

The background of the cover is a photograph of a beach cleanup activity. In the foreground, a person is bent over, sorting through debris on the sand. In the middle ground, another person in a white shirt and orange vest is standing near a large blue tarp. A third person in a purple shirt is visible further back. The scene is set on a sandy beach with the ocean and a cloudy sky in the background.

Annual Report

2011-2012

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Overview

The year 2011 has been business as usual at TIDE. We have continued to respond to the needs of society – delivering projects that have a significant impact on the community. This is what has given us the purpose and momentum over the last 19 years.

This year we have set up a Women's Technology Park at Aralaguppe, Tiptur taluk, Tumkur District of Karnataka with the objectives of providing rural women access to various technologies for livelihood and to provide them with a safe environment to work and earn a livelihood. Awareness meetings and technical training for women are conducted every month. Two groups of women have commenced enterprises from the premises.

Another important development this year has been the recognition of our efforts, to bring in energy efficiency in the tea sector, by the Tea Board. TIDE has been invited by the Tea Board of India to work with the tea plantations and factories in the North East.

Supplementing its efforts towards water security for communities, TIDE has taken up water audits as one of its activities. This would enable the community to get a better understanding of the demand, supply and usage of available water. TIDE trained entrepreneurs have also started implementing rainwater harvesting projects. This year the entrepreneurs have implemented 13 installations.

We are also reaping the rewards of our strategy to use Sustaintech India Pvt. Ltd. (SIPL) for rapid dissemination of our products. In the last year SIPL has disseminated over 470 products, more than all our other entrepreneurs combined.

This year the senior staff attended trainings on project documentation as part of their capacity building.

The year 2011 has been a year of significant success and the core of these achievements is the consistent ability of TIDE and its staff to innovate in order to sustain relevance. Our success is due to the people we employ and I am proud of their energy and commitment.

There is much to do in the coming years and I believe with the help of our partners and funders we can continue to make a significant and growing contribution.

Svati Bhogle

Core Grant

Supported by **Department of Science and Technology, Government of India**

The SEED division of Dept. of Science and Technology (DST), Government of India continued support through core grant has helped TIDE to develop and improve its products on biomass based energy efficient devices. The energy group in TIDE has been able to develop new products with support from core grant. The energy group was involved in the development of an effective insulation for institutional cook stoves. Moreover, TIDE has designed, developed and tested prototypes of cook stove using different fuels and also successfully launched it in Tamil Nadu and Karnataka with the help of stove entrepreneurs. About 5 entrepreneurs engaged in informal other artisanal industries have also been trained in the fabrication of stoves pertaining to jaggery making, khova making, water heating, and institutional cooking applications.

Core Support has also helped us to set up an energy product design and development facility (EPDDF) at TIDE which houses advanced digital instruments like temperature data-logger, humidity data-logger, load cells, IR thermometer, moisture meter and flue gas analyzer which are being used to conduct experiments to understand the performance of stoves.

A survey was also organized by TIDE to collect data about fuel saving, emissions, and user feedback on conventional and Improved Cook Stoves (ICS) installations in Tamil Nadu. This helped us to create a field based report on the stove performance and to understand the awareness of ICS and other energy products in rural areas.

The products launched by TIDE in 2010-11 were charcoal based cook stoves, sloping grate stoves for loose biomass fuels, tava stove for large scale cooking application, and cylindrical tea kettle. These products experienced the entire design path starting from idea to prototype development.

Fabricators have also been trained in the making of these stoves. TIDE energy team has also been able to incorporate commercially viable solutions from refractory industry to meet the demands of the hotel stoves. The weight of the existing tava stove has been reduced by 56% by changing the material for insulation.

The various lab-based tests carried out in EPDDF to understand the stove performance has also been documented. Interactive user-manuals for different cook stoves have also been developed.

The water management group created awareness on water conservation practices and rainwater harvesting. The water group has developed methodology for conducting water audit. Two volunteers were trained in the methodology of conducting water audits in apartments.



Testing of the double door idly making stove

Measuring ground water levels in borewells



The volunteers conducted the water audit in their apartment complex and did an analysis of the data generated. The volunteers created a report on the findings and presented it to the committee members of the apartment complex. Methodologies are being developed on water budgeting for rural areas – potential to harvest rainwater from roof and agriculture land.

Monthly presentation on rainwater harvesting, groundwater recharging and developing catchment management plan have been made to more than 500 Panchayat members at Mahatma Gandhi Regional Institute of Rural Energy Development (MGRRED), Government of Karnataka.

Questionnaires were developed to collect natural resource information in the Aralaguppe watershed. Survey number wise land use information was collected to assess the water resource usage in the region. Periodical groundwater level is being measured in the agricultural borewells and an analysis would be carried out on the rainfall – groundwater level relationship in the project area. It is also planned to conduct recharge test at various locations to understand the rate of recharge in the subsurface conditions which would help in the construction of recharge structures.

The team members are working on the water saving technologies in agri-sector – water conservation using drip irrigation methods, drip + mulching and also traditional methods, data is being collected on the quantity of water used, growth and health of tomato plants etc. This data will be analysed and used to create awareness on water saving agricultural practices.

Awareness and training material on rainwater harvesting, groundwater recharging and other water conservation methods were created. “Varsha Dhare” – an information booklet in Kannada was developed. The team is working on information brochure on borewell recharging methods. It is also planned to create a resource centre on groundwater availability, its quality and usage for various purposes.

The Core Support has also enabled TIDE purchase equipment that can be used for water quality testing. The equipment would be used to test the water quality in the Aralaguppe watershed and in the surrounding region.



