

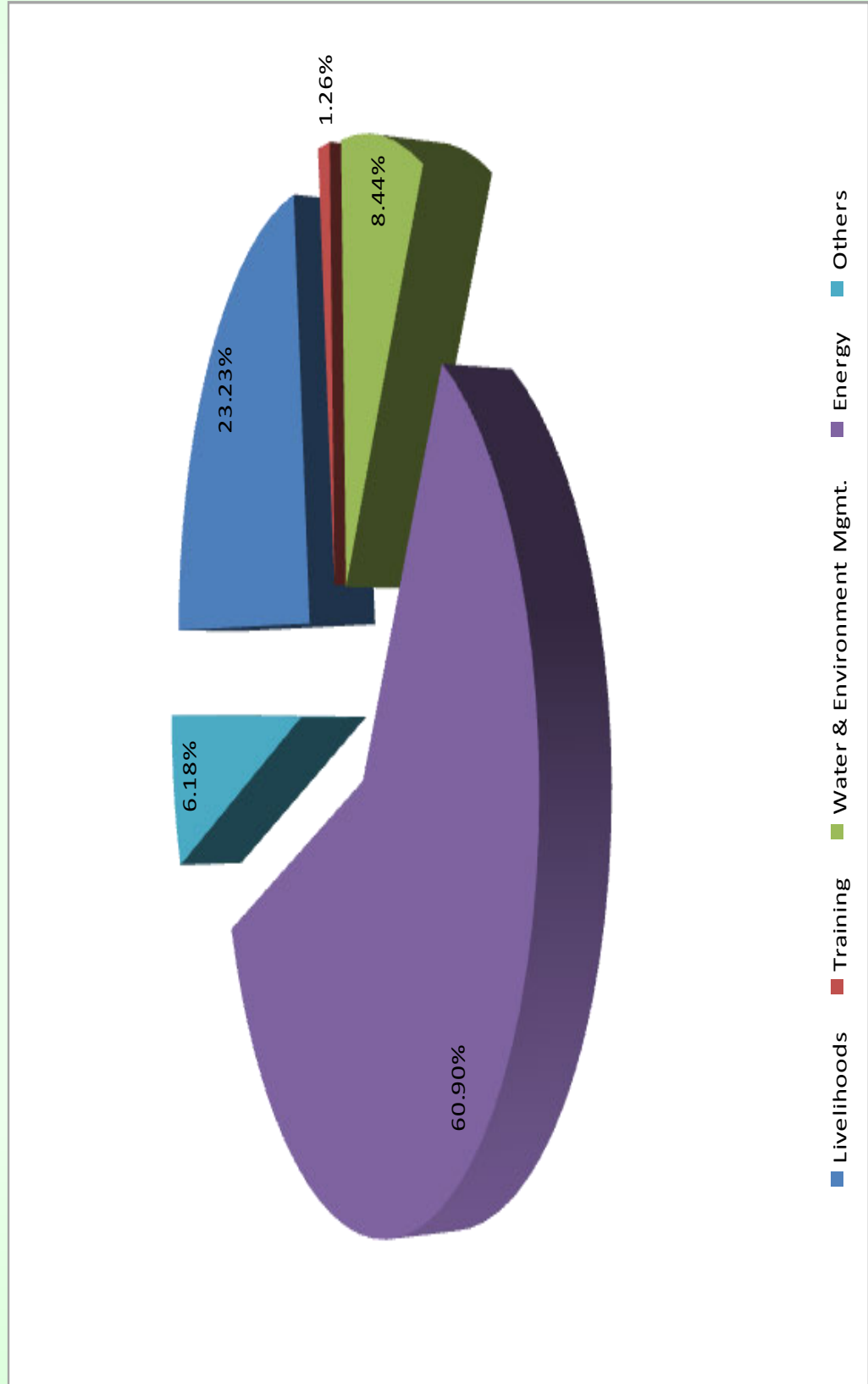
Report 2010



TIDE

Area-wise Project Expenditure

TIDE at a Glance



Overview

TIDE is on the verge of adulthood, it will be stepping into its eighteenth year in May 2011. The past seventeen years has seen its fair share of ups and downs. However we do see ourselves closer to our objective of wide and large scale dissemination of our technologies. We started out firmly believing that if the technology was replicable, deliverable and sustainable, it would create a demand that would be spread using the small entrepreneur. We now understand that robust technologies without additional support do not achieve scale

