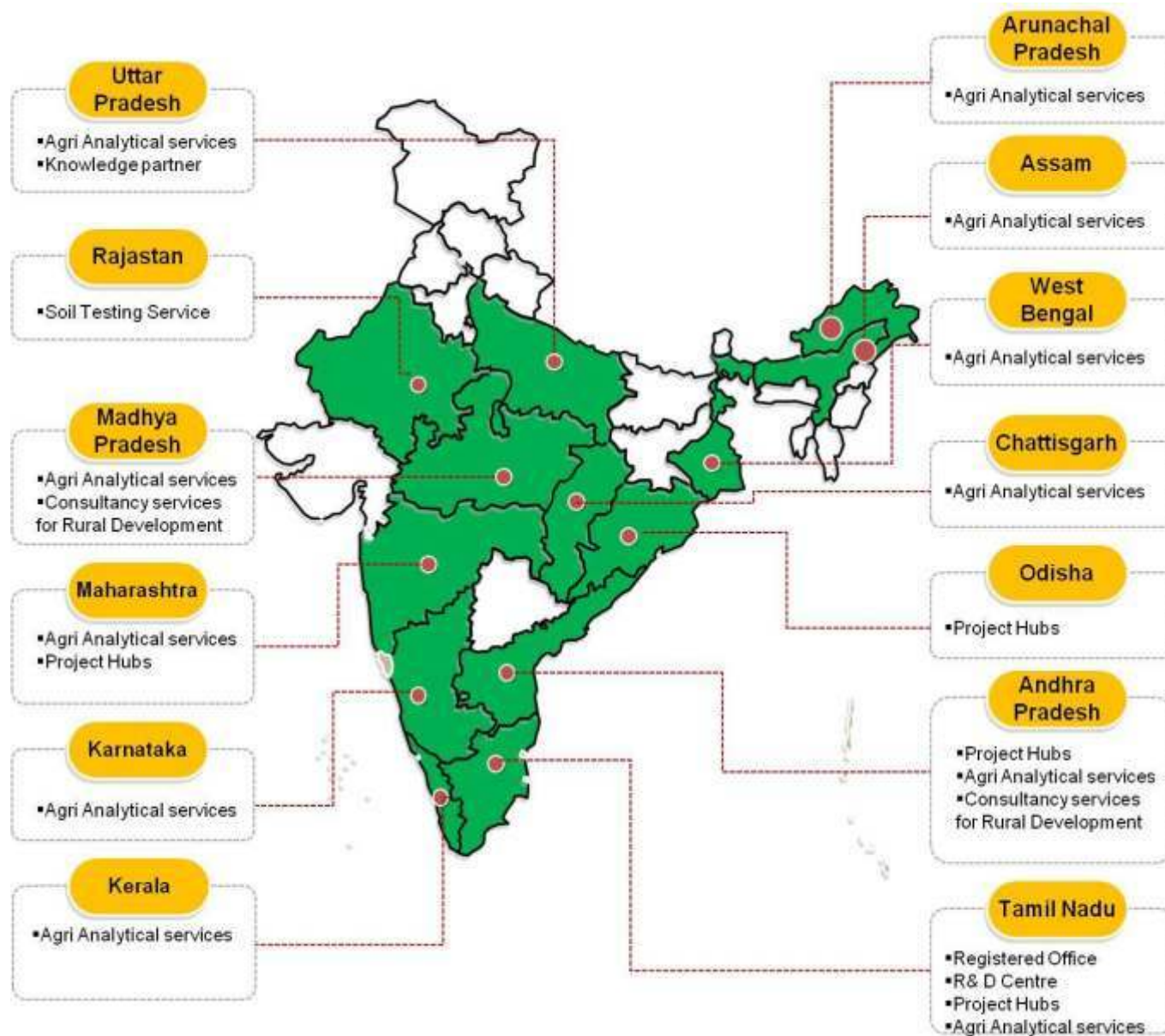


“Creating replicable models of prosperous rural clusters through ecologically safe, environmentally sustainable farm and non farm sector activities, natural resource management, rural enterprises and human resource development by networking various stakeholders through mutually beneficial partnerships.”

To explore our diversified rural development initiatives and to contribute towards creation of a prosperous Rural India please visit our website

[www.nationalagro.org](http://www.nationalagro.org)

## NAF's Presence



## Message from Managing Trustee

**Dear friends & well-wishers,**

I am delighted to share with you NAF's Annual Report 2016-2017 titled "Creating a sustainability road map for rural prosperity within Local Ecosystems". The title reaffirms the commitment of our Foundation towards enabling the rural community of India to prosper and making it a catalyst for achieving sustainable development goals (SDGs) through local actions.



2016 was another significant year of rural innovations & sustained efforts for the Foundation. 16 years ago, we set out our vision to 'create a healthy, literate and a prosperous rural India' with prime focus on sustainable agriculture development. And now, as I reflect on the development of the organization over the last 16 years, I am immensely proud to see the significant and verifiable outcomes that our Foundation have achieved across its "4E" model including 'Environment protection' through Watershed and Natural Resource Management, afforestation, climate smart agriculture; 'Economic development' through farm and non-farm sector enterprise development; 'Education' through training and capacity building of rural stakeholders and 'Empowerment' through formation, nurturing, strengthening and handholding of community level institutions.

The 2017 edition gives a snapshot of our ongoing achievements towards enhancing the resilience and capacities of rural communities against climate change and poverty. We are seeing real commitment and massive behavioral change amongst our farmers and rural people towards adopting and disseminating sustainable farming practices and latest technologies; conserving and harnessing our valuable natural resources and working together with a sense of collective ownership and responsibility for sustainable village development.

Foundation's comprehensive initiative of soil, water and biodiversity conservation has resulted in ground water recharge and water savings thereby, bringing additional area under cultivation and increased cropping intensity.

Through resource conserving and Climate Smart agriculture practices, it has reduced carbon footprint and emission and demonstrated yield improvement in various crops up to 40% and profitability up to 74%. To ensure sustainability, Foundation has mobilized and graduated the beneficiary community into formal institutions like Farmers Producer Organizations (FPOs), Joint Liability Groups, Self Help Groups, Watershed Committees etc. covering over 15000 farmers as shareholders. Training and capacity building of rural stakeholders including farmers, mahila kisans (Women farmers), youth, agriculture graduates and diploma holders and other agencies involved in agriculture and rural development including banks and NGOs, through both Need-based technology & community oriented tailor made programs has been a key component for Foundation's success.



The lab to land extension services offered by our foundation makes modern technologies reach the farming communities. This is crucial in a modern world where farmers face vagaries of climate change, expanding population and shrinking land & water resources.

Our well-equipped soil and food testing laboratories are providing timely and accurate analytical services in the areas of comprehensive soil health diagnosis, food quality & safety analysis, plant tissue analysis and irrigation water testing for the resource poor farmers and rural people.

The Foundation is also working in collaborations with research institutions like CSIR-CLRI, TNAU etc., for applied and adaptive research in the field agriculture & allied sectors to deliver more sustainable farming systems.

Further expanding its horizon toward rural prosperity, the Foundation is currently focusing on promoting use of digital platforms and IT-enabled systems for sustainable rural development; promoting renewable energy sources; reducing carbon foot print; educating & empowering the rural people on climate change preparedness and developing climate ready village ecosystems in the longer run.

I am immensely grateful for all the support and contributions we have received from all that has built the organization we are today. Together, we have steered through many changes and challenges. But there is so much more to do in the coming years and for that we need to keep refining and reorienting our approach & strategy against the rapidly increasing challenges of extreme climate vagaries, ecological as well as economic poverty and food & nutritional insecurity, while keeping true to our core commitments and values. This requires exploration of new development partnership avenues along with continuous support from all our current stakeholders, to ensure consistency in efforts, meaningful changes on the ground and inspiring farmers & rural communities in pursuit of the ultimate goal of creating a sustainable future for all.

**SS Rajsekar**

Managing Trustee

National Agro Foundation

Working in

More than  
**600** villages

Impacted more  
than

**50,000**  
families in rural  
areas

Strategically partnered with  
More than  
**20 organizations**

More than  
**3500**  
beneficiaries

Working with more than  
**15,000**  
**Farmers**

Received training through more  
than 100 specially designed  
training programmes

14 FPOs formed  
1345 soil samples tested  
109 water samples  
tested  
257 food samples tested

Other tests and analysis  
done on more than 100  
samples

**Watershed  
Management**

Treated more than 10,000ha  
area of land in 93 villages

## Our Approach and Key work areas

### Approach

*Holistic and interconnected approach for 'Rural development':*

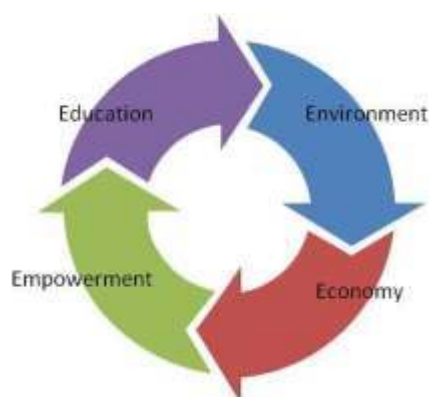


**Focuses on all 'Livelihood assets':**

### NAF's Intervention

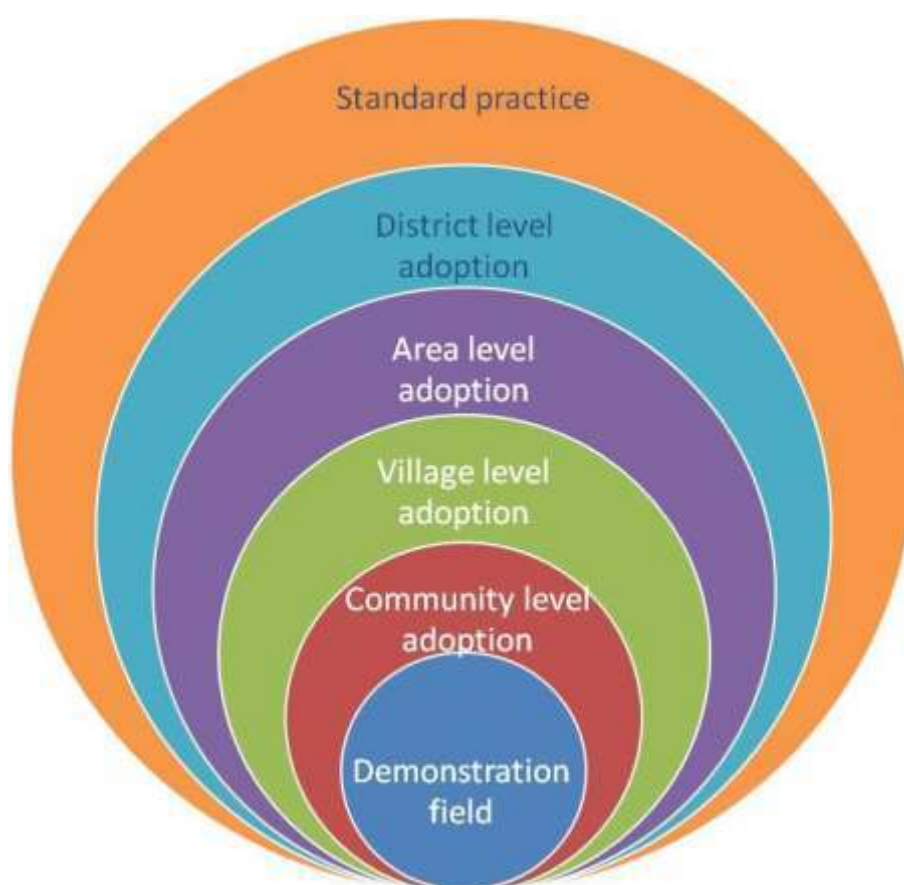


#### 4E - Approach:



For NAF, sustainable development is about recognizing, understanding and acting on interconnections— between the thematic areas of education, economy, environment and empowerment. All interventions of NAF are oriented towards achieving significant and verifiable outcomes in these thematic areas.

#### Creating Demonstration effect through 'Frontline Demonstrations' (FLDs):





## Key work areas



Figure: Big picture of our work



Figure: Various activities under different divisions

## 2016-17: Projects, Activities, Output, Outcome and Impact

### Agriculture Development Division

We recognize the fundamental role of agriculture to improve rural livelihoods, reduce poverty, contribute to the nation's economy and ensure food and nutrition security for all. 'Growth in agriculture generates up to four times greater poverty reduction impact than growth in other sectors'

'Growth in agriculture generates up to four times greater poverty reduction impact than growth in other sectors'

World Bank Document

World Bank DocumentTo strengthen this crucial agricultural system, we focus on the key challenges like environment degradation, climate change related issues, market imperfections & volatilities, price fluctuations, sustainability issues, poor skill level of farmers and lack of rural infrastructure.