Testing of the sloping grate for loose fuel



Experimental plot on different types of water conserving agricultural practices

All India co-ordinated research project on biomass tray dryers

Supported by **Department of Science and Technology, Government of India**

This research project is on the use of biomass dryers in different geographical regions of India.

Objectives

- To identify geographical regions in the country where there is a great need for value addition of horticultural produce and partner NGOs.
- To identify horticultural produce that can be dried and to define the quality parameters for the dried products produced.
- To define and address research issues in biomass based drying of horticultural products.
- To train partner NGOs in local level drying.

Subsequent to all partner NGOs getting their dryers installed in their premises, they began trial production. Formats for recording data were circulated among the partners. Data of drying and costs of drying were received from the partners and analysed. Feedback and suggestions based on the data were sent to the partners. Further trials are continuing, as many products will be available during the winter months.

Visits were made to Society for Technology and Development (STD) in Nagwain in Himachal Pradesh and Appropriate Technology India (ATI) in Guptkashi, Uttarakhand and the drying trials with apple chips and ginger respectively were observed.

The research issue in the sub Himalayan regions was the increased fuel consumption and increased time taken for drying. Necessary inputs were given and feedback was obtained that the drying time was reduced considerably.

A Group Monitoring Workshop was conducted at Guptkashi, Uttarakhand in the premises of Appropriate Technology India (ATI), one of the partners in the project. Apart from TIDE, the 5 partner NGOs made presentations on the progress of their projects. Inputs were given by the expert committee and DST officials who attended the workshop.

The partners displayed the various products including oak silk cocoons, turmeric, ginger, chilli, onion, eupatorium (leaves are dried, powdered and used as a natural dye), apple chips, apricots, mint, fenugreek leaves, mango.

The partners have conducted shelf life studies and planned test marketing of the products. Based on these tests, the drying protocols for all the products will be finalised. The planning for their second phase of establishing womens' enterprises in drying will be taken up after that.



Discussions at the Group Monitoring Workshop

Women spreading apple slices on dryer tray at STD field station in Nagwain, HP



Training rural women in brick-making with energy efficient kiln for income generation

Supported by ETC, Netherlands



Technical training for women mixing clay

Women drying green bricks



The project is being implemented in 2 phases. Phase 1, over the first 9 months, would establish the willingness of women to be engaged in a brick making enterprise and provide an opportunity to identify sales channels.

Phase 2 would be expansion of the technical and entrepreneurial training activities in order to achieve sustainable results through the project.

Objectives

- To initiate brick making as a livelihood activity for rural women in the women's technology park
- To build the capacity of women in production of burnt bricks (first production of unfired or green bricks and then in brick burning) through training
- To create 3 women's enterprises around brick making and ensuring its sustainability.
- The first two objectives are to be achieved in Phase 1, while the third objective is for Phase 2 of the project.

Ten women who showed an interest in taking up brick production as an enterprise were identified and trained in Micro-enterprise development, followed by technical training in production of green bricks and training in loading and firing of the low capacity brick kiln.

Training courses and materials, including trainers manual, handouts and slide shows, for making green brick and firing the LCBK were prepared.

The kiln was already present in the Women's Technology Park in Aralaguppe. Other facilities have been set up, including a shed for drying bricks, box moulds, a mechanical mould and metered water supply.

Eight women are involved in a group enterprise in brick production. They have signed an MoU with TIDE for use of facilities. They have also prepared a production plan for the year, according to which they will be producing 72000 bricks in a year and have estimated profit of Rs. 74000/-.

The enterprise has produced more than 10000 green bricks and fired them. TIDE assisted the women to develop market linkages for the bricks. The women successfully sold nearly 7000 bricks after negotiating prices with buyers.

During the monitoring mission of the ETC / TTP Coordinator the results of Phase 1 were reviewed and the second phase of the project was approved.

Creation of an informal learning environment for children and their mothers

Supported by **Donor wishes to remain anonymous**



Trainer raising nursery in the Shade pot

Awaerness meeting on energy efficeint lighting at a school



This 2 year project (now under extension) is being implemented with the aim to stimulate interaction between children, parents and school teachers by the creation of in an informal learning environment both for children and their mothers. The project is being implemented in Tiptur taluk.

Seven women have been trained as trainers to conduct informal and interactive awareness creation sessions on various topics including various aspects of environment conservation, nutrition, and greenhouse cultivation.

The trainers have conducted over 170 awareness sessions for school children and mothers, using posters and handouts developed by TIDE. Awareness meetings have been conducted for 318 school children between 1st standard and 7th standard and 112 mothers at Madlihalli, Aralaguppe, Byrapura, Kallushettyhalli and Kuppur villages.

Apart from awareness sessions, other participative programmes were held from time to time to facilitate better learning. These included drawing competitions, essay writing competitions, quiz, storytelling sessions, vacation project on raising kitchen gardens for children. For the mothers a competition on nutritious recipes was held. The recipes were evaluated for nutrition by Anganwadi teachers and prizes awarded. The competitions have been successful in creating enthusiasm among the children and mothers. The children and mothers look forward to their sessions and listen with rapt attention.

The trainers as well as teachers, mothers and students shared their experiences of the project in an experience sharing workshop organised by TIDE. Apart from the BEO and other officials of Tiptur taluk, headmasters from 34 schools of the taluk and about 40 SHG women attended the workshop. The BEO appreciated the effort of the trainers and encouraged them to extend the activities to other schools in the taluk. The trainers have since, extended the awareness programmes to 5 more schools in the taluk, thus scaling up the project activities.