We are at the end of a year that has been fruitful. We have come closer to our objective of large scale dissemination of our products with MNRE selecting our prefabricated multipurpose stoves among a basket of biomass stoves being promoted by them as energy efficient stoves. The forest department has chosen our Sarala stoves as the stoves to be implemented in their "Hasiru Gram Yojane". TIDE stoves have also been chosen by CAPART as energy efficient stoves to be disseminated under their various programs through other NGOs. SIPL has now begun its operations in Tamil Nadu with the appointment of a new CEO.

The UNDP Project on 'Energy conservation in small sector tea processing units in South India' is showing good results and there are requests to extend the project to the North East tea factories. The project 'Conversion of school campus into an environmental friendly zone' aimed at enriching the science syllabus and offering insights into the environment issues of the urban environments has yielded positive results, with the schools wanting to implement similar programs.

In addition to the different programs carried out, TIDE also offered to its entrepreneurs a capacity building training program 'Kadam pe Kadam' implemented by Better Future and funded by GSRD Foundation. The training has helped our entrepreneurs get a better understanding of their business and built their confidence. Our women entrepreneurs benefited from this program the best. Based on their feedback, we are planning a similar program exclusively for our women entrepreneurs.

As the years go by, TIDE's work is become more and more relevant with water becoming scarce and precious and the world recognising biomass as a vital source of energy. Our horizons have moved further and the canvas for our work is expanding.

I would like to thank the funders for granting us such meaningful projects. I would also like appreciate the TIDE team for its relentless efforts at delivering the projects.

We look forward with confidence to the next year which looks very promising.

Svati Bhogle

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All India Coordinated Research Project on Biomass-based Tray Dryers

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

This two-year research project on biomass tray dryers for use in different geographical regions is , funded by Department of Science & Technology, Government of India.



Arranging vegetables on the dryer trays

The project objectives are:

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

During the second year of the project, proposals that were written by the 5 project partners (INHERE, ATI, CTD, STD and Bethany Society) in coordination with TIDE, were sanctioned by DST.

A manufacturer in Delhi was identified and trained by Jaykar Rao, an entrepreneur of TIDE, in the fabrication of a dryer. The dryer was manufactured, installed and tested at the Sahaspur field station of the Centre for Technology and Development, one of the project's partner NGOs. The other 4 partners placed orders for the dryer with the trained fabricator.

Technical training in the use of biomass dryers to dry spices and vegetables was conducted for the 5 partner NGOs.

A no-cost extension of the project has been sanctioned. DST also recommended that at least 2 more partners be identified and trained on the usage of biomass dryers. Accordingly, 2 NGOs - one in Orissa and another in Chhatisgarh - have been identified and they are in the process of preparing their proposals .

The co-ordination proposal has been submitted to facilitate co-ordination of partners project activities.



Technical training session in progress for the partners

Assessment of the Impact of Man-made Modifications on the Hydro-logical Regime of the Varahi River Basin, Karnataka

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

The study, titled “Assessment of the impact of man-made modifications on the hydrological regime of the Varahi river basin, Karnataka” is aimed at looking at the impact of river catchment modifications on hydrological shifts. The study uses remote sensing and geographic information system techniques together with secondary information and hydro-meteorological data, in order to derive the status and trend of stream flow and sediment response.

The Varahi river, which originates from Kavaledurga in Shimoga, flows around 72 km west-bound, where it joins the Arabian Sea near Kundapura. This high-land river catchment with rich natural resources is now under deterioration due to land cover shifts as well as anthropogenic activities. Water abstraction, due to changing land usage patterns, sand mining and tourism in catchment areas, results in degraded water resources, vanishing tails, silted river beds, shrinking river channels and river courses running dry. To assess the influence of land usage and the effects of impoundments on the river systems, measurements of possible variations in resources along the river course, as well as upstream changes in natural conditions need to be considered.