Our intervention model attempts broadly to make the farming system economically viable and ecologically sustainable. Also, every effort of our implementation team strives to involve the targeted beneficiaries from the project planning phase to project exit phase.

#### Areas of Focus:

We work in the following strategic areas that we believe will address the local problems and ground realities faced by farming families in the project areas.

Promoting and nurturing Agri-businesses run by farmers (FPOs)

Providing advisory and consultancy services to other stakeholders.

Training, Technology, Extension & Analytical services for Agricultural productivity improvement.

Empowering the farmers with the knowledge, tools and technologies to improve their livelihoods and tap the maximum potential from the agricultural system.

Demonstrating and implementing climate smart agriculture to reduce the climate change related vulnerabilities of the farmers by improving their adaptive capacity.



## AGRI-Business Interventions: Promotion and nurturing of Farmer Producer Organizations (FPO)

### Project objective:

To promote and nurture FPOs (formation of FPOs, improving the business activities, developing B-plans, facilitating market linkages and providing training etc.,)

| Project Details   |                                |
|-------------------|--------------------------------|
| Place             | 9 Districts of Tamil Nadu      |
| Funding agency    | SFAC and NABARD                |
| Role of NAF       | Resource Institution           |
| Key stakeholders  | SFA C, TNSFAC, NABARD, Farmers |
| Target population | Farmers                        |

### Key Highlights

- ✧ NAF has been empanelled as 'Resource Institution' by Small Farmer agri-Business Consortium (SFAC), Ministry of Agriculture, Government of India for promoting and nurturing Farmers Producer Organizations. TNSFAC, Government of Tamil Nadu has signed a Memorandum of Agreement with NAF for forming 4 FPOs in Tamil Nadu.
- ✧ NABARD has empanelled NAF as one of the 'Resource Institutions' for promotion of FPOs in Tamil Nadu.

### Key activities in 2016-17:

- ✧ Formation of FPOs and registering them as companies.
- ✧ Baseline data collection.
- ✧ Enrolment of farmers into FPOs.
- ✧ Providing handholding support to the FPOs to carryout business activities.
- ✧ Taking the members of FPOs for exposure visits.
- ✧ Conducting training for BoDs (Board of Directors) and ToTs (Trainers of Trainers)
- ✧ Conducting Frontline Demonstrations.





Photo: Sholavaram FPO selling its produce through Sunny Bee, a retail chain



Photo: Front line Demonstration field in our project area





Mushroom production unit at K.M Koil



Mushroom production unit at K.M Koil



Farmers Federation using Digital  
Financial Inclusion tool



Annual General Meeting of Thellaru FPO



Members of Valvil FPO preparing value added products using Pearl millet.



| OUTPUT                                                                                                                                                                                                                                                                                                                          | OUTCOME                                                                                                                                                                                                                                                                                                                                                        | IMPACT                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Through TNSFAC                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• Four FPOs were formed for TNSFAC in 4 districts.</li> <li>• Four BoDs trainings and 10 ToTs trainings were conducted.</li> <li>• FPO members were taken to 18 exposure visits.</li> <li>• 440 FLDs were conducted.</li> <li>• Baseline data of 3500 farmers were collected.</li> </ul> | <ul style="list-style-type: none"> <li>• 3800 farmers from 118 villages brought into the FPO institutional arrangement</li> <li>• INR 37 Lakhs collected as share capital</li> <li>• Three FPOs are successfully running the 'Input Supply Centres</li> <li>• One FPO is in the process of starting a business to process and sell millet products.</li> </ul> | <ul style="list-style-type: none"> <li>• Through TNSFAC Total Business turnover of the 14 FPOs (Supported by SFAC and NABARD) is INR 109 Lakhs</li> <li>• The dependence of middle men is reduced.</li> <li>• The entrepreneurial drive of the farmers is enhanced.</li> </ul> |
| Through NABARD                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• 10 FPOs formed for NABARD in 5 districts.</li> <li>• 10 BoDs trainings, 18 ToTs training were conducted</li> <li>• 17 exposure visits were arranged for FPO members</li> </ul>                                                                                                         | <ul style="list-style-type: none"> <li>• Seven FPOs are successfully running 'Input Supply Centres.</li> <li>• Two FPOs have started vegetable collection, grading and marketing centres.</li> <li>• One FPO had started Mushroom business.</li> <li>• 4. Market linkages are done.</li> </ul>                                                                 | <ul style="list-style-type: none"> <li>• The end customer gets the higher quality agriculture products at a lesser price.</li> <li>• Value addition activities are carried out at the village level.</li> <li>• Activities generated employment.</li> </ul>                    |



Photo: Branded Products manufactured at Valvill FPO (Supported by SFAC)

## FPO level details

### Details of FPOs supported by SFAC:

| District   | Block       | Name of the FPO  | No. of villages covered | No. of farmers enrolled | Crops Produced     | Amount of Share capital collected (in lakhs) | No. of Baseline data collection | Business Activity Commenced                  | Business Plan                                                              | Business turnover (INR) |
|------------|-------------|------------------|-------------------------|-------------------------|--------------------|----------------------------------------------|---------------------------------|----------------------------------------------|----------------------------------------------------------------------------|-------------------------|
| Villupuram | Gingee      | Eriyur Manimutha | 25                      | 1000                    | Pulses             | 10 lakhs                                     | 1000                            | Input centre<br>Custom hiring centre         | 1.Dhall mill proposal<br>2.Input centre proposal<br>3.Custom hiring centre | 30 lakhs                |
| Villupuram | Chinnasalem | Raja desingh     | 18                      | 1000                    | Pulses             | 10 lakhs                                     | 1000                            | Input centre                                 | 1.Dhall mill proposal<br>2.Input centre proposal                           | 8 lakhs                 |
| Salem      | Mechery     | Thanga Thamarai  | 38                      | 1000                    | Pulses             | 10 Lakhs                                     | 1000                            | Input centre,<br>crop loan,<br>grocery shops | 1.Input centre proposal<br>2.Dhall mill proposal                           | 50 lakhs                |
| Namakkal   | Rasipuram   | Valvil Sudesi    | 37                      | 800                     | Millets and pulses | 7 Lakhs                                      | 500                             | Millets value addition                       | 1.Input centre proposal<br>2.Millets processing unit                       | 5 lakhs                 |

Table: Farmers enrolled, villages covered, share capital collected and no of baseline study conducted details

Out of 4 FPOs, 3 FPOs have started Input Supply Centre as one of their main business activities wherein agrochemicals like fertilizers and pesticides are being sold to member farmers. One FPO is in the process of preparing millet based products. Apart from this, these FPOs are in the process of expanding their business for which suitable business plans are being prepared to get assistance from banks and financial institutions.

## Training details of FPOs supported by SFAC

| Name of the FPO  | Total No. of BODs training conducted | Total no. of exposure visits | Total No. of TOT Trainings | Total No. of FLDs Completed |
|------------------|--------------------------------------|------------------------------|----------------------------|-----------------------------|
| Thangathamarai   | 1                                    | 3                            | 3                          | 120                         |
| Eriyur Manimutha | 1                                    | 6                            | 3                          | 120                         |
| Rajadesingh FPO  | 1                                    | 7                            | 3                          | 60                          |
| Valwill Sudeasi  | 1                                    | 2                            | 1                          | 40                          |

**Table: Details of number of training, exposure visits, Field Demonstrations**

### Details of FPOs supported by NABARD:

NABARD has also empanelled NAF as one of the Resource Institutions for promotion of FPOs in Tamilnadu. NAF has signed a MoU with NABARD for forming 10 FPOs in 5 districts of Tamil Nadu at an outlay of Rs.90 lakhs.

| Name of the FPO             | Total No,of BODs training conducted | Total no. of exposure visits | Total No. of TOT Trainings | Business act ivity                              |
|-----------------------------|-------------------------------------|------------------------------|----------------------------|-------------------------------------------------|
| Acharapakkam & Madurantakam | 1                                   | 2                            | 2                          | Input centre                                    |
| Lathur& Chithamur           | 1                                   | 2                            | 2                          | Input centre                                    |
| Marakanam watermelon        | 1                                   | 2                            | 2                          | Input centre                                    |
| Olakkur                     | 1                                   | 2                            | 2                          | Vegetables grading and collection               |
| Thellaru                    | 1                                   | 2                            | 2                          | Input centr                                     |
| Gummidipoondi good luck     | 1                                   | 2                            | 2                          | Input centre                                    |
| Puratchideepam              | 1                                   | 2                            | 2                          | Input centre                                    |
| Sholavaram                  | 1                                   | 2                            | 2                          | Vegetables grading and collection and marketing |
| Veera Rajendra chozhanar    | 1                                   | 0                            | 0                          | Input centre, Mushroom                          |
| Panruti                     | 1                                   | 1                            | 2                          | -                                               |

**Table: Details of FPOs supported by NABARD**

The business activities of carried out by FPOs are at the different stages of progress. The Annual turnover ranges between 1 Lakh to 12 Lakh.



## Technical advisory to “Project Samudhay”, a village upliftment program of HCL Foundation

### Project objective:

To provide technical advisory to the HCL Foundation project team in the implementation of “Project Samudhay”, a village upliftment program.

### Project Details

|                          |                                                            |
|--------------------------|------------------------------------------------------------|
| <b>Place</b>             | Hardoi District, Uttar Pradesh                             |
| <b>Funding Agency</b>    | HCL Foundation                                             |
| <b>Role of NAF</b>       | Knowledge partner                                          |
| <b>Key stakeholders</b>  | Project team of HCL Foundation, project beneficiaries, NAF |
| <b>Target population</b> | Project implementation team, Farmers                       |



### Key activities:

Providing advisory services and knowledge sharing to the project implementation team on agriculture activities, pest management, participatory approaches, agriculture market, field demonstrations, etc.,

| OUTPUT                                                                                                                                                                                                                                         | OUTCOME                                                                                                                                       | IMPACT                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| NAF delivered advisory services to the project implementation team of HCL Foundation. (One full time NAF agri advisory expert is stationed at the project site and other experts from NAF provided advisory services based on the requirement) | Augmentation of the technical expertise of Project Samudhay's team.<br><br>Transferred the knowledge and expertise of NAF to the project team | Improved the quality of project implementation.<br><br>Supported HCL foundation in achieving the project objectives |





## Development of ICT based Digital Platform to FPOs and its members to provide various finance related services.

### Project objective:

Develop ICT based solutions to bring financial inclusion and promote cashless transactions among community organizations and Farmers Producer Organizations.

### Key activities:

Developing software and web application to promote financial inclusion among the beneficiaries.



Photo: Beta testing of the Software application at the FPO

| OUTPUT                                                                                                                                  | OUTCOME                                           | IMPACT                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modules on Farmer Data Repository (FDR) and Milk Aggregate Portal (MAP) have been developed. User acceptance testing is underway.       | The data management activities will be digitised. | Will improve the data base management capacity of FPOs and help them making better management decisions.                                                          |
| Lending and Recovery Systems (LRS) of loans of FPOs and Farmer Investor Services (FIS) would also be developed as a part of the project | The members of FPOs will become ICT savvy.        | Will improve the efficiency and transparency of the organization<br><br>Contribute to achieving the objectives of Financial Inclusion and cash less transactions. |



## Capacity building to CRPs and Mahila kisans of Mahila Kisan Sashaktikaran Pariyojana (MKSP)

### Objective of MKSP (Pilot stage):

Improving the livelihood of women engaged in agriculture by imparting intensive training on sustainable agriculture

### Key Activities:

1. Developing training modules
2. Capacity building to Community Resource Persons (CRPs) and Mahila kisans.
3. Supporting the (CRPs) of the project in profiling the Mahila Kisans through surveys and the uploading the data to TNCDW (Tamilnadu Corporation for Development of Women) website.

| Project Details          |                             |
|--------------------------|-----------------------------|
| <b>Place</b>             | 2 districts of Tamil Nadu   |
| <b>Funding Agency</b>    | Min of Agriculture, GoI     |
| <b>Role of NAF</b>       | Technology Transfer partner |
| <b>Key stakeholders</b>  | TNCDW, Women farmers        |
| <b>Target population</b> | Women farmers               |

| OUTPUT                                                                                                                                                                                                                                                                   | OUTCOME                                                                                                     | IMPACT                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Facilitating the implementation of MKSP pilot project in two districts of Tamil Nadu through Training CRPs.</p> <p>98 CRPs and 8000 Mahila Kisans have been trained on subjects like SRI, Mushroom cultivation, Vermicompost and Preparation of Organic Extracts)</p> | <p>Making the Mahila Kisans through CRPs technically skilled in the sustainable agricultural practices.</p> | <p>Preparing the CRPs and Mahila kisans to effectively achieve the objectives of MKSP pilot project.</p> <p>Ultimately, promoting sustainable agriculture practices among the women farmers.</p> |



Photo: Training programme on field



Photo: Practical demonstration for women farmers



## Sustainable Agriculture Development project in Eraiyur village near Oragadam, A CSR project of Apollo Tyres Foundation

### Objectives:

To promote sustainable agriculture in Eraiyur village.