Feedback was collected from teachers, mothers and children. The feedback indicates that the objectives of the project: to create an informal learning environment and stimulate interaction between teachers, mothers and children have been achieved.

As a part of the project activities, a greenhouse measuring 200 sq.m was built in the Women's Technology Park in Aralaguppe village and the 7 women trainers have been trained to become greenhouse entrepreneurs. The greenhouse enterprise will ensure a steady income for the trainers and thereby ensuring the sustainability of the project.

Energy conservation in small sector tea processing units in south India

Supported by **United Nations Development Fund (UNDP)**, **Global Environment Facility (GEF)**

This project titled "Energy conservation in small sector tea processing units in south India" was initiated by the Tea Board of India, with the intention of removing barriers to energy conservation and energy efficiency that inhibit the realization of the large energy savings potential in the tea sector. The project also strives to develop replication strategies for energy efficiency and energy conservation interventions within the tea processing industry of South India.

The project entered its final year, having successfully transitioned into the implementation stage in the previous year, this year the focus was on providing the factories with technical and financial advisory services in implementation of the energy efficiency measures in their operations. The project has been creating technical reports on various interventions and sharing with the industry.

This year saw the demonstration of usage of gasifier for green tea panning, usage of efficient LED lights in the factories and usage of solar water heaters and LED lights in the residential premises of the tea estate workers and managers.

The project has been working with various government agencies to create partnerships and provide the tea factories access to more government schemes.

The impact of the project on factories in south India is evincing interest from the factories in the North East too. There are many requests from the factories inviting interventions in the region. In addition to the tea factories, invitations are also being received for similar activity in coffee plantations and for cardamom curing.

The project also created a series of tutorial videos on energy efficient interventions targeted at the factory owners to enable them to understand the benefits of energy conservation measures. These videos have been distributed among the factories, both in south India and the North East.

The project is also compiling a report on the findings of the 100 energy audits and creating fact files of 3 model tea factories. The project is also creating a film on project process for project documentation.

The project has completed all its commitments and has sought an extension till July 2012 to enable complete the documentation of the project and create partnerships between Tea Board and various government ministries and agencies like MNRE and Bureau of Energy Efficiency. It also aims to enable develop a complete roadmap for energy for the Tea Board.

Release of DVD of tutorial videos



Women's entrepreneurship for domestic lighting systems

Supported by **USAID/SARI Energy**

The project proposed that women entrepreneurs would sell energy efficient lights by conducting awareness meetings for women in the villages.

Objectives

- To develop awareness creation package on household energy efficiency.
- To build the capacities of at least 6 rural women to run micro-enterprises for introducing affordable energy efficient lighting systems for households.
- To introduce low-cost low-energy consuming lighting systems in rural households through women's enterprises.

Six women have become entrepreneurs in energy efficient lights. They conducted 207 awareness meetings, in 116 villages creating awareness among 4371 households reaching 16000 people. This has resulted in more than 2000 households installing low energy consuming lights, purchased from the women entrepreneurs. A number of households have reported 40% reduction in the electricity bills.

The entrepreneurs have had a turnover of over Rs. 6.8 lakhs and earned over Rs. 1 lakh as profit.

Linkages with manufacturers and dealers of energy efficient lights were explored and set up for the entrepreneurs. The energy efficient lights included Compact Fluorescent Lamps (CFL), various kinds of LED lamps with solar cum AC chargeable batteries and solar home lighting systems, solar fans etc.

The materials developed for the entrepreneurs included posters, banners, handouts and pamphlets for awareness and a catalogue for marketing. The women were also supported with a vehicle campaign to get more orders for their products.

The project has succeeded in increasing the knowledge, confidence and self esteem of the women. TIDE has witnessed the change from shy and inhibited women to women who can talk convincingly about energy efficient lights and their benefits and cost savings. This is the most satisfactory outcome of this project.

The innovation of women promoting their business through awareness meetings for other women has been demonstrated to be an effective way to empower women. A valuable output of the project for TIDE is the establishment of an effective method for identifying potential entrepreneurs among women through the MED training.

TIDE continues its support to the entrepreneurs by organising entrepreneurship and personality development training for them, to help them grow their business and build their self esteem.

Vehicle campaign for promotion



Diversifying business opportunities of grassroots clean energy entrepreneurs

Supported by **GSRD Foundation**

The GSRD Foundation has been supporting TIDE to take measures to provide the grass root entrepreneurs of TIDE opportunities for growth.

TIDE energy entrepreneurs are currently engaged in the construction of biomass based combustion devices for different applications in the various informal process industries, value addition to farm produce, herbal medicine preparation, silk reeling, textile dyeing and bleaching, spice drying, brick making, commercial cooking, pottery etc.

The devices have been in use for an average of 5 years and it was expected that the entrepreneurs could tap the replacement market. The entrepreneurs have given a feedback that the consumers prefer services like repair and maintenance for the device rather than capital expenditure. TIDE proposed to create ancillaries for some of the devices, which would enhance the capability of the entrepreneurs to address the repair and maintenance requirements of the customers and also add to the versatility to the products.

Models of various spare and replaceable parts for energy efficient stoves like textile stove, dryer, and multipurpose cooking stoves have been designed. The prototypes were demonstrated to the entrepreneurs in an entrepreneur meeting held in September. The devices were given to the entrepreneurs and their feedback is being incorporated in the designs.

The entrepreneurs have been supplied with prototype of different ancillaries like chimney cap, stove and reducers. These have been installed at user locations and feedback is being sought. Based on the feedback, changes will be incorporated in design, material and usage.

The entrepreneurs have also shared some of the designs that they have been using in field and we have suggested improvements on the design.