Preliminary analysis using satellite imagery interpretation and secondary data sources shows that, mainly due to human activities, the catchment is witnessing dramatic changes in land coverage since the mid-90's. Forests are giving way to plantations and agriculture, in turn leading to increased water consumption. Additionally, development activities such as the Varahi HE project, irrigation projects, drinking water supply schemes and tourism activities have changed water usage patterns in the basin. This has lead to reduced flow in lower reaches, as is evident from stream flow data. The river inflow has also considerably reduced.

These interferences significantly impact the hydrological regime of the river catchment, and need to be quantified. Such a detailed water balance study is first of its kind as it addresses a micro-problem concerning a specific area as against a macro-area. Hence it can be derived that even small man-made changes cause larger impacts, which need to be correlated and scientifically assessed in association with the hydrological pattern. The study would prove to be first-hand information that can further forecast the deleterious effects of excessive man-made activities on a river basin. This can enable planners, city managers, etc. to define the limits of such activities and provide information to society at large about the availability of water resources and management strategies to be adopted in their region. This in turn would serve pre-planning activities, lead to sustained development and enable the adoption of measures to reduce harmful impact on water bodies.



Sand mining in the catchment area of the Varahi river

Core Grant

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



Testing of multi-fuel stove

Continued support from the Department of Science and Technology (DST) through the Core Grant has helped TIDE to improve its product design features through certain experimental activities. The energy group developed a multipurpose stove for street food vendors. Thus, TIDE has added to its repertoire a new mini multipurpose cooking stove, which caters to food preparation requirements of street food vendors in Salem, Erode and Madurai of Tamil Nadu state. The market demand for such type of stoves was discovered by Sustaintech India Pvt. Ltd. (SIPL), a start-up social enterprise initiated by TIDE. The technical team of TIDE developed this energy-efficient and smokeless cooking stove through proto-type development and experimental investigations on the performance of the stove. Moreover, a low-cost combination of insulation for the stoves has been developed, which would hit the market by 2011. This new combination of insulation is undergoing various tests at TIDE's stove lab in Hosur, Tamil Nadu, to verify its heat resistance and durability.

The water management group of TIDE carried out awareness meetings on the conservation of water resources and sustainable agriculture for Self-Help-Group (SHG) members. Presentations on water technologies have been made to Panchayat members. Questionnaires are being developed to collect baseline information of a water resource assessment in a watershed at Tiptur taluk, Tumkur district. Data on natural resource information such as watershed, drainage and village maps, rainfall and census data have been collected. Standard formats for the collection of data to conduct water audits are being prepared. Awareness and training materials on water harvesting and conservation methods are also being designed. Methodologies are being developed for improved water conservation in the agricultural sector. The Core Grant team is also working on the creation of information charts and brochures about rainwater harvesting methods and artificial recharge methods of borewells for domestic, agricultural and industrial sectors.



Presentation on water technologies to Panchayat members at MGRIRED, Bangalore

Conversion of School Campus into an Environment-friendly Zone

Supported by: ADOBE Systems India Ltd.

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

The project titled “Conversion of School Campus into an Environment-friendly Zone”, was undertaken at Kendriya Vidyalaya IISc, Bangalore, and included the installment of multiple environment-friendly components on campus.

Combined efforts of KV IISc, ADOBE, CAF and TIDE, to convert the KV IISc campus into an environment friendly zone were primarily aimed at enriching the 6th and 7th standard CBSE science syllabus and at offering greater insight into environmental issues of urban environments. Baseline data pertaining to current patterns of waste segregation and consumption of natural resources like water and energy were compiled to quantify and assess the extent and impact of TIDE's intervention.

As a first step, basic knowledge of students on all project components demonstrated on campus, was assessed through a simple test and found to be rather average. Consequently, the project sought interesting and effective ways of educating young children about water and energy conservation, waste segregation and important environment management practices. A model environmental lab was set up on the school campus to help students, teachers and visitors understand various environment management techniques which thus far weren't practically addressed in the course syllabus.