### Key Activities:

1. Promotion and facilitation of farm machineries
2. Comprehensive soil testing
3. Establishment of frontline demonstrations
4. Providing training to lead farmers
5. Pre-season crop camps and agri advisory services.

### Project Details

|                          |                                           |
|--------------------------|-------------------------------------------|
| <b>Place</b>             | Eraiyr village, Kancheepuram              |
| <b>Funding Agency</b>    | Apollo tyres Foundation                   |
| <b>Role of NAF</b>       | Project implementing partner              |
| <b>Key stakeholders</b>  | Apollo Tyres Foundation, NAF and Farmers. |
| <b>Target population</b> | Farmers and village community             |



Photo: Intensive Technical training programme



Photo: Demonstration of organic farming



Soil is collected for comprehensive diagnosis



Farm machineries support to farmers club.



| OUTPUT                                                                                                                                                                                                                                                                                                                                                                               | OUTCOME                                                                                                                                                                                                                                                                                                                                                                                           | IMPACT                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>12 awareness training programmes conducted</p> <p>'Dr Abdul Kalam Farmers Club' was established.</p> <p>Lead farmer training was conducted for 15 lead farmers.</p> <p>Two pre-season camps on cultivation of paddy and pulses have been conducted.</p> <p>25 soil samples have been analysed.</p> <p>15 frontline demonstrations were established for lead farmers on paddy.</p> | <p>19% increase in yield (despite of Vardha cyclone) is observed in Frontline Demonstration fields (FLD).</p> <p>Lead farmers become trained in new agricultural practices</p> <p>Demonstration effect of 15 FLD fields influenced rest of the farmers significantly.</p> <p>Through comprehensive soil testing and diagnosis, site specific measures were taken to improve the productivity.</p> | <p>19% increase in yield (despite of Vardha cyclone) is observed in Frontline Demonstration fields (FLD).</p> <p>Lead farmers become trained in new agricultural practices</p> <p>Demonstration effect of 15 FLD fields influenced rest of the farmers significantly.</p> <p>Through comprehensive soil testing and diagnosis, site specific measures were taken to improve the productivity.</p> |



Frontline Demonstration field



Training on cultivation inside green house

## Watershed Development Division

Treating Agricultural watersheds will result in increased resilience of small land holding farmers through enhanced ecosystem services. Watershed management interventions such as soil and water conservation (SWC) and water harvesting are crucial to improve the natural asset of an area. As a result, there will be an increase in overall biomass, productivity, cropping frequency, irrigation sources, livestock, livelihoods opportunity etc.,

**Treating Agricultural watersheds will result in increased resilience of small land holding farmers through enhanced ecosystem services.**

Watershed management technologies have proven to be effective in reducing soil erosion on slopes by making the water run-off to walk-off and walk-off to sink in, stabilizing landscapes, recharging the ground water, increasing the surface water availability, improving agricultural production system, etc.,

NAF's watershed team effectively manages the bio-physical, socio-economic and institutional components of the watershed to generate sustainable livelihoods for the dependent people.



Before and after intervention photo of a project at Thiruvallur District, Tamil Nadu

**Effective treatment of watershed will ensure the sustainability of land based resources and act as bedrock of Sustainable Development practices.**

Balancing sustainability of natural resources and livelihoods Effective treatment of watershed will ensure the sustainability of land based resources and act as bedrock of Sustainable Development practices.

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 multidisciplinary & multi-sectoral approach, using scientific knowledge from different fields and a combination of technologies, strategies and techniques to create maximum possible benefit.

technolo



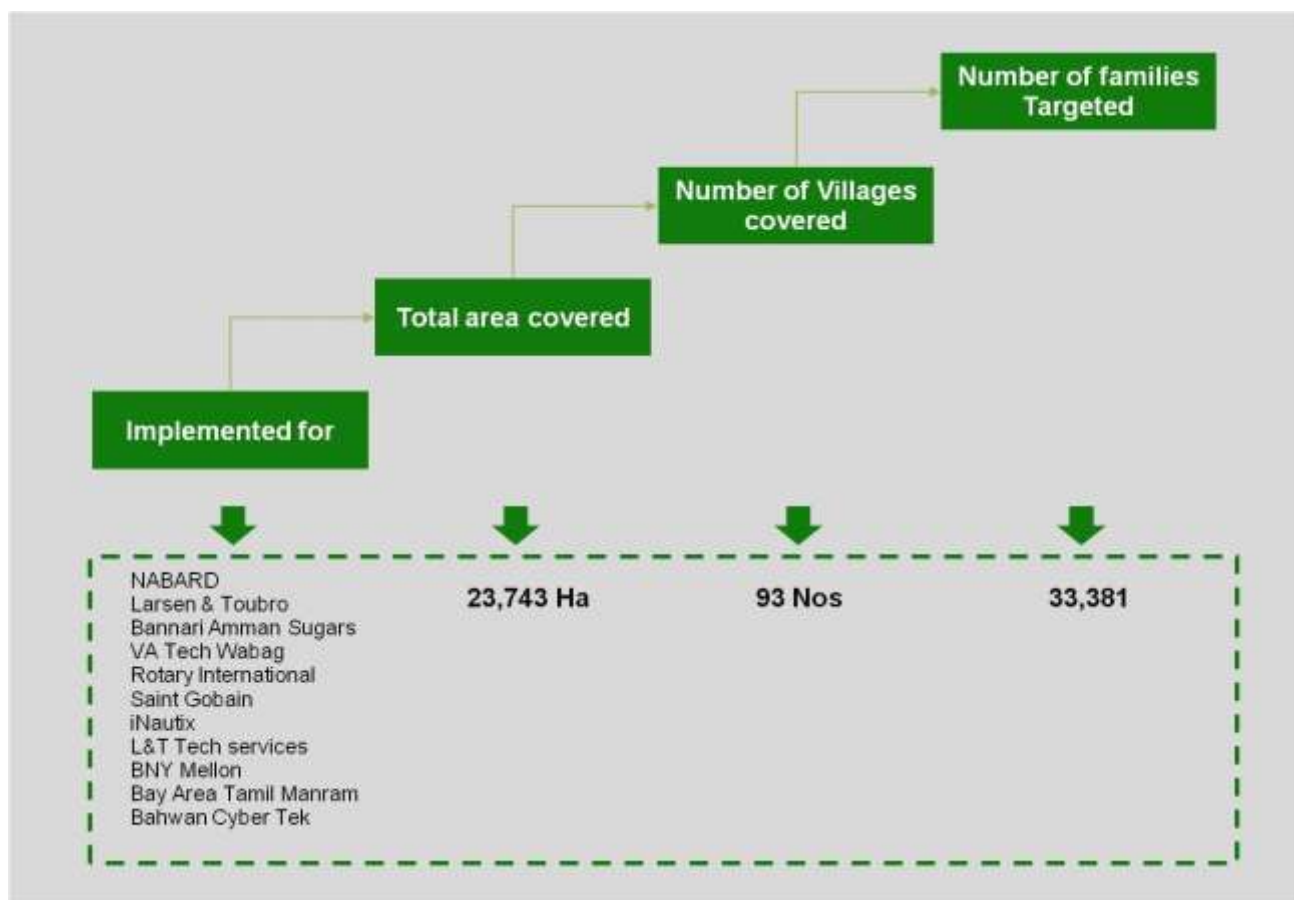


Figure: Key highlights

## Major Activities

- Natural Resource Management
- Baseline study and watershed monitoring
- Soil and water conservation
- Restoration of ground water
- Construction of trenches, Rock Fill Dams, farm ponds, check dams and suitable other structures
- Productivity Enhancement
- Training & Capacity building
- Livelihood development
- On-farm water management
- Improving productivity of land
- Livestock development
- Institutional strengthening for improved watershed governance
- Strategic partnerships for joint action on the ground

| OUTPUT                                                                                                                                                                                                        | OUTCOME                                                                                                                                                                                                                                                                                                         | IMPACT                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>9497 hectares have been treated out of 23,743 hectares total treatable area.</p> <p>364 families have been supported with livelihood activities with INR 80.27 lakh from seed money of INR 19.23 lakh.</p> | <p>Ground Water level improved in wells and open wells up to 10 Feet.</p> <p>Cropping intensity has been doubled in 397 hectares. 726 hectares of fallow land has been brought in to cultivation.</p> <p>Farmers have contributed to generate a Corpus fund of INR 26.25 lakh for post project maintenance.</p> | <p>33,381 families benefitted<br/>Agriculture productivity has been enhanced to 150% in demo fields</p> <p>Improved the livelihood assets (Natural, social, financial, human, physical) and sustainable livelihoods opportunity.</p> <p>Reduced the vulnerabilities to floods, drought, climate change related issues etc.,</p> <p>Biomass of the project area increased. So, there is an improvement in the livestock, fuel wood and nutrition security.</p> |



Figure: Aggregate level details of watershed development



Project site before construction  
of farm pond at Kolvadi watershed, Pune



Project site after construction of farm  
pond at Kolvadi watershed, Pune



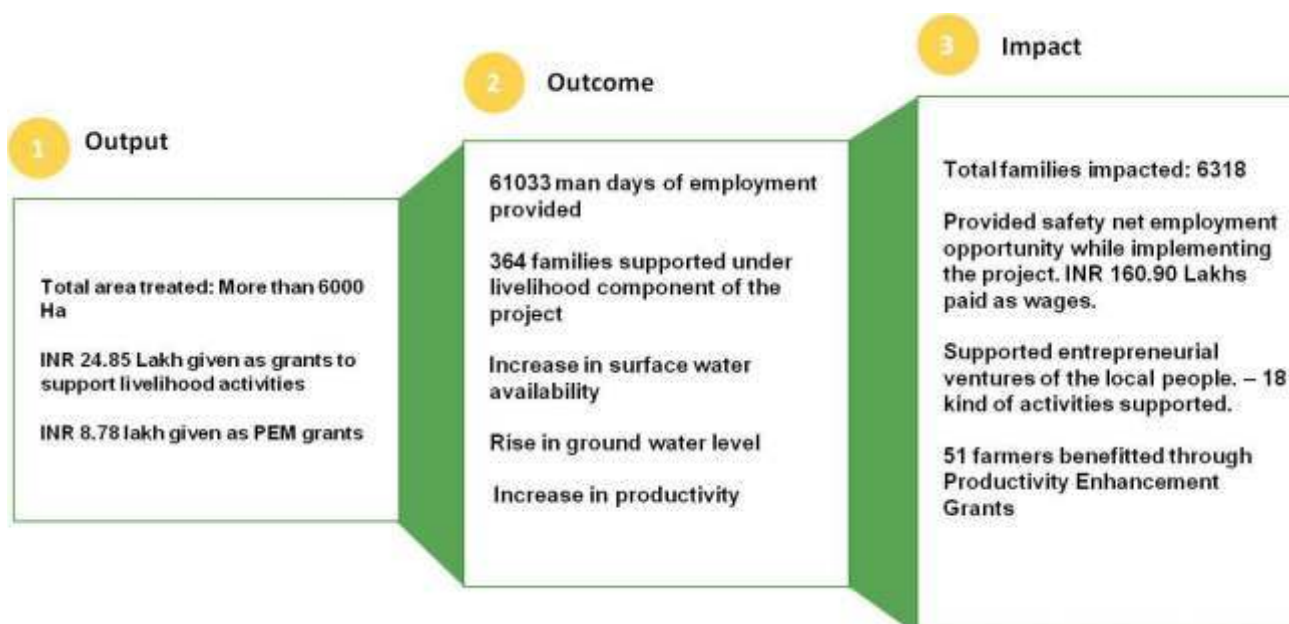
## NABARD WDF Projects in Kancheepurm District, Tamilnadu

### Project Objective:

To treat the watershed area with suitable scientific methods and improve the natural asset of the region. Additional priorities are to improve the agricultural productivity, livelihood creation and providing safety net employment.