The stand, ashbox, grate, reducers and chimney cap have been accepted by the users and the design finalised.



Entrepreneur meeting

Stove with attachment for multi-fuel usage



School and community horticulture enterprise – Nutritional support for primary education

Supported by **Sir Dorabji Tata Trust**

The primary goal of the project was the augmentation of nutrition content in the government primary schools mid day meal schemes and evolving a replication strategy for scaling up the enterprise. The objectives were capacity building of SHG members in precision farming methods of women with small land holdings to earn an additional income and support the mid-day meal scheme by providing vegetable supply to the local schools.

The project covers 9 schools and 1 BCM hostel in 10 different villages of the Tiptur taluk. About 400 children are getting 50 gms / child /day additional vegetables in their mid day meal from the SHG's members. In 2011, the focus was on providing hands on experience to the women self help groups, which joined the project in the previous year, on pre-cropping activities like bed preparation, nursery raising, transplanting and maintenance of crop health and market linkages. Awareness cum training programmes were also conducted on organic farming and crop cultivation in greenhouses.

A health check up was conducted for school children of the schools covered under the project and non-project schools. The initial assessment studies indicate that the BMI (Body Mass Index, a health and grown parameter) of the children under this project is showing better trend than the children not the under the project.

Taluk level workshops were also conducted at Tiptur on the 30th July 2011 and 25th Feb 2012. The workshops were attended by government officials and the beneficiaries. The education department officials and Mid-day officer appreciated this unique model of community participation in mid-day program and assured their support to extend this program to more communities and schools.

A State level workshop to share the experiences of the project was conducted on 10th Feb 2012 at Shikshakara Bhavan, Bangalore. The Joint Director of Mid-day Meals Scheme and all the Districts Education Officers participated in the workshop. The officials found the concept interesting and there were requests for replication in their areas.

A video documentation on the project was created in English and Kannada. A manual on cultivation in greenhouse has been created in English and Kannada for reference. Sujatha Sanchike – a monthly magazine carried out an article on the project in their September 2011 issue.

Based on the experience in the project, we now propose to replicate the concept of community participation in the nutrition program through providing the community with varied options of livelihood and not just greenhouse technology.

State level experience sharing workshop



Capacity building of women for a greenhouse horticulture enterprise

Supported by **GSRD Foundation**

The objective of the project was the demonstration of a greenhouse based enterprise as an attractive option for income generation. The target of the project was to train women in various aspects of greenhouse horticulture, motivating them to adopt such practices and spread awareness about the technology among rural communities.

In the earlier years two Self Help Groups (SHG), Nandini and Bhavani SHG were identified as entrepreneurs and two greenhouses of 500Sq.m area each were constructed with rainwater harvesting and drip irrigation system in the Eralagere and Aralaguppe villages of Tiptur taluk in Tumkur district, Karnataka State, India.

The women were trained in cultivation of crops, diseases and pest control methods, both by TIDE and experts from Precision Farming Development Centre, Government of India. The project created a viable livelihood option for the members of the two SHG and provided an opportunity for additional income generation. The members learnt about cultivation of high value crops like coloured capsicum and other crops such as pole beans & tomato and also about water conservation through rainwater harvesting and drip irrigation system, installed in the unit.

This year the focus of the project was on data collection. TIDE also conducted a 5 day training programme on Micro-enterprise Development for the SHG members. The main objective of the programme was to strengthen the entrepreneurial skills of the women.

Apart from greenhouse structures, net house for nursery raising, vegetable grading and vermi-composting units were constructed in the Aralaguppe site and it has become a learning / resource centre for the nearby farming communities.

During the project, Nandini SHG harvested about 2500 Kgs of coloured capsicum, tomato, and pole beans. They also raised seedlings and earned profits more than Rs.50,000. These greenhouse structures were also used to collect rainwater. The Eralagere site harvested about 250,000 litres of rainwater from the roof of greenhouse. The Bhavani SHG harvested 800Kgs of coloured capsicum and earned Rs.30,000 in the first crop. They also harvested about 180,000 litres of rainwater which was used for irrigating crops in the greenhouse.

These sites have become a demonstration cum training facility, in greenhouse horticulture, for women, progressive farmers and school children. The visitors learn about the cultivation practices, data collection, and conservation of resources.

SHG women planting coloured capsicum in the greenhouse



Conversion of school campus into an environment friendly zone at Bangalore

Supported by **ADOBE India Pvt. Ltd.**
Facilitated by **Charity Aid Foundation (CAF)**

This project on “Conversion of School Campus into an Environment Friendly Zone” at Kendriya Vidyalaya – IISc, Bangalore started in Feb 2010 and completed March 2012. The project is financially supported by Adobe India Pvt Ltd., and has been facilitated by Charity Aid Foundation (CAF), New Delhi. TIDE has designed and implemented the project in KV –IISc premises.

The main objectives of the project was to enhance the learning ability of the 6th and 7th standard students, to enlighten children about the current issues in the urban/rural environments and the management of these issues by setting up a model environmental lab in the campus.

In the first year, eight components – Rooftop rainwater harvesting system (for 150 Sq.m), groundwater recharging (through recharge well, pit and trench), grey water treatment unit, green house structure, solar powered lighting system and waste management practices - were installed in the campus.

The students were also involved in the project from the initial stage, they observed the construction and setting up of the various systems. They were then trained in the practical usage of the system and also data collection.

In this year the focus was on practically using the various systems, to monitor the systems and to collect data. Awareness materials, a film on the project and models for rain water harvesting have also been created as additional learning aids. Students have participated in various interschool competitions demonstrating components of the project and won prizes.