Students and teachers were involved during various stages of the project such as planning, site identification for the installment of various structures, construction of project components, operation and maintenance, monitoring, etc. Technical expertise from GKVK and IISc was also referred to obtain maximum project impact. Techniques of rainwater harvesting, groundwater recharging and grey water treatment were demonstrated to students. A greenhouse with a rainwater collection system was installed, including a drip irrigation system to achieve higher crop yield with less water consumption for irrigation. A solar lighting system was put in place to harness solar energy for the lighting of classrooms. Waste management practices were incorporated through source segregation of waste into various categories and by utilization of organic waste for the preparation of compost (fertile manure).



Explaining the borewell recharge component

The project was inaugurated on 15th August 2010, by the Assistant Commissioner of Kendriya Vidyalaya Sangathan (Bangalore Region), in the presence of Sri Sreekanth of ADOBE Systems, Bangalore, and delegates from TIDE, Sri NV Krishna (Chairman) and Smt Svati Bhogle (Secretary). Class VI and VII students explained to the delegates and visitors of the event, the significance and various operation aspects of individual environmental units installed on campus. The event was also covered on the front page of the Bangalore edition of the DNA Newspaper.

The students are very much enthused by the project and are taking on the responsibility of explaining the different components of the and their functions to the visitors including the Commissioner of Kendriya Vidyalaya Sangathan, during his visit to the KV campus.

Energy Conservation in Small Sector Tea Processing Units in South India

Supported by: United Nations Development Program (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 third successful year, successfully transitioning to the implementation phase. The recommendations suggested by its energy audit partner, ELPRO Energy Dimensions Pvt. Ltd., and the case-based studies performed on critical areas of energy consumption have made tea factories in Tamil Nadu, Kerala and Karnataka invest in energy efficient systems for thermal and electrical sections. By the end of 2010, ELPRO conducted almost 77 energy audits in various tea factories.

Energy conservation methodologies like the usage of briquettes, hot water generators, EE motors, ID / FD fan controllers, maximum demand controllers and flat-belt drives for motors, have gained willful prominence in many tea factories. Many Bought Leaf and Estate tea factories are being encouraged by ESCO schemes and subsidies from the MNRE, to implement energy conservation methodologies and invest in energy efficient systems.



Energy consumption data collection

Regardless of the leadership change in the Tea Board, TIDE has received good support from the administrative board of the tea sector. This year also saw UPASI conducting its 117th annual conference, where aspects of EnCon schemes were showcased through stalls at the exhibition.

To provide an enabling mechanism for factories to better understand quality aspects of the fuel procured and used, four Fuel Testing Facilities (FTF) have been set up in different tea producing regions of south India. These are additional to the one already established in UPASI KVK.

Information on Renewable Energy technology schemes like pico-hydro power, biogas, solar power for pre-heating of dryer inlet air, wind power and energy plantations are being disseminated to many tea factories through seminars, training programs and conferences. This has also enabled successful adoption of RE technologies like the biogas generator, wind and pico-hydro power by some tea factories.

The mid-term review of the project, carried out by external consultants national and international consultants, has commended the project for its multi-stakeholder engagement strategy and for very good documentation, information sharing and the barrier removal approach in support of implementations.

Creation of an Informal Learning Environment for Children and their Mothers

Supported by: Funder requests anonymity

This two year project aims at stimulating interaction between children, their mothers and school teachers, through the creation of an informal learning environment for school children and their mothers. The project is being implemented in Tiptur taluk.

Seven women were trained as trainers on various aspects of environmental conservation, nutrition and greenhouse cultivation. They then conducted awareness programs for school children and their mothers, using posters and handouts developed by TIDE. The knowledge sessions have been conducted for 318 school children between 1st and 7th standard and 112 mothers in Madlihalli, Aralaguppe, Byrapura, Kallushettyhalli and Kuppur village of Tiptur taluk. A wide range of topics were covered, including sustainable agriculture, water and energy conservation, greenhouse cultivation and organic farming.