### Project Details

|                  |                                             |
|------------------|---------------------------------------------|
| Place            | Kancheepuram district                       |
| Watershed names  | Arasur, Nugumbal, Sirukalthur & Othivilagam |
| Funding agency   | NABARD & TAWDEVA                            |
| Role of NAF      | Project Facilitator                         |
| Key stakeholders | NABARD, NAF, Government agencies, Farmers.  |



Photos: Project site before intervention



Photos: Project site before intervention



## Activity level details of NRM work

| S. No. | Details of Task carried out         | Unit | Current year | Since inception      |
|--------|-------------------------------------|------|--------------|----------------------|
| 1      | Formation of field bund             | Cu.m | 18458.14     | 163123.445           |
| 2      | Deep tilling (Chiseling)            | Ha   | 26.79        | 346.262              |
| 3      | Disc Plough                         | Ha   |              | 99.625               |
| 4      | Farm Pond                           | Cu.m | 1483.21      | 16.42.52             |
| 5      | Cattle pond                         | Cu.m | 1378.53      | 10313.32             |
| 6      | Sunken Pond                         | Cu.m |              | 845.25               |
| 7      | Water absorption trenches           | Cu.m |              | 1296.5               |
| 8      | Continuous contour trenches         | Cu.m |              | 18                   |
| 9      | Channel formation and deepening     | Cu.m | 17342.79     | 63614.630            |
| 10     | Loose boulder structures            | Cu.m | 15           | 45(Different sizes)  |
| 11     | Check Dams                          |      |              | 4(Different sizes)   |
| 12     | Agro horticulture                   | Nos  |              | 29778                |
| 13     | Agro forestry                       | Nos  | 7059         | 40894                |
| 14     | Check Weir                          | Nos  |              | 1                    |
| 15     | De-silting of village ponds         | Cu.m |              | 1(600 Cubic M Units) |
| 16     | Channel sterilizer / Regulator      | Nos  |              | 1 (One)              |
| 17     | Eri De -silting                     | Cu.m |              | 79936.6              |
| 18     | Percolation Pond                    | Cu.m | 1708.50      | 16415.00             |
| 19     | Renovation of Sirukalathur Pond     | Cu.m |              | 2499                 |
| 20     | Renovation of Thenneripattu sitheri | Cu.m | 7796.40      | 7796.40              |
| 21     | Baby Pond                           | Cu.m |              | 8925                 |
| 22     | Sluice                              | Nos  |              | 1                    |
| 23     | MIS Tank                            | Cu.m |              | 2250                 |
| 24     | Man-days                            | Nos  | 6318         | 61033                |



Photo: Treated stream and farm pond in same image



Photo: Farm pond and farm pond inlet

## Activity level details of Productivity Enhancement Measures (PEM)

Under PEM measures, Rs. 8.78 Lakhs has been sanctioned as PEM grant. This is used as Revolving Fund by giving loan to the needy farmers. Out of these funds, Watershed Committees/ SHG & JLGs also have been given loan to tune of Rs. 15.57 Lakhs to 51 families.

| S.No | Activities            | Beneficiaries |
|------|-----------------------|---------------|
| 1    | Milch Animal          | 288           |
| 2    | Provision shop        | 22            |
| 3    | Agriculture           | 4             |
| 4    | Bullocks              | 9             |
| 5    | Bakery                | 2             |
| 6    | Fancy stores          | 3             |
| 7    | Centreing             | 8             |
| 8    | Mobile Store          | 2             |
| 9    | Covering Jewelry Rent | 3             |

| S.No | Activities     | Beneficiaries |
|------|----------------|---------------|
| 10   | Goat rearing   | 9             |
| 11   | Tailoring      | 4             |
| 12   | Silks stores   | 2             |
| 13   | Tiffin centre  | 2             |
| 14   | Cycle shop     | 2             |
| 15   | Revolving      | 1             |
| 16   | Auto share     | 1             |
| 17   | ShaminaPanthal | 1             |
| 18   | Flower Shop    | 1             |
|      | <b>Total</b>   | <b>364</b>    |

Table: Type of livelihood activities supported through loan

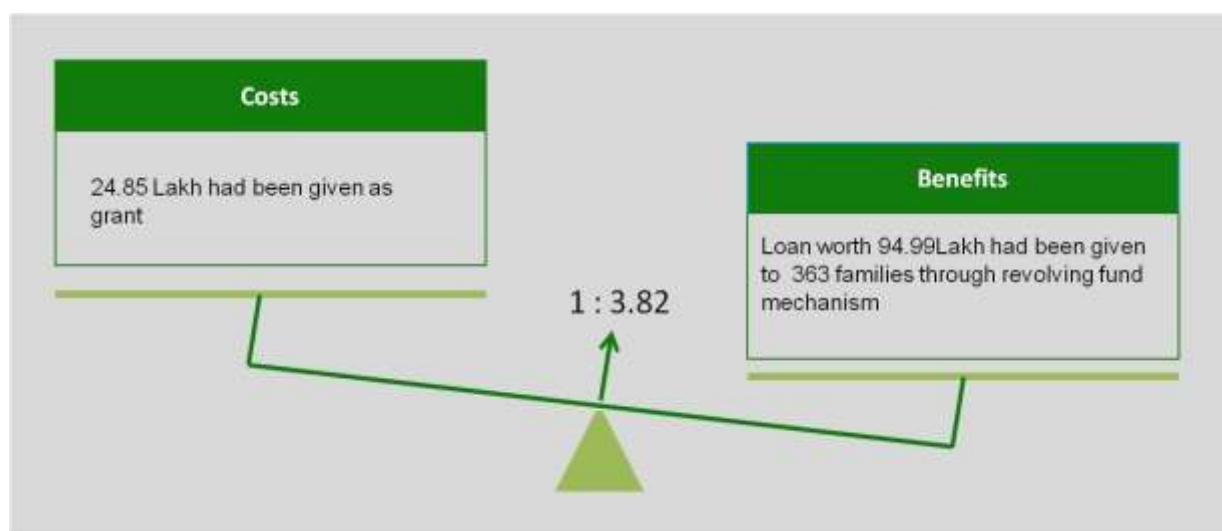


Figure: Cost Benefit analysis of NAF's grant based Revolving Fund initiatives



## Demonstrations Through Watershed Development Programme

| S. No | Particulars                       | FY 2016-17    | From inception |
|-------|-----------------------------------|---------------|----------------|
|       |                                   | Beneficiaries | Beneficiaries  |
| 1     | Kitchen Garden                    | 64            | 585            |
| 2     | Artificial Insemination           | 188           | 636            |
| 3     | Comprehensive Soil Analysis       | 146           | 402            |
| 4     | Fodder Grass                      |               | 15             |
| 5     | Paddy cultivation                 |               | 10             |
| 6     | Technology Based Agriculture Demo |               | 5              |
| 7     | Paddy cultivation & floriculture  |               | 3              |
| 8     | SRI-Paddy cultivation             |               | 5              |
| 9     | Vegetable cultivation             |               | 5              |
| 10    | Organic Farming                   |               | 1              |
|       | <b>Total</b>                      | <b>398</b>    | <b>1667</b>    |

Table: Demonstrations conducted



## L&T watershed in Coimbatore District, Tamilnadu

### Project Objective:

To treat the watershed area with suitable scientific methods and improve the natural asset of the region. Additional priorities are to improve the agricultural productivity and livelihood asset.

### Project Details

|                   |                                         |
|-------------------|-----------------------------------------|
| Place             | Coimbatore district                     |
| Watershed names   | Pappampatti and Chettipalayam           |
| Funding agency    | L&T                                     |
| Role of NAF       | Project Implementer                     |
| Key stakeholders  | L&T, NAF, Government agencies, Farmers. |
| Target population | Farmers                                 |
| Project Phase     | Implementation                          |

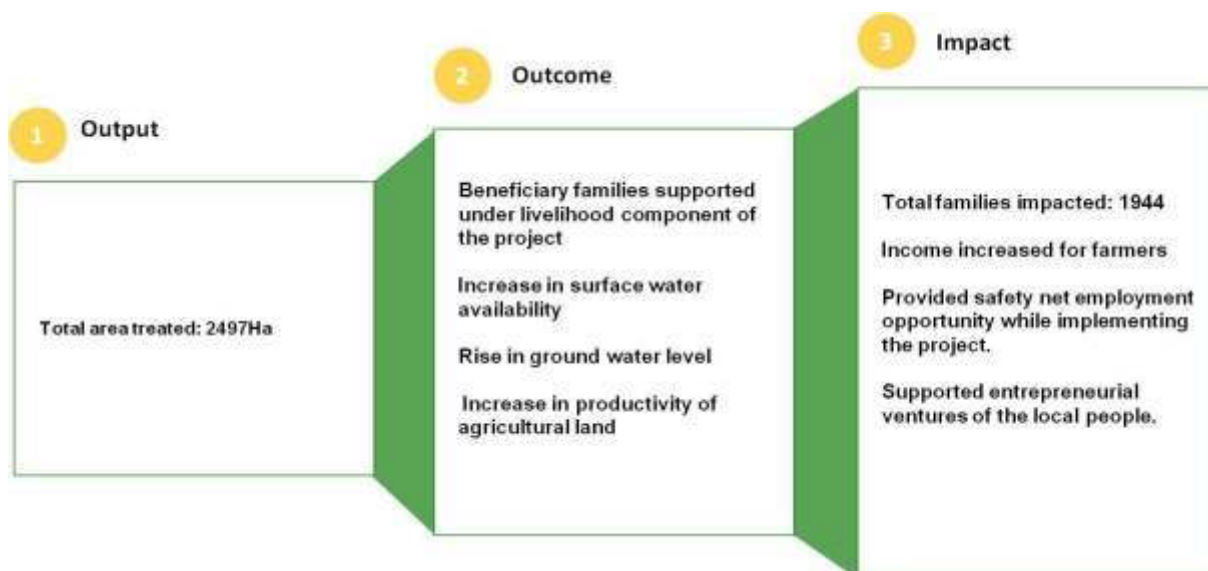


Photo: Photo of the farm before intervention



Photo: Field bund cum trenches in the farm field



Photo: Channel before excavation



Photo: Channel after excavation

## Activity level details of Natural Resource Management

| Activities                  | Unit | Current year achievement | Cumulative achievement |
|-----------------------------|------|--------------------------|------------------------|
| Field bund                  | RM   | 22074                    | 38351                  |
| Chisel Plough               | Ha.  | 123.69                   | 296.05                 |
| Disc plough                 | Ha.  | 125.24                   | 295.2 4                |
| Channel formation           | Cu.m | 17075                    | 29575                  |
| Farm pond                   |      | 8679.2                   | 15434                  |
| PT                          | Cu.m | 4094.3                   | 8448.9                 |
| Recharge bore               | Nos  | -                        | 8                      |
| Check dam 8.5               | Nos  | 5                        | 10                     |
| Check Dam 8.0               | Nos  | 2                        | 4                      |
| Check dam 10                | Nos  | 3                        | 4                      |
| GCD - Gabien Check dam      | Cu.m | 118.86                   | 133.86                 |
| De-silting of water bodies  | Cu.m | 207 4.5                  | 6074.5                 |
| Plantation                  | Nos  | 7000                     | 7000                   |
| Training cum exposure visit | Nos  | 4                        | 8                      |
| Admin cost                  | Nos  | 8                        | 16                     |

**Table: Progress of physical structures in watershed area**



**Photo: Farm land before farm pond excavation**



**Photo: After farm pond excavated**



Photo: Site before check dam



Photo: Site with water after check dam



Photo: Site before intervention



Photo: Check dam cum percolation tank



Photo: Channel cleared



Photo: Gabion Check Dam



Photo: Channel cleared



Photo: Gabion check Dam





## ‘Comprehensive Community Development Initiatives’ in Kancheepuram, Thiruvallur & Pune Districts

**Initiatives objective:** To achieving comprehensive community development through:

- Watershed Development.
- Frontline demonstrations to show case agriculture productivity improvement
- Training and capacity building of the rural community
- Establishment of common service centre
- Support to schools
- Promotion of hygiene and sanitation
- Planting of trees

| Project Details     |                                                                          |
|---------------------|--------------------------------------------------------------------------|
| Place               | Kancheepuram district, Thiruvallur District, Pune District               |
| Villages benefitted | Kolvadi, V K Agaram, Pudupettai, Vilampattu, Paduruvedu and Madharpakkam |
| Funding agency      | iNautix Technologies                                                     |
| Role of NAF         | Project Implementation                                                   |
| Key stakeholders    | iNautix, NAF, Local Community                                            |
| Target population   | Village dwellers                                                         |
| Type                | CSR Initiative                                                           |
| Project Phase       | Implementation                                                           |