The project has had very good feedback from the students and teachers. The teachers appreciate the concept and accept the project as a very helpful teaching aid which enhances the student's ability to understand these environmental friendly technologies. More schools are showing interest in replicating the project in their campuses.

The project has nurtured the students into environment ambassadors. The project has reached out to about 3000 students and visitors. The school is also able to get monetary benefit through water and energy conservation.



Students explaining the grey water treatment system to visitors

Students participating in an exhibition



Women's Technology Park in Karnataka

Supported by **Department of Science & Technology, Government of India**

This 3 year project has the following objectives

- To create infrastructure for a women's technology park (WTP) with environment friendly livelihood options.
- To develop awareness and training packages on environment friendly livelihoods for community based organizations of women, NGOs and train women's groups
- To offer marketing support and other facilitation services for the trained women
- To demonstrate the financial sustainability of the technology park.

TIDE has setup WTP on 2 acres of land at Aralaguppe Gram Panchayat in Tiptur taluk. The construction of the training facilities is nearing completion. While some part of the training facilities are funded by the project, other facilities are being built with funds received as donations, from other projects and TIDE's own resources.

Along with the construction of the training facilities, the following technologies have been set up:

- Low capacity Brick Kiln (LCBK)
- Two greenhouses with a total area of 700 sq. m
- Shade net for nursery raising
- Vermicomposting tank
- Moulds for the construction of Sarala stove

More training and livelihood options are also being explored.

Awareness materials including posters, handouts, demo devices and short films are in place at the WTP for a number of technologies (cultivation of horticulture crops in a greenhouse, organic cultivation, vermicomposting, Rainwater harvesting, farm pond, energy conservation through energy efficient lighting devices, smokeless household stove, nutrition for children, biomass dryers).

Thirteen awareness meetings for women were organised at 11 villages covering, greenhouse cultivation, vermicomposting, organic cultivation, brick kiln and energy efficient domestic lighting. A total of 439 women participated in the meetings.

Two groups of women have initiated their enterprise from the premises of the Women's Technology Park. One group has taken up the greenhouse cultivation enterprise and the other has taken up brick production enterprise. Requisite technical and microenterprise training has been provided to the women.

In addition technical training in the construction of sarala stove was conducted for 4 women who have taken up the enterprise.

Awareness meeting at the Madihalli village



A new initiative for development and deployment of improved cook stoves: Pilot field testing and evaluation of community sized biomass cook stoves

Supported by **Centre for Rural Development and Technology (CRDT), Indian Institute of Technology (IIT) Delhi**

The Ministry of New and Renewable Energy had initiated a project through CRDT, IIT with the objective of carrying out a nationwide pilot level field testing, monitoring and evaluation of a range of improved community sized biomass cook stoves. TIDE was awarded the project to test 35 stoves in institutions in the states of South India.

CRDT invited applications of various stoves for selection to a common pool of stoves. TIDE proposed PYRO multipurpose stove and Pyro Tava stove from Sustaintech India Pvt. Ltd. (SIPL) and Leo Stove from Prakti Design, Pondicherry as appropriate for dissemination under the program. The SIPL Multipurpose stove proposed by TIDE was selected by CRDT.

TIDE installed the 35 stoves in 18 schools cooking mid-day meals in parts of Madurai and Theni, Tamil Nadu. The project required monitoring and data collection from 50 stoves to understand the performance of Improved Cook Stove in the community sized environment. The project identified 14 other users of the ICS and 50 conventional stoves to conduct a survey to understand the fuel usage of the conventional and improved cook stoves.

The result of the survey indicated that the improved cookstove had a fuel saving of about 3.6 tonnes per annum over the conventional cook stove.

The pilot project created awareness on the existence and use of energy efficient stoves. The purchase of stoves by hotel owners in Erode-Salem belt has indicated an increase in the level of understanding and awareness about energy saving devices and clean energy technologies in rural areas.

The project has been instrumental in TIDE understanding the performance of the multipurpose stove.

Stove in use in one of the schools



Creation of supply chain and streamlining commercial bank financing for improved wood burning stoves for commercial kitchens

Supported by **Ministry of New and Renewable Energy, Government of India**

Demo stoves at Kishenganj



The objective of the project was to carry out activities to assess the possibility, and develop a detailed project report of setting up a viable business that can deliver low carbon products sustainably and long term in Rajasthan.

TIDE carried out an initial baseline survey to understand the types of fuel being used, fuel consumption assessment, and cooking practices in Rajasthan. TIDE visited Kishenganj and put up demo stoves at a local street side food vendor to get feedback from the user and to assess the user acceptance and the willingness to buy.

The user feedback was positive. The preliminary surveys show a potential market for the stoves.

Local organisations were identified for distribution and consumer financing linkages. Initial discussions with BASIX for consumer financing and Frontier Markets for distribution of the stove were promising, both organisations have expressed interest in supporting the promotion & sale of the stoves in the region.

A detailed business plan along with a proposal for phase 2 of the project was sent to MNRE for setting up a viable business distributing stoves in Rajasthan, this has been accepted.

HP HELP & LIFE Programs

Supported by **Hewlett Packard**



Training of participants from Samvada

Ms Prabha delivering a session during MTOT



TIDE conducted the GET-IT training of the HP-HELP program to 162 trainees of the following NGOs working with disadvantaged youth:

Graduate Finishing School, Mysore – This NGO works with graduate youth from small towns and provides them training in being ready for the job market. The GET-IT training provided additional skills to the participants.

Samvada, Bangalore – an organisation empowering young people with appropriate values, perspectives and life-skills to help them contribute towards a plural and just society. The GET-IT training was conducted for two groups of students – from Bangalore and Ramanagaram.