On the occasion of Republic Day on 26th January, a drawing competition on water conservation was held for the primary school children. For the higher primary school children, an essay writing competition was held on the same topic. Prizes were awarded for the three best drawings and essays. On the occasion of the Indian Independence Day, similar competitions were held on the theme of nutritious vegetables. For the mothers, a competition was held on nutritious cooking recipes using vegetables. The recipes were judged on nutritional value, evaluated by Anganwadi teachers and awarded prizes. The competitions have successfully created enthusiasm among the children and their mothers. They now look forward to their upcoming sessions and listen with rapt attention. Simultaneously, the trainers have also grown in confidence about the conduct of awareness meetings and do not have any inhibitions in addressing meetings for women and children. The trainers displayed good skills in formulating story lines on environment conservation as a theme using local situations and attitudes.

Another training program was organized, revolving around organic farming and its benefits as well as greenhouse cultivation methods. The training was conducted by Dr. M. Prabhakar, Principal Scientist, Division of Indian Institute for Horticultural Research (IIHR), Bangalore. Seven trainers participated therein and visited IIHR, Hesaraghatta Bangalore.

A greenhouse has been built in the Women's Technology Park in Aralaguppe village, where the trainers will be trained on greenhouse cultivation of vegetables. They will also be exposed to water and soil conservation practices. The trainers will additionally involve the school children in the cultivation of vegetables, sharing a part of the produce with the local schools for their mid day meals, and engage the community in the greenhouse cultivation activities.



Awareness session for the children

Micro-enterprise for Rural Women in the Production of Horticultural Products Dried in a Biomass Dryer

Supported by: National Bank for Agriculture and Rural Development (NABARD), Bangalore

On the recommendation of the Department of Science and Technology (DST), Government of India, NABARD at Mumbai suggested that TIDE submit a proposal for the usage of biomass dryers. Accordingly, a proposal to set up women's enterprises for dried vegetable products was sent to NABARD. It was suggested that the project be funded in two phases. The first phase would consist of a market survey to assess the availability of markets for dried vegetables. The second phase would be taken up based on results of the market survey phase.



SHG members drying vegetables for samples

The market survey (outsourced to Feedback Consulting, a market research company) was carried out in Mumbai, Bangalore and Delhi. Samples of dried vegetables, i.e. onion, garlic, bitter gourd, tomato and okra, were produced by Vasuki Self-Help Group (SHG) in Puttur, for the survey. Food quality studies were carried out on the dried vegetables.

The survey indicated that a considerable market exists for dried garlic and bitter gourd. Dried onion could also find a market, provided there are appropriate piece sizes and better packaging. However, dried tomato and okra did not find much market potential in any of the cities.

Techno-economics of drying vegetables in a biomass dryer were worked out. The 'willingness to pay', determined by the market survey, was in conformity with the selling price of the dried garlic and onions.

Food safety and quality studies were undertaken by the Institute for Analysis of Dairy, Food and Culture (IADFAC), an NABL accredited laboratory in Bangalore. Apart from the establishment of safety standards for the dried vegetables, the tests also enabled finalization of pre-treatments and drying procedures for the products, for them to have a shelf life of at least six months.

Different types of packaging were tried to determine the appropriate packing. Packaging specifications were also determined to help achieving a longer shelf life for the dried products.

Based on the results of phase one, a proposal to develop micro-enterprises for drying garlic and onion has been sent to NABARD.



Packed Dried Vegetables

Smokeless Village Program

Supported by: Various Donors

The smokeless village program supported by ETC Netherlands and the Petroleum Conservation Research Agency in the previous years has now evolved into a larger program with the Karnataka Forest Department accepting the Sarala stove as the stove to be disseminated as part of their “Hasirugram Yojane” (Green Village Program). Under this program, selected villages in all districts are to be made model villages. The forest department is now getting these stoves built by TIDE trained women and TIDE entrepreneurs.



Katayani, TIDE's stove builder, constructing a smokeless

TIDE promotes this project as a donation option on its website and the link provided online is frequently visited. Individuals and companies have approached TIDE with donations for the conversion of ordinary villages to smokeless villages. The newspaper Times of India covered the “Smokeless Village Program” in their regular feature titled ‘City of Angels’.