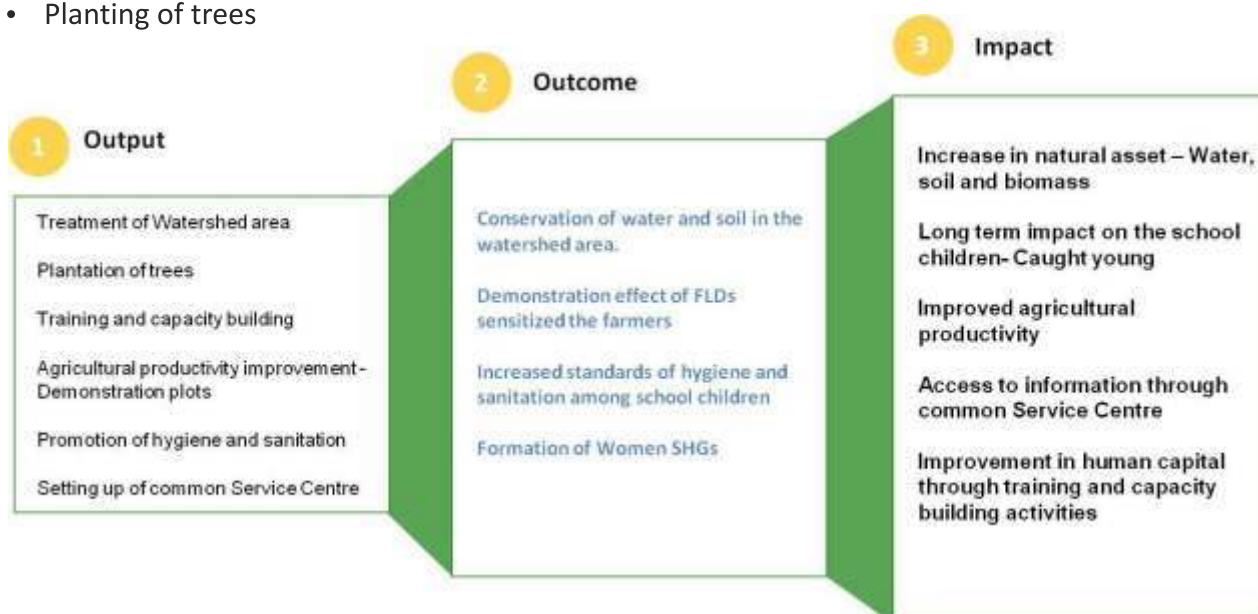


Photo: A village pond constructed at Vilampattu village through the support of iNautix

## ACTIVITY LEVEL DETAILS OF NATURAL RESOURCE MANAGEMENT:

| S.No | Village                  | Work name                    | Qty         |
|------|--------------------------|------------------------------|-------------|
| 1    | Kolvadi                  | Farm ponds                   | 4 nos       |
| 2    | Kolvadi                  | Percolation ponds            | 4 nos       |
| 3    | Kolvadi& V.K Agaram      | Check Dams                   | 4 nos       |
| 4    | V.K Agaram&Pudhupettai   | Clearance of Channels        | 6 nos       |
| 5    | Paduruvedu&Madharpakkam  | Strengthening of Field Bunds | 6091.1 cu.m |
| 6    | Kolvadi&Vilampattu       | Planting of Trees            | 3050 Nos    |
| 7    | V.K.Agaram               | Soil mulching                | 1350 cu.m   |
| 8    | Kolvadi                  | Construction of WAT          | 250 cu.m    |
| 9    | V.K.Agaram & Pudhupettai | Rejuvenation of Tanks        | 2 nos       |

**Table: Physical structures constructed under the project**



**Photo: Demonstration field under the comprehensive community development project**



**Photo: Training session about watershed management**



## San Francisco Bay Area Tamil Manram Watershed project in Kancheepuram District

**Introduction:** Floods are recurrent phenomena in these project villages. So, an integrated approach of watershed rehabilitation, flood control works, river bank revamping, etc., is carried out to prevent the floods in future and manage the water resource efficiently.

**Project Objectives:** Treatment of watershed area and constructing suitable physical structures. Primarily carrying out channel clearing works and constructing Check Dams.

### Project Details

|                     |                                             |
|---------------------|---------------------------------------------|
| Place               | Kancheepuram district                       |
| Villages benefitted | Nugumbal, Agaram, Kalpattu, Panaiyadivakkam |
| Funding agency      | US BAY Area Tamil Manram                    |
| Role of NAF         | Project Implementation                      |
| Key stakeholders    | SF BAY Area Tamil Manram, NAF, Farmers.     |
| Target population   | Farmers and local community                 |
| Type                | Philanthropic Initiative                    |
| Project Phase       | Implementation                              |

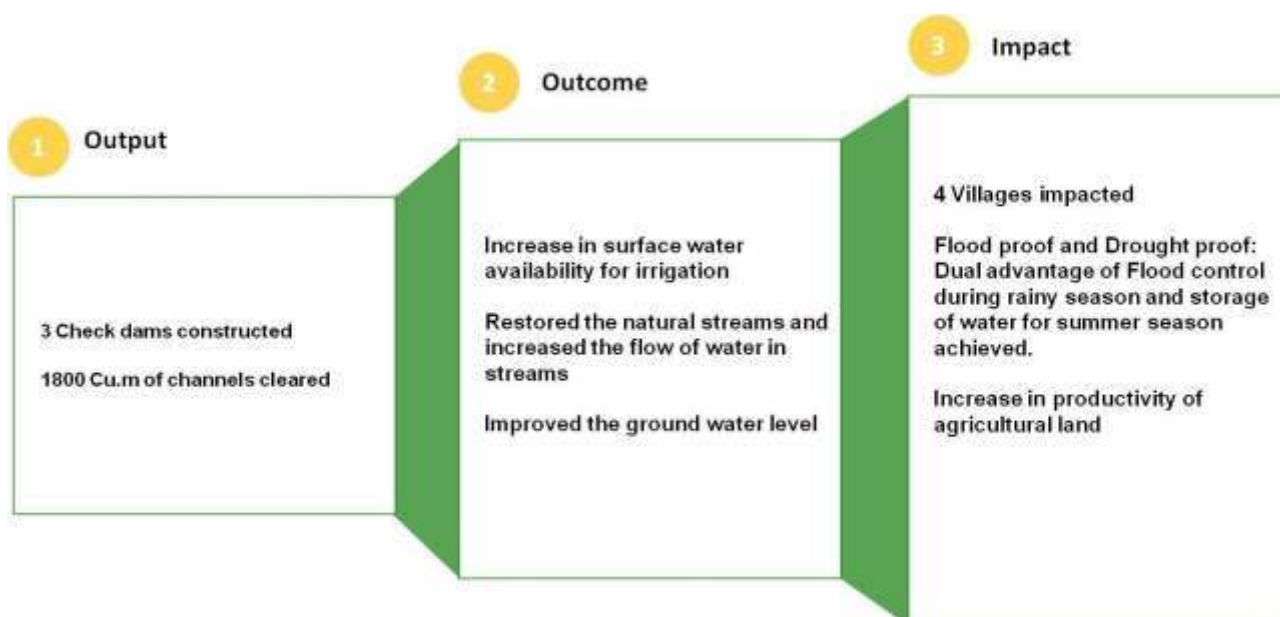


Photo: Flood control by the structure



Photo: Construction of a channel to manage the flood





**Project Objectives:** to rehabilitate the flood affected areas in Kanchipuram dist, TN

**Additional focus:** Some of the water bodies which were in dilapidated conditions were repaired and rejuvenated.

**Key Activities:**

1. Channel clearing works
2. Rejuvenation of water bodies

**Project Details**

|                     |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| Place               | Kancheepuram district                                                                |
| Villages benefitted | Manapakkam, Athivakkam, Veerabogam, Kiliyanagar, Thinnalur, Thinaiyampoondi, Athiyur |
| Funding agency      | Bahwan CyberTek (BCT)                                                                |
| Role of NAF         | Project Implementation                                                               |
| Key stakeholders    | BCT, NAF, Farmers.                                                                   |
| Target population   | People in the watershed areas                                                        |
| Type                | CSR Initiative                                                                       |
| Project Phase       | Implementation                                                                       |

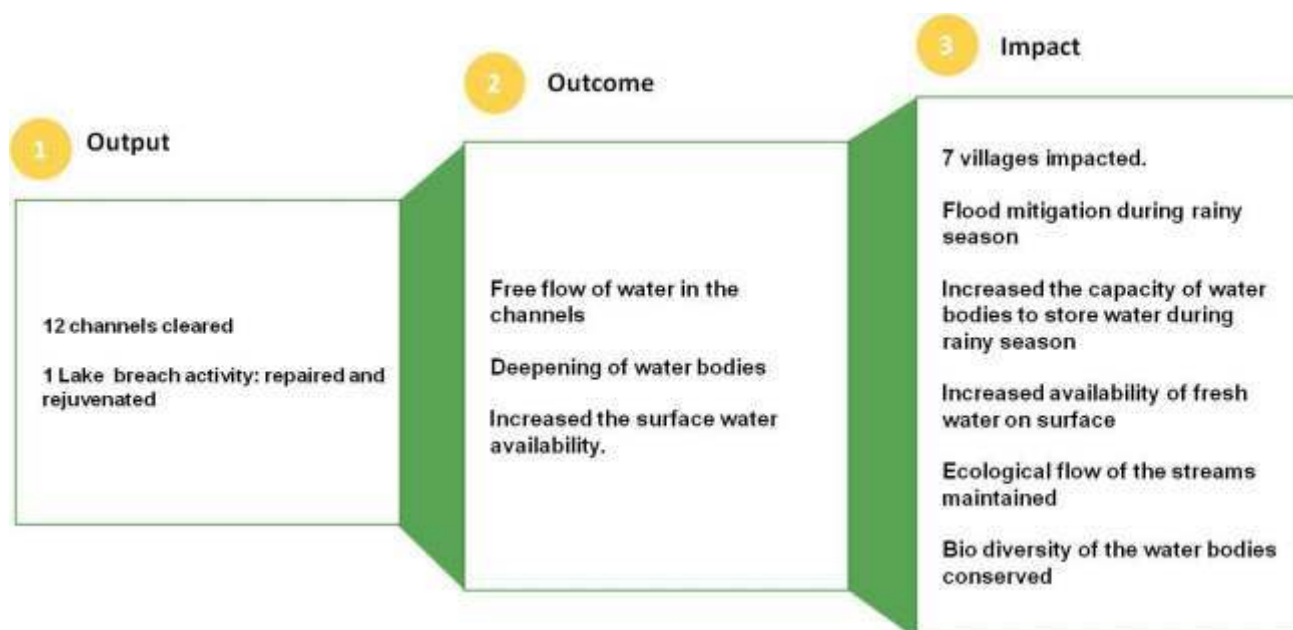


Photo: The channel is made for water drainage



Photo: The channel is cleared for water drainage





## Flood Rehabilitation Project with support from BNY Mellon through United Way Worldwide:

### Project Objective:

1. To carry out channel clearance, repair and renovation of flood affected water bodies, creation of drainage structures, and reclamation of flood affected fields
2. Promotion of livelihood through farming and agriculture micro enterprise, strengthening and handholding support for grassroots level village institutions
3. Training and capacity interventions

| Project Details     |                                       |
|---------------------|---------------------------------------|
| Place               | Kancheepuram district                 |
| Villages benefitted | V K Agaram, Pudupettai and Vilampattu |
| Funding agency      | BNY Mellon, UWW                       |
| Role of NAF         | Project Implementation                |
| Key stakeholders    | UWW , NAF, Farmers,                   |
| Target population   | People in the watershed areas         |
| Type                | Community Partnership                 |
| Project Phase       | Implementation                        |

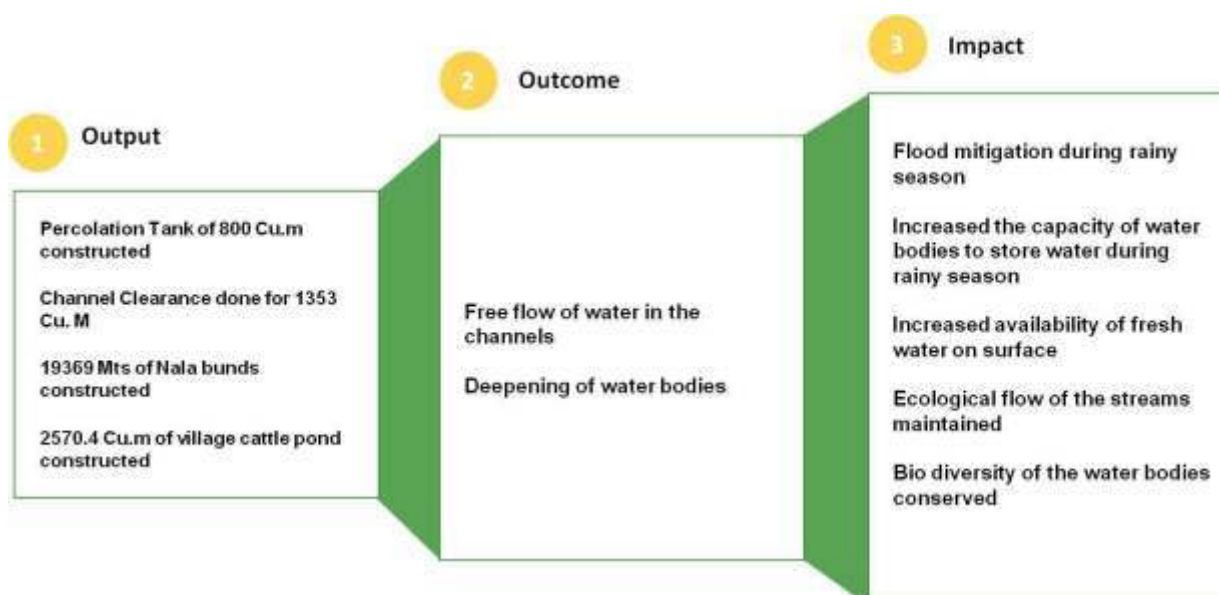


Photo: Cattle pond in V K Agaram village before project



Photo: Cattle pond in V K Agaram village after project

## Projects in Initial phase of Implementation



### Project : Bannari Amman Watershed project in Erode & Thiruvannamalai Districts

|                   |                                                                 |
|-------------------|-----------------------------------------------------------------|
| Place             | Erode & Thiruvannamalai district, Tamil Nadu                    |
| Watershed names   | KN Palayam and Melpennathur                                     |
| Funding agency    | Bannari Amman Sugars and NABARD                                 |
| Role of NAF       | Project Implementer                                             |
| Key stakeholders  | NABARD, Bannari Ammansugars, NAF, Government agencies, Farmers, |
| Target population | Farmers                                                         |
| Type              | CSR Initiative                                                  |
| Project Phase     | Capacity Building phase                                         |