Raza Educational Society, Bangalore – a social organization dedicated to help the youth of poor and deprived families and communities to overcome poverty, literacy and to secure lasting improvement in the quality of their living. The GET-IT training was used to provide additional skills to the trainees of their vocational training program – training has been provided to 4 groups of participants from 2 batches of their vocational course.

The GET-IT Program is also being conducted for TIDE staff, one module every month. The staff have undergone the Operations & Management modules and Powerpoint module.

This year Ms. R. Prabha was certified as a Master Trainer. TIDE now has two Master Trainers and one Trainer to conduct the training programs.

Rainwater harvesting projects during 2011-12

In the year 2011-12, TIDE developed a rainwater harvesting, groundwater recharge plan and utilization of harvested rainwater for Bangalore Metro Transport Corporation (BMTc), Bangalore. TIDE entrepreneurs also installed few rainwater harvesting and groundwater recharging projects.

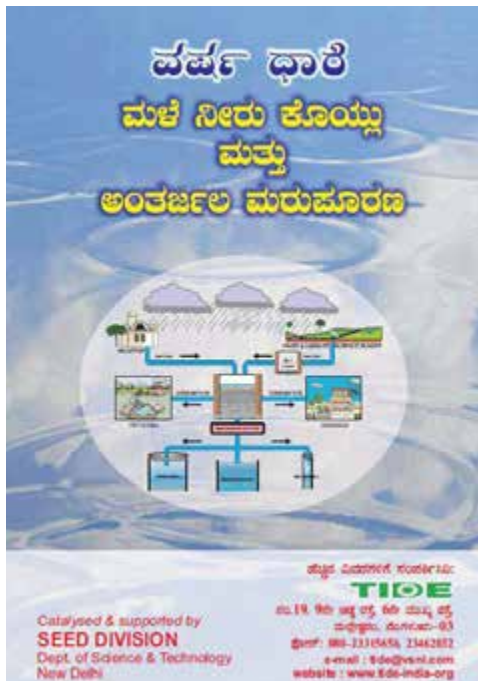
The BMTc Depot-35 at Kannalli located on Bangalore - Magadi road, is a bus garage for 96 buses. The total number of employees is 570. The BMTc requested TIDE to develop a suitable filter unit design for the rooftop rainwater harvesting system and utilization of harvested rainwater for the depot.

The filter unit design for rooftop RWH system was developed to collect and filter the incoming water from 1054 sq. ft roof area in the depot to harvest about 688KL of water. The filter unit consisted of an inlet chamber, filter chamber filled with jellies (40mm, 20mm and 10mm) and a silt chamber. The filtered rain water from the silt chambers was diverted to the rainwater sump.

The BMTc implemented the design and is happy with the results. They are planning to replicate this in all their depots in Bangalore.

TIDE has provided training to 3 engineers and a few contractors in the conceptualisation, design and installation of rainwater harvesting. These entrepreneurs have begun implementing rainwater harvesting projects. They have implemented rainwater harvesting systems for roof as well as groundwater for 13 residential homes and for the Tractors And Farm Equipment Ltd. (TAFE) factory at Doddaballapur Industrial area.

TIDE has also developed a booklet on water conservation called "Varsha Dhaare" in Kannada, which contains information on the need for rainwater harvesting, potential sites where rainwater harvesting can be done. Different methods of harvesting rainwater and ground water recharging are also mentioned. The booklet also gives the advantages and uses of rainwater harvesting



Rainwater being used for washing bus at BMTc depot 35



Creation of rainwater harvesting facility at Divine Mercy School, Kannur Village, Bangalore

Supported by **Contribution under Give As You Earn (GAYE) programme**

Facilitated by **Charity Aid Foundation (CAF), New Delhi**

The “Give As You Earn (GAYE)” programme of CAF, receives regular monthly donations by employees of various companies and sometimes a matching fund from the company, to be used for public charitable purpose that benefits the community at large. TIDE is a beneficiary of this programme.

TIDE identified Divine Mercy school ‘Jeevodaya’ as a beneficiary for a rainwater harvesting system based on a request received from them.

The Divine Mercy school ‘Jeevodaya’ is a registered charity providing residential and educational services free of cost to children from the economically backward sections of society. The school supports 300 students from Nursery to the second grade.

The school “Jeevodaya” is located in Kannur village situated on Hennur – Bangalore International Airport road. The school campus spread over 5 acres of land and about 10 % is covered with various buildings, the remaining area contains a play ground and a small vegetable garden and ragi field. Presently, borewell water is pumped to a 25,000 liter sump and then to overhead tank and distributed to all the locations.

The roof area of the main building is about 800 Sq.m and the rainwater harvesting potential is about 6 lakhs liters of water per annum. TIDE developed a design and implemented a rooftop Rainwater harvesting and groundwater recharge system for the main building.

All the rainwater pipes, located on the southern side are interconnected and diverted to a 1000 liter PVC tank through a filter unit to collect rainwater. The rainwater pipes situated on the northern part are interconnected and diverted to a newly constructed recharge well located next to the working borewell. The recharge well would help in increasing the groundwater level and also improve the groundwater quality.

The school has borne about 25% of the cost of the RWH system out of its own funds.



Rooftop rainwater collecting system



Recharge well

People at TIDE

Mr. NV Krishna, *Chairman*

He has an abiding interest in the application of science and technology to global issues.

NVK graduated from IIT Madras and IIM Calcutta and worked at the Karnataka State Council for Science and Technology (KSCST).