TIDE's definition of a smokeless village is one where at least 80% of households in a village use a smokeless stove for cooking. The benchmark was set at 80% because compelling social and cultural reasons prevent some households from demolishing their old stoves..

TIDE has received donations for 337 stoves in the previous year and 136 stoves in the current year. TIDE stove builder Katayani identified and selected the villages based on the number of households and accessibility. She has already built 350 stoves under this program.

The villages where stoves were built using donations received by TIDE are:

Kanchinaganahalli	70 stoves
Doddaguni	260 stoves
Marshethalli	20 stoves

Feedback on the performance of the stove has been collected by Katayani from the users and the feedback indicates that the families have benefited from better indoor environment and the women have benefitted by reduction in drudgery

The various programs to introduce smokeless stoves in the rural areas have helped the stove builders earn higher incomes and that has resulted in building their social status and confidence. .

The stove entrepreneurs have started interacting with the Forest Department and obtaining orders from their schemes. They have got orders for more than 750 stoves from the Forest Department in North Karnataka.

Women's Entrepreneurship for Domestic Lighting Systems

Supported by: United States Agency for International Development (USAID)
South Asia Regional Initiative (SARI) Energy

The primary objective of this project is to build at least 6 women's enterprises in energy-efficient domestic lighting systems, for rural households to start using low-cost & low-energy consuming lights. The women would conduct awareness meetings on energy efficient lights in their villages and set up individual enterprises.

Six women, who have been trained by TIDE, conduct awareness meetings in their villages that are predominantly for women belonging to Self-help Groups. As a result of information dissemination, heightened interest and knowledge sharing, they receive orders from individuals of the community as well as small vendors for the supply of energy efficient lights. Awareness meetings have also been conducted for school children, Stree Shakthi groups, women SHGs and the Gram Panchayath and stakeholders of the community, in order to sensitize them towards various aspects of energy conservation. Awareness materials used by the entrepreneurs include posters, catalogues and handouts that have been created and provided by TIDE. The entrepreneurs have been able to collect orders and sell around 700 lights, earning profits amounting to Rs. 23'000/- during the year.



Entrepreneurs sharing their business experiences ...

The project has enabled TIDE to build a linkage with the Indian Society of Lighting Engineers, Karnataka (ISLE K), who helped to train the women in energy efficient lighting. They also assisted TIDE on building connections with dealers of lights. In turn, TIDE has established links between the SHG women entrepreneurs and the light vendors. Furthermore, the women developed networks of their own in Tumkur district and more linkages are currently being explored.

The entrepreneurs reported that a number of women who bought their lights have reported a 40% reduction in their electricity bills. Entrepreneurs have started to approach and collecting orders from local and electronic shops, then supplying the required products to them. Women entrepreneurs have also taken the responsibility of organizing community awareness meetings. They enthusiastically conduct sessions on energy conservation, share aspects on different types of energy efficient lights and explain the benefits of community awareness and environmental conservation. In course of the project, SHG members have gained increased confidence, which is reflected in them owning and sharing responsibilities of organizing and conducting community programs and awareness creation meetings.

The women have also carried out promotion of the products using vehicle campaigns.

School and Community Horticulture Enterprise – Nutritional Support for Primary Education

Supported by: Sir Dorabji Tata Trust (SDTT)

This project, the aim of which is to demonstrate the potential of sustainable technology interventions through social, economic and cultural transformations, began in a cluster of villages in May 2008. Primary objectives of the project include capacity building in precision farming techniques of women with small land holdings and its acceptance / potential as a livelihood option. In turn, this would foster community involvement for augmentation of the nutritional content in mid day meals of children at rural schools and support the development of a methodology to scale up the social enterprise.

In 2010, focus was directed towards the construction of 5 additional greenhouses, increased awareness creation and on training in greenhouse horticulture for new women SHGs; Activities included pre-cropping measures like bed preparation inside the green house, manuring and growing of papaya plants outside the green house by the new groups. Supply of vegetables, data collection from school authorities, monitoring of crop health, collation of responses from school children and teachers, data collection on crop yield and income, development of new linkages for marketing purposes and other support services for the cluster of greenhouses were taken up by the project.



SHG member supplying vegetables