### Project Details: VA TECH WABAG Watershed In Kancheepuram District

|                   |                                                            |
|-------------------|------------------------------------------------------------|
| Place             | Kancheepuram district                                      |
| Watershed name    | Pulleri                                                    |
| Funding agency    | Va Tech Wabag and NABARD (50%)                             |
| Role of NAF       | Project Implementer                                        |
| Key stakeholders  | Va Tech Wab ag, NABARD, NAF, Government agencies, Farmers, |
| Target population | Farmers                                                    |
| Type              | CSR Initiative                                             |
| Project Phase     | Launch Phase                                               |



### Project Details: Rotary Club Watershed project in Krishnagiri District

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| Place             | Krishnagiri district                                    |
| Watershed name    | Kupachiparaai                                           |
| Funding agency    | Rotary club and NABARD (40%)                            |
| Role of NAF       | Project Implementer                                     |
| Key stakeholders  | NABARD, Rotary club, NAF, Government agencies, Farmers, |
| Target population | Farmers                                                 |
| Type              | Public Private Partnership                              |
| Project Phase     | Launch Phase                                            |



### Project Details: St. Gobain Watershed project in Kancheepuram District, Tamilnadu

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| Place             | Kancheepuram district                                  |
| Watershed name    | Pichivakkam                                            |
| Funding agency    | St. Gobain and NABARD (50%)                            |
| Role of NAF       | Project Impleme nter                                   |
| Key stakeholders  | St. Gobain, NABARD, NAF, Government agencies, Farmers, |
| Target population | Farmers                                                |
| Type              | CSR Initiative                                         |
| Project Phase     | MoU Signed                                             |



**Project Details: L&T Tech Services Watershed project in Pune District, Maharastra**

|                   |                                                               |
|-------------------|---------------------------------------------------------------|
| Place             | Pune di strict                                                |
| Watershed name    | Kolvadi                                                       |
| Funding agency    | L&T Tech Services                                             |
| Role of NAF       | Project Implementer                                           |
| Key stakeholders  | L&T Tech services, NABARD, NAF, Government agencies, Farmers, |
| Target population | Farmers                                                       |
| Type              | CSR Initiative                                                |
| Project Phase     | Launch Phase                                                  |



**Project Details: Climate Change Adaptation Program in Kancheepuram District, Tamilnadu**

|                   |                                             |
|-------------------|---------------------------------------------|
| Place             | Kancheepuram district                       |
| Watershed name    | Arasur, Nugumbal, Sirukalathur, Othivilagam |
| Funding agency    | NABARD & GIZ                                |
| Role of NAF       | Project Implementation                      |
| Key stakeholders  | NABARD, NAF, Farmers,                       |
| Target population | Farmers                                     |
| Type              | PPP                                         |
| Project Phase     | DPR Submitted                               |



**Project Details: Titan Watershed in Cuddalore District, Tamilnadu**

|                   |                                                   |
|-------------------|---------------------------------------------------|
| Place             | Cuddalore district                                |
| Watershed name    | Palankottai, Valasipet, Kotteri, Manakolla i      |
| Funding agency    | Titan and NABARD (50%)                            |
| Role of NAF       | Project Implementer                               |
| Key stakeholders  | Titan, NABARD, NAF, Government agencies, Farmers. |
| Target population | Farmers                                           |
| MoU Signed        |                                                   |
| Type              | CSR Initiative                                    |
| Project Phase     | MoU Signed                                        |

## Training Division

This division aims to strengthen the human asset of the stakeholders by empowering farmers, farmer organizations, students, NAF team, NGOs, Government officials, Bankers and other relevant stakeholders etc., with required awareness, knowledge and skills.

### Key considerations of the division:

1. Our beneficiaries access to formal education limited. So, we factor in the limitation while designing the training modules.
2. Livelihoods oriented training to increase the human capabilities.
3. Rural Livelihoods are diversified. So, special training on non- farm activities also given.
4. Specific difficulties like gender related issues are considered and special focus for women farmers and other women beneficiaries are given.
5. Training for Farmer's organizations focuses achieving financial stability and environmental sustainability. Additional focus is given for marketing skills, business strategy, scale-up strategy and business plan.
6. Climate change related problem threatens the agriculture sector very profoundly. Special training on climate smart agriculture, lean farming, sustainable agriculture, Adaptive management techniques etc., is provided to increase the resilience of the farmers to the climate change related impacts.
7. Mixed methodology of classroom based and field training is adopted. Innovative teaching methods are adopted to overcome the learning difficulties of the beneficiaries.
8. We promote and facilitate lateral learning (Farmers-Farmers learning)



Photos: One of the training sessions at CFRD



## Aggregate details of Training programme

In CFRD, 3182 farmers were given training on various aspects of sustainable agriculture (Agriculture and rural development) through 101 training programs for the FY 2016-17.

| S. No                                      | Division                                                                | No. of Program | Total Beneficiaries | No. of Days |
|--------------------------------------------|-------------------------------------------------------------------------|----------------|---------------------|-------------|
| <b>Training to promote Agri-business</b>   |                                                                         |                |                     |             |
| 1                                          | Agri-business Training (19th Batch ongoing )                            | 6              | 209                 | 320         |
| 2                                          | Capacity Building Training for Board of Directors of FPOs               | 3              | 66                  | 3           |
| 3                                          | Training for CEO's of FPOs                                              | 2              | 31                  | 2           |
| <b>Training under watershed division</b>   |                                                                         |                |                     |             |
| 4                                          | Backyard Poultry Training                                               | 3              | 75                  | 3           |
| 5                                          | Aquaculture Training                                                    | 1              | 50                  | 2           |
| 6                                          | Goat Husbandry Training                                                 | 4              | 135                 | 3           |
| 7                                          | Nursery Training                                                        | 2              | 50                  | 2           |
| 8                                          | Mushroom Cultivation Training                                           | 1              | 25                  | 1           |
| 9                                          | Floriculture Training                                                   | 1              | 50                  | 2           |
| 10                                         | Integrated Farming System Training                                      | 1              | 50                  | 2           |
| 11                                         | Ve rmi compost Training                                                 | 2              | 55                  | 2           |
| 12                                         | Training for Watershed Governance institutions                          | 44             | 1343                | 27          |
| 13                                         | Training for Mahila Kisans                                              | 3              | 98                  | 3           |
| <b>Training on Sustainable Agriculture</b> |                                                                         |                |                     |             |
| 14                                         | Training on Sustainable Agriculture under iNautix CSR program           | 9              | 210                 | 13          |
| 15                                         | Train ing on Sustainable Agriculture under FPC Program                  | 4              | 214                 | 4           |
| 16                                         | Climate Smart Agriculture for FPO Lead Farmers                          | 1              | 103                 | 1           |
| 17                                         | Intensive training on Sustainable Agriculture under Apollo CSR project. | 3              | 60                  | 3           |
| <b>Other Training programmes</b>           |                                                                         |                |                     |             |
| 18                                         | Training on Farm machineries                                            | 1              | 16                  | 3           |
| 19                                         | Rural Work experience programme for students                            | 1              | 6                   | 10          |
| 20                                         | Training to Anna University students - exposure visits                  | 1              | 32                  | 1           |
| 21                                         | Programme on crop insurance                                             | 6              | 225                 | 6           |
| 22                                         | Training for Panchayat level institutions                               | 2              | 67                  | 6           |
| 23                                         | Farm visit Programme for School children                                | 1              | 27                  | 1           |
| 24                                         | Seminar on promotion Medicinal plants                                   | 4              | 166                 | 4           |
| Total                                      |                                                                         | 101            | 3182                | 399         |

Table: Training Consolidat ed Report April 2016 to March 2017

## ACABC Training Program:

Agri Clinic and Agri Business Centre (ACABC) is a Government of India (Ministry of Agriculture and Farmers Welfare) unique program to tap the expertise of available Agricultural graduates, Agri Diploma Holders, Veterinarians, etc., to offer professional extension service to farmers and thus, enhancing the agricultural development in India. Out of 82 Nodal Training Institutes (NTIs) in India and 6 in Tamilnadu, NAF is one of the NTI that provides best of all entrepreneurial skill to agriculture graduates and also enable them become a best extension provider to rural agriculture.

NAF has conducted 5 ACABC training program for 174 agri-preneurs for this FY 2016-17 in which 35 candidates have started business successfully after completing the training with their own investment. 10 agri-preneurs got loan against the project they selected with a subsidy from NABARD to a tune of 44% for women and SC/ST & candidates, 36% for BC, MBC, OC men candidates and to a maximum of 20.00 Lakhs term loan.



Photo: A training session in classroom



Photo: A training session on field



Photo: Technical training for women farmers



Photo: Technical training for women farmers

## Lean Farming Training to FPC Farmers Supported By Pershing India:

Pershing India, one of the leading Corporate Sector Companies had supported NAF's initiative of serving the farmers through training to help the farmers to improve the productivity under its Corporate Social Responsibilities (CSR). The members of the Farmers Producer Organizations (FPOs) promoted by NAF in the Northern districts of Tamilnadu were given training on Scientific Farming practices that are to be followed to improve the farm productivity on a sustainable manner. This training on Lean Farming for Agriculture Productivity Improvement includes sensitizing the farmers on Good Agriculture Practices like Comprehensive soil health and fertility management, Modified land management, Natural and Integrated Pest Management through one day training program. Number farmers trained: 243 farmers.



**Photo: Demonstration of small farm equipments**



**Photo: Exhibition of farm inputs for learn farming**

## ATMA Training Program:

ATMA – Agriculture Technology Management Agency is a centrally sponsored scheme implemented by Government of Tamilnadu to strengthen the Extension, Research and Farmers Linkage to disseminate agricultural technologies. NAF is a technical training partner of ATMA. NAF organized various training programs to the farmers on IPM, INM, IDM measures for various crops, Minor Millet Production etc. NAF has organized 6 training programs which benefits 225 farmers in this year.

### INSTALLATION OF MICROIRRIGATION SYSTEM WITH SOLAR PUMP IN CFRD

Under support from VA Tech WABAG, CFRD farm has been equipped with

- Micro Irrigation - Installation of Drip & Sprinkler System 2.40 acres
- 3 HP solar pumps.

To have a model cum demo of the technology in CFRD farm, for showcasing the benefits of water management through micro irrigation and Solar powered pump system, NAF have established Drip & Sprinkler irrigation and Solar pumping system in 2.4 acres of farm land. Since its installation, nearly 400 farmers have been benefitted under the training programme. The participants were able to appreciate the importance of Micro irrigation coupled with Solar Pumping system to bring more of dry lands under cultivation and to augment the water use efficiency.



Photo: farmers seeing Solar pump



Photo: Crops irrigated through sprinklers



## Training On Climate Smart Agriculture Supported By KLA Tencor

KLA-Tencor is the long time leader in manufacturing semiconductor equipment and yield management software process control player in the industry. KLA Tencor through its CSR funding sponsored training programme to farmers on “Climate Smart Agriculture”. The main aim of the programme is to train and build the capacity of farmers to face the challenges of climate change vulnerabilities through climate smart agriculture (which will act as both mitigation and adaptation strategy). As a one day program, 204 farmers from district of Kancheepuram, Thiruvanamalai, Villupuram, Cuddalore have attended the training session.