He also worked with IDL Chemicals Ltd. and as Vice President (US Operations) and Head of Software Quality for Sonata Software. He is currently Director of Microsense, where he heads the company's Software Export Operations and is also part of the Wireless City Project creating connected communities.

Ms. Svati Bhogle,
Chief Executive Officer (CEO) and Secretary

She holds a Masters Degree in Chemical Engineering from IIT Bombay.

She has been associated with TIDE since 12 years. Svati Bhogle worked for the Hindustan Lever Research Centre after which she turned to research in technology for development. When working for the Karnataka State Council for Science and Technology, she was involved in research and development of fuel efficient biomass based stoves and dryers.

Mr. Murtuza Khetty, *Chief Operating Officer (COO)*

He is an MBA graduate from ENPC School of International Management, Paris. His main areas of interest are entrepreneurship, enterprise management and financing strategies.

He coordinates the training activities at TIDE in addition to managing accounting and administration related functions.

Dr. G.G. Chandankeri,
Head – Water Technologies Group

He holds a Doctorate in Geology from Karnataka University, Dharwad. His main areas of work are geographic information systems (GIS), remote sensing (RS), ground water exploration and the design of rainwater harvesting and groundwater recharging structures.

He is currently involved in developing innovative solutions for water management in rural, peri-urban and urban areas.

Mrs. R. Prabha, *Head – Women & Livelihoods Group*

She holds a Master's Degree in Botany and has worked with LIC. She was a coordinator at the Centre for Budget and Policy Studies.

She manages projects related to the development of rural enterprises for self-help groups of women.

People at TIDE

Mr. Ashiq Ahamed Chemmalaseri, *Head – Technical Support*

He is an Energy Engineer from College of Engineering, Guindy. He has great interest in renewable energy technologies for rural applications.

He is the team leader of TIDE's Technical Support Group and manages new product developments for combustion technologies.

Mr. Jayaraman S,*Accounts Manager*

He holds a Bachelor's Degree in Commerce from Bangalore University. He is in charge of the Accounts Department of TIDE.

Dr. V. Jayasree,*Project Scientist*

She holds a Master's Degree of Science in Meteorology and a PhD in Meteorology. She is currently working on a DST women scientist project.

Mrs. Sumathy K,*Consultant*

She holds a Master's Degree of Technology in Polymer Science and a Master's Degree of Science in Chemistry. She works as a consultant for various projects of TIDE.

Mrs. Pramila Poojary,*Project Coordinator*

She has a Master's Degree of Social Work. She currently works on various projects of the Women and Livelihoods Group.

Mr. H.V. Abhishek,*Project Engineer*

He holds a Bachelor's Degree of Mechanical Engineering. A member of the Technology Support Group, he is in charge of designing biomass energy systems.

Ms. Asha Ramaswami,*Project Documentation*

She holds a Bachelor's Degree of Business Management. She performs various project documentation and communication processes.

Ms. Hamsakumari Soumya,*Project Engineer*

She holds a Bachelor's Degree in Environmental Engineering and works with the Water & Environment Management Group of TIDE.

Mr. Velusamy,*Project Executive*

He holds a Bachelor's Degree in Manufacturing Engineering and is an active member of the Technical Support Group.

Mr. Raja K.*Project Executive*

As a member of the Water and Environment Management Group, he performs and monitors field installations of various products.

Mr. Prakash D S,*Project Engineer*

He is a member of the Technology Support Group and coordinates various field activities.

Mr. Manjunath H C,*Project Manager*

He coordinates field activities and assists awareness / training programs for SHGs.

Mr. Vasanth Kumar,*Project Executive*

He is a Bachelor of Arts and coordinates field activities and organizes training programs.

Mr. RL Narasimhan,*Senior Project Engineer*

He holds a Master's Degree in Business Administration. He is a primary member of the Tea Project located in Coonoor.

Mr. Solaimalai Kannan,*Project Executive*

He is a Mechanical Engineering, specialized in Energy Audits, Erection and Commissioning.

Mr. Manigandan Swaminathan,*Project Executive*

A Bachelor of Mechanical Engineering. He works on energy related activities and awareness creation for the Tea Project, Coonoor.

Mr. S. Nagulakumar,*Project Executive*

He holds a Diploma in Mechanical Engineering and assists the Tea Project in the conduct of Energy Audits.

Mr. Vikash Ari,*Project Executive*

He is a Bachelor of Mechanical Engineering and is involved in activities of the Tea Project.

Mr. A. Karthikeyan,*Project Executive*

He holds a Diploma in Electrical and Electronics Engineering and works for the Tea Project in Coonoor.

Mr. Jayarathinam,*Project Executive*

He assists data collection activities for the Tea Project in Coonoor.

Mrs. Renuka Narasimhan,*Accountant*

She holds a Bachelor's Degree of Commerce and performs accounting related activities.

Mrs. Vanaja S,*Office Executive*

Mr. Chandranna K,*Office Assistant*

Resource Persons

Dr. S. Rajagopalan, *Founder Chairman / Mentor*

Dr. S. Rajagopalan is a Chemical Engineer with a Post Graduate Degree in Management from the Indian Institute of Management, Bangalore and holds a Doctorate from IIT Kanpur.

He was the CEO of the Karnataka State Council for Science and Technology, Bangalore, for 14 years. He was also involved in the management of science and technological research. He has coordinated projects in several areas such as rural and renewable energy, rural industry, environment, urban planning and habitat, education, agriculture and life sciences. He was actively involved in policy formulation of the government in S&T.

He is one of the pioneers in the use of computer-based Geographic Information Systems (GIS) for the management of natural resources. He was also the managing director of Spatial Data Pvt. Ltd. and is currently a professor at IIIT, Bangalore.

Dr. R. Sethumadhavan

Dr. Sethumadhavan holds a doctorate in Heat Transfer from IIT Bombay and has 27 years of experience in industry, teaching and consultancy. He is an expert in the fields of renewable energy, power plant consultancy, energy conservation and demand side management. He has been actively involved in the Tea project at Coonoor

Dr. Sreekumar

He is a visiting faculty of Chemical Engineering at the National Institute of Technology, Suratkal. His research interest includes energy technologies.

Mr. S. Vishwahath

Founder of the Rainwater Club, he is a pioneer in the introduction of several innovative rainwater harvesting techniques. He is a civil Engineer from Mysore University with a Postgraduate diploma in urban and regional planning and in urban environmental management.

Prof. S.S. Lokras

He is a retired professor of Chemical Engineering from IISc. Bangalore. He holds a doctorate in Chemical Engineering from IISc. He is a 'Distinguished Fellow' of ASTRA, IISc. His major contribution has been in the development, field-testing and dissemination of fuelefficient wood and other biomass-burning devices and technologies for rural areas.

Resource Persons

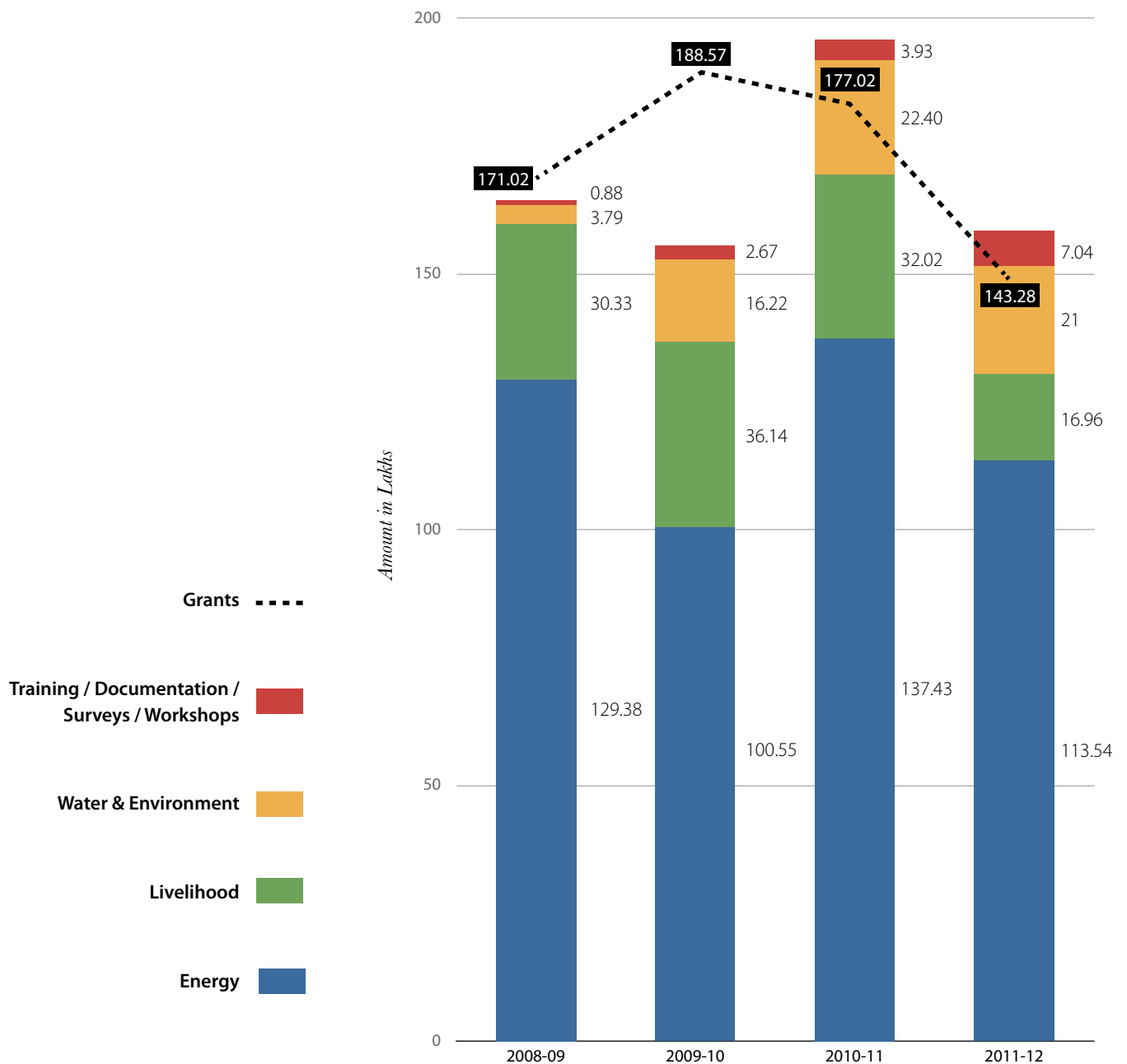
Prof. K.S. Jagadish

He is a retired professor of civil engineering from IISc Bangalore. He was former Chairman, ASTRA (Centre for Sustainable Technologies) and a pioneer in low-cost and environment-friendly housing. He is currently associated with NGO Gramavidya and RV College of Engineering. He provides valuable technical inputs to TIDE.

Dr. G. Ramamoorthy

He is a subject specialist in Agricultural Engineering. A technical advisor for TIDE, he suggests scientific methodology to factories for quality production of tea. He is a scientist and tea advisor in UPASI-KVK, Coonoor.

Project Grants and Areawise Expenditure



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