Photo: Climate smart Agriculture training for lead farmers supported by KLA Tencor

## TNPVP - ESTABLISHMENT OF AGRI BASED MICRO ENTERPRISE TRAINING:

Government of Tamilnadu under its Pudhu Vazhvu Project has selected NAF as a training partner for Capacity Building of its selected Common Livelihoods Group (CLGs) on Establishment of agri based micro enterprises. As a 2 day residential program, 67 CLG members are trained at NAF CFRD training centre on various module – Bio compost Production, Shadenet Nursery, Input centre, Agri Army Labour etc.

## Social Development Division

As NAF's exit policy for every project is "community ownership", it continuously works towards creating a self-reliant rural community. Our focus is on institutional strengthening of community based organizations and financial inclusion. Our aim is to build a spirit of cooperation, equity, equality and collective ownership among rural people. Since our inception we are promoting & nurturing community-based institutions like Farmers Clubs, Self Help Groups, Joint Liability Groups, Farmers Producer Organizations, Watershed committees etc. for collective decision and action thereby, ensuring empowerment through participatory & transparent Governance Mechanism.

### Key Activities:

1. Formation/Strengthening of community level organization through Self Help Group Approach.
2. Fostering Financial Inclusion through bank account opening, facilitating farmers to access to insurance products, arranging scholarship for school children, making bank linkages to SHGs, Micro loans through NAF revolving funds, etc.,

### SHG

New account opened: 25  
SHG's

### NAF revolving fund

No of Beneficiaries: 24

Loan Amount: INR 1.2 Lakhs

### Bank Linkages

No of SHG's Credit linked: 76

Credit access created:  
INR 4.15 Cr

### Bank Linkages

No of Beneficiaries: 1610

Scholarship facilitated to 104

Scholarship amount  
INR 12480

Insurance coverage to 1504

Death claim for 2

## Laboratory Services Division

### Provide reliable data, analytics and evidence:

NAF pioneered the setting up of modern laboratories for soil testing and food testing laboratories recognising the need for such technology intervention in the agriculture and rural development sector. NAF is first NGO in India to get accreditation in the area of agricultural soil testing.

**Soil & Water Testing:** NAF Soil Testing Lab has been providing comprehensive soil health diagnostic services for agriculture development for the past 16 years. Accurate information regarding the important environmental factors (like soil and water) is crucial to improve the agricultural activities. Our works under this division helps the farmers, field level functionaries, and other partner organizations to discover ways to better manage soil and water resources for soil fertility and crop productivity enhancement and reduce loss due to sub-optimal crop production, weeds, pests, disease, and other threats.

**Food Testing:** Analysis of food products and advisory for compliance to FSSAI Standards, nutritional analysis for labelling purposes, etc., are testing Food & Water Samples for microbiological quality and swab samples for monitoring Good Food Hygiene, Sanitation and Personal Hygiene Practices.

**Plant tissue culture laboratory:** R& D in micro propagation of selected medical plants, project guidance and training to the students.

**Training and Academic programmes:** NAF not only maintains the laboratories to International standards, but also conducts awareness programmes, workshops teaching and training programs to extend the usage of these technology services by other stakeholders.

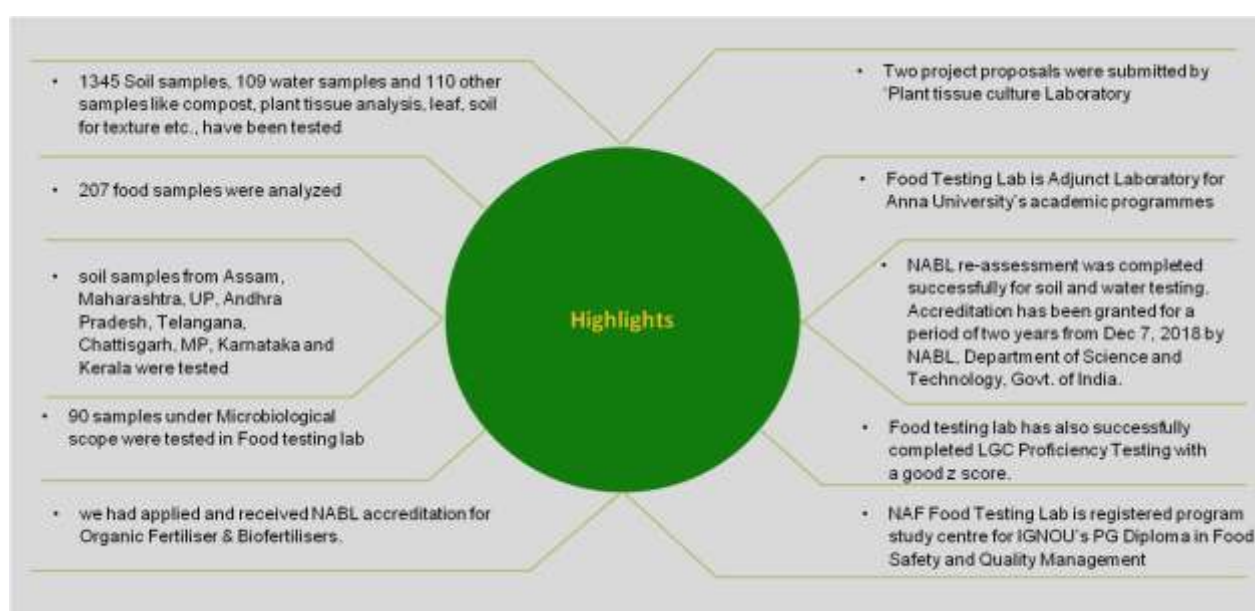


Figure Selected key highlights

## Detailed information about the activities

### Soil Testing Lab

#### Analytical Services

- NAF Soil Testing Lab provides analytical services for comprehensive soil analysis for agricultural productivity enhancement, water quality, organic fertilisers, leaf analysis etc. During 2016-17, bulk soil samples were received from organisations such as CMF-IFMR, Sampada Farms and Consultants and Ponni Sugars (Erode) Limited.

#### NABL Accreditation

- NABL re-assessment was completed successfully for soil and water testing. Accreditation has been granted for a period of two years from Dec 7, 2018 by NABL, Department of Science and Technology, Govt. of India. Keeping in view the growing demand for certified organic inputs like organic fertilisers, we had applied and received NABL accreditation for Organic Fertiliser & Bio-fertilisers.

### Food Testing Lab

ISO/IEC 17025:2005 Accredited for Chemical Scope



**Photo: A training session for Food Technology Students**



**Photo: A Student doing experiment**

NAF Food Testing Lab has been carrying out Analysis of Food products for Compliance to FSSAI Standards & Nutritional Analysis for Labeling Purposes. The Microbiological laboratory is testing Food & Water Samples for microbiological quality and swab samples for monitoring Good Food Hygiene, Sanitation and Personal Hygiene Practices.

The lab has been Re-accredited as NABL Laboratory for the period Dec 2016 – 2018 with a widened scope covering 10 categories.

- During April 2016 to March 2017, total of 257 food samples were analyzed.
- 112 samples under Microbiological scope were tested.

The lab has also successfully completed LGC Proficiency Testing with a good z score.



## Training programmes, workshops, academic programmes:

### Adjunct Laboratory for Anna University:

NAF Food Testing Lab is Adjunct Laboratory for Anna University's B.Tech and M.Tech Food Technology Programs and B.E Agri & Irrigation Engineering Programs.

- Model Practical exam (2015 batch) was conducted on 15th April 2016 for 30 B.E Agri & Irrigation Engineering students. Regular end semester exam was conducted on 18th April 2016.
- Lab session for advanced food analysis was conducted during July 2016 for 21 M.Tech (FT) students.
- B.E. Agri Irrigation (2016 batch) practical sessions were conducted during January and February 2017. Model practical exam for the current batch are scheduled for 25th, March 2017.
- Students of B.Tech and M.Tech Food Technology are using the lab facility for their end semester project work. These students are given hands on training in proximate analysis of foods. During this period, 2 PhD Research Scholars, 7 M.Tech and 10 B.Tech Food technology students have completed their lab work and a total of 75 samples (261 test parameters) have been analyzed.

### IGNOU (Indira Gandhi National Open University):

NAF Food Testing Lab is registered program study centre for IGNOU's PG Diploma in Food Safety and Quality Management.

- Chemical and Microbiological Lab counselling sessions are being conducted for eight students of IGNOU PGDFSQM batch 2016.

### Projects and Training:

- One M.Sc Zoology student has completed her end semester projects in food analysis and food microbiology.
- 34 students have undergone one week hands on training in instrumental analysis, Chemical analysis of foods for proximate analysis and food microbiology.
- National Agro Foundation & Bhaktavatsalam Memorial College for Women Joined hands under Laboratory cooperation program and organised a Hands on training in 'Instrumental analysis of Foods' & 'Microbial analysis of food and water' from February 13 - 17, 2017 at National Agro Foundation, R&D Centre, Taramani, Chennai. 19 UG students attended the training program.
- Head – Food Testing Laboratory participated in the training program for representatives of Producer Organizations Promoting Institutions under Produce Program of NABARD organized by CIKS in Chennai on 26th July 2016 and 30th August 2016 and delivered a lecture on “Awareness of Food Safety Act 2006 and Regulations 2011” for small food enterprises.

## Workshop:

Awareness Workshop on Food Safety and Quality Regulations for Rural Food Enterprises was conducted by NAF along with iNautix under the Comprehensive Community Development Initiatives. The workshop was conducted on 25th January, 2017 at Pathirivedu Village, Gummidipoondi Block, Thiruvallur District. The event was a grand success with an overwhelming response of 400 participants. This workshop aimed to create awareness on the various Food Safety Rules and Regulations, Good Hygienic Practices and Food testing that is needed to help the rural food enterprises to sustain in their business.



Photos Food safety awareness workshop supported by iNautix

## Other Events / Programs

### CORPORATE VOLUNTEERISM PROGRAM:

Volunteerism programme of NAF provides employees of corporate companies and our partner organizations a channel for civic engagement and be a part of the solutions. It enables motivated individuals and groups to interact, learn from our grass root level actions through to the national and global contexts.

Our partner organizations and corporate companies offer us untapped potential for our developmental efforts. We strongly believe that volunteerism will be a powerful resource to bring skills, knowledge and expertise to complement our development solutions and resources. We open more spaces for volunteers. NAF also recognises and appreciates the efforts made by the corporate to provide the space and supportive environments which encourage employee participation and initiatives.

Various reports suggest that volunteerism also improves employee engagement with in organizational space. It also enables individuals to develop the abilities to engage and participate beyond the routine work. It is possible that we can broaden the number of volunteerism programmes and people, who can participate in our activities. This annual report calls for much greater engagement with volunteers and volunteerism in all its forms in coming years.



**Photo: Participants from iNautix during their rural development activities**



iNautix Technologies India Private Limited, a group company of Bank of New York Mellon - a leading financial services provider is partnering with NAF for Community Partnership Initiatives since 2013. 319 of its employees participated in 6 programs. They participated and contributed to activities like tree planting, strengthening of canals, digging of farm ponds, creation of water absorption trenches etc.



Photo: Participants from iNautix in Plantation drive

Plantation, Afforestation

Village assets creation  
for NRM

Awareness Generation

Social Mobilisation

Employee Engagement

Promoting Volunteerism



Pershing India is a subsidiary of The Bank of New York Mellon Corporation also joined hands with NAF under Corporate volunteerism. 243 of its employees participated in 7 programs. They Photo: Volunteers from Pershing India doing channel clearance activities contributed time and efforts for planting of trees along farm ponds, farm bunds; channel clearance; creation of water absorption trenches etc.



**Photo: Volunteers from Pershing India doing channel clearance activities**



## NMPB – NAF Seminar On Medicinal Plant Cultivation:

Commemorating the birth anniversary of Our Former President Dr Abdul Kalam, NAF organised a seminar on “Awareness program on Medicinal Plant Cultivation”. It was supported by National Medicinal Plants Board, GoI. The Medicinal Plants Seminar was organized to educate the farmers about cultivation of high value medicinal plants as alternate cash crops, to disseminate information about Government of India schemes for plants cultivation and including export. The subject were 120 farmers from various parts of Tamil Nadu participated in the seminar.



Photo: Awareness Program on Medicinal Plants for farmers

## RAWE (Rural Agriculture Work Experience):

Many Agriculture pursuing students under the RAWE tied up with NAF to learn various activities of NGO, role of NGO towards rural development etc. Under this programme, 6 students from Adhiparasakthi Agricultural College, Kalvai visited NAF and spent 10 days and learnt about various grassroots activities of NAF.

## FIELD VISIT OF ANNA UNIVERSITY STUDENTS:

As a part of internship, 32 M.E students from Anna University visited NAF project areas to practically learn about the watershed management physical structures, the Economic Impact of Milch animals on development of villages and other engineering aspects of the developmental projects.



Photo: Anna University Students during their field visit

## Awareness Programme For School Children:

School Children from Chennai visited NAF to learn about agriculture and understand the hardship of the farmers to produce food. This educational trip also gives them exposure about rural India, village life, etc. This year 27 students participated in this program. The larger idea of the programme is to create likeliness and inclination towards rural India, Natural resources and agriculture among the participant children.



Photo: School students visiting NAF model farm





## Research Activities

### ADAPTIVE RESEARCH PROGRAM WITH CLRI – CSIR:

NAF is implementing an adaptive research program on characterization and testing of Fur Compost derived from animal skin in partnership with Central Leather Research Institute (CLRI)-CSIR. The Fur Compost developed by CLRI has been characterized and research trials have been established to study the dosage levels for application and its efficacy on rice crop. The trial is being conducted in three locations of Kancheepuram district.



Photo: Fields divided for experiment



## Research Study Under IFMR LANSA (leveraging Agriculture For Nutrition In South Asia)

Agricultural labour force participation among mothers has been shown to have detrimental effects on health and nutritional outcomes for both mother and child. Female agricultural labours have less time to dedicate towards managing the diet and health care of their children. Therefore, time- and labour-saving technologies, such as mechanization, that enable women to dedicate time to caring for the health of their children have the potential to improve nutritional outcomes. Therefore, replacing female family labour with mechanized alternatives has the potential to be largely beneficial. This study aims to assess the feasibility of promoting a machinery rental market between large and smallholder farmers, by identifying potential constraints to adoption. (LANSA Project- IFMR LEAD)

### Research title:

'Female agricultural labour and nutrition:  
Resolving conflicting time demands'

### Objectives of the research:

To understand the 'willingness to pay' for the transplanting machines by the farmers.

### Key Activities

1. Administration of base line study and willingness to pay survey.
2. Helping interested farmers to use transplanting machines through training and introducing them to service providers.

### Project Details

|                   |                                                      |
|-------------------|------------------------------------------------------|
| Place             | Kancheepuram                                         |
| Funding Agency    | IFMR Lead                                            |
| Role of NAF       | Administering Research Study                         |
| Key stakeholders  | IFMR LEAD, NAF, Women agriculture labourers, Farmers |
| Target population | Women agricultural labourers                         |



Photo: Some Farmers adopted mechanised farming during the research study

| OUTPUT                                                            | OUTCOME                                                                                                                                  | IMPACT                                                                                                  |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Administering the research study in collaboration with IFMR Lead. | Understanding the feasibility of promoting Agri-machinery rental market among farmers, by identifying potential constraints to adoption. | The information generated through the research study will be used in making effective policy decisions. |

## New initiatives:

### MoU with Bhaktavatsalam Memorial College (BMC) for Women

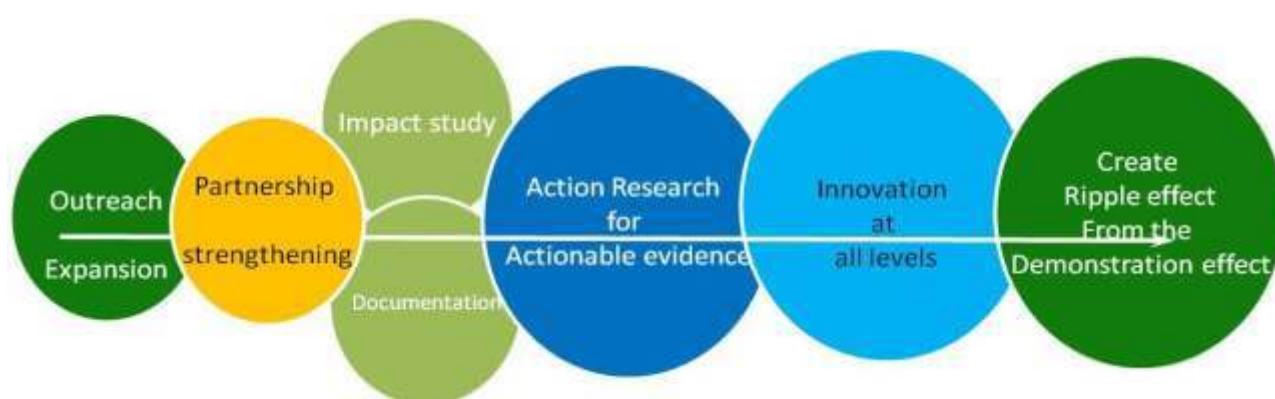
NAF has signed MoU with BMC on Dec 9, 2016 for the Laboratory Cooperation Program for the period of two years. Activities proposed under the MoU include extending Lab facilities to BMC students, jointly organizing Seminars, Conferences, Workshops and short-term training programs for the students in the areas of Food Safety, Microbiology, Instrumental Analysis and Plant Tissue Culture, working for joint research project etc., NAF will act as practical learning centre for B.Sc and M.Sc Students of BMC in the related areas.

### Our people participated in Events/Training Program

- Dr S V Murugan attended a training program On Wet lands, IWRM and Food security course conducted by Wageningen University (CDI) in Holland with NFP fellowship in July 2016.
- Ms R Kalpna attended a workshop on Green Climate Fund held during 24th-26th October 2016 at NABARD.
- Dr M R Ramasubramaniyan has undergone two weeks International training on Consideration Agriculture organized by International Maize and Wheat development centre (CIMMYT) at Ludiana, Punjab in November 2016.
- Dr S V Murugan and Ms. Ellakiya Priya have presented a paper on Watershed Management at the Centre for Water Resource (CWR) organized by Anna University in February 2017.

## Road Map

### To coming years



|                                       |                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expanding outreach                    | <ul style="list-style-type: none"> <li>• Expanding our activities to more villages and more families for creating positive impacts</li> <li>• Reaching out to more strategic partners for co-ordinated actions</li> <li>• Empowering many more farmers, students, farmer organizations and community organization through training and capacity building</li> </ul> |
| Supporting CSR projects               | <ul style="list-style-type: none"> <li>• To leverage the strengths of Corporate and private sector organizations in achieving social objectives</li> <li>• To help the private sector organization to achieve sustainability objectives</li> <li>• To work the triple bottom line framework – People, Planet, Profit</li> </ul>                                     |
| Deepening grass root level connection | <ul style="list-style-type: none"> <li>• Strengthening our Entry Point Activities and innovating new 'Participatory Action Management' Methods</li> <li>• Achieving beneficiary control level of the participatory ladder in the exit stage of all the projects</li> </ul>                                                                                          |
| Generating actionable evidence        | <ul style="list-style-type: none"> <li>• Testing new techniques and practices through experiments in field and stakeholder engagement.</li> <li>• Generating case studies, success stories and best practices documents</li> <li>• Conducting Action Research cutting across all the divisions to feed the results into decision making frameworks</li> </ul>       |

## Beneficiaries Speak

"We learnt about Mushroom growing and composting techniques. All the arrangements including food, venue etc., are very good. We like to attend more such sessions."

**V Gunasekaran** (FPO lead farmer), Korakkottai, Thiruvannamalai Dt., Climate smart Agriculture training. Beneficiary of Climate smart Agriculture training supported by KLA Tencor.

"We understood the importance of doing agriculture in the context of changing climate and learnt how to produce more crop form small land with less water. We will practice these techniques in our land."

**E. Chandra Sekaran**(FPO lead farmer), Viluppuram District, Beneficiary of Climate smart Agriculture training supported by KLA Tencor.

"The works like deepening of tanks, clearing of natural drainage streams, construction of bunds will effectively prevent floods in near future in our villages (V K Agaram, Pudhupettai and Vilambattu villages) "

**Saravanana. C** Beneficiary of iNautix project- Rejuvenation of water bodies in flood affected areas.

"The works like deepening of tanks, clearing of natural drainage streams, construction of bunds will effectively prevent floods in near future in our villages (V K Agaram, Pudhupettai and Vilambattu villages) "

**Saravanana. C** :Beneficiary of iNautix project- Rejuvenation of water bodies in flood affected areas.

"Recent floods affected our lives drastically. We were not able to carry out our livelihoods activity for over one month. All these affected areas have been rejuvenated by National Agro Foundation and iNautix. Women from the village are being trained by Self Help Groups. Due to this, all women are now being exposed to the outside world and feeling empowered."

**V Manjula**: Beneficiary of iNautix project- Rejuvenation of water bodies in flood affected areas.

"Learnt the importance of soil testing and learnt the methods of learn farming and organic farming. I shall also teach my learning to other farmers in my village."

**Rajesh**, Vasthiam Puravadi village, Villupuram Dt., Beneficiary of Learn farming training supported by Pershing India

"I learnt that it is possible to earn profit by using organic fertilizers and learn farming methods. I shall try them in my farm. Other component of training like food is excellent."

**S Kaviarasu**, Nagalampattu, Villupuram Dt.,Beneficiary of learn farming training supported by Pershing India.

"We all learnt lots of thing about low cost farming techniques. But I would request to give us practical training in our fields from planting to harvesting season. So, we will completely understand the methods and techniques more practically."

**C. Sivagnanam**: Beneficiary of learn farming training supported by Pershing India.



## National Agro Foundation Trust Board



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ADB



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Educational Society  
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## Our Supporters



## Registered Office

### National Agro Foundation

"River Side", 2, River View Road,  
Kotturpuram, Chennai - 600 085,  
Tamil Nadu, India.

### NAF Research & Development Centre:

Anna University Taramani Campus,  
CSIR Road, Taramani, Chennai - 600 113,  
Tamil Nadu, India. Phone: +9144-22542598/ 22542803  
Fax: +9144- 22542598 | Email: nationalagro@gmail.com

### NAF Centre for Rural Development:

376/1, Illedu village, Cheyyur Taluk,  
Kancheepuram District - 603 401,  
Tamil Nadu, India. Phone : +9144-2754 5800/ 2754 5501.  
Email: naf.cfrd@gmail.com

### Project Offices:

National Agro Foundation,  
Amman Koil Street, Madharpakkam Village,  
Thiruvallur District - 601 202, Tamil Nadu.

### National Agro Foundation,

No. 18, Siva Sri Graden, Thirukumaran Nagar,  
Singanallur, Coimbatore - 641005, Tamil Nadu.

### NAF Centre For Rural Development

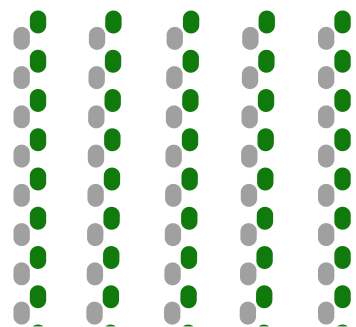
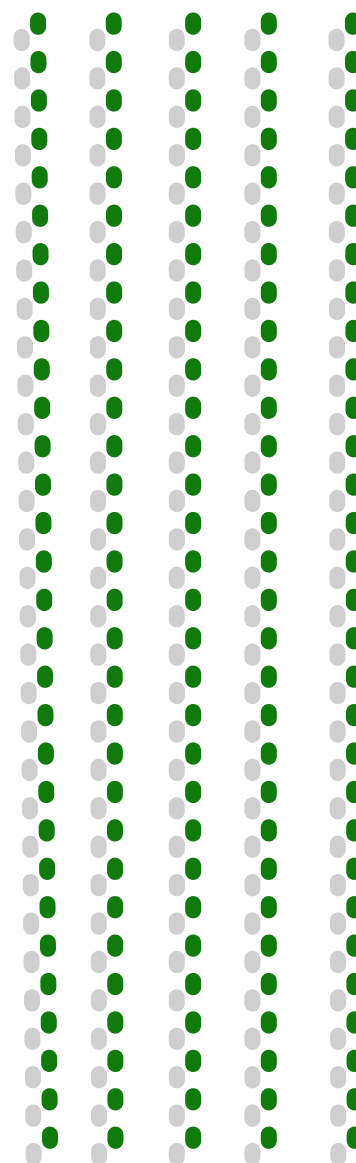
C/o V Ramesh Reddy , Reddygari Koda, Sodam,  
Chittoor District – 517123, Andhra Pradesh.

### National Agro Foundation

Room No. -56 SRIT (Sambalpur Regional Improvement  
Trust), Colony At/Po.- Budharaja Sambalpur-768004,  
Odisha.

### National Agro Foundation

Flat No- 304, Building No. 8, Swapnalok Nagari,  
Nasrapur, Tal - Bhore, Pune - 412206, Maharashtra.









**NATIONAL AGRO FOUNDATION**

Research & Development Centre  
Anna University Taramani Campus,  
CSIR Road, Taramani, Chennai - 600 113,  
Tamil Nadu, India. Phone: +9144-22542598/ 22542803  
Fax: +9144 - 2254 2598 | Email: [nationalagro@gmail.com](mailto:nationalagro@gmail.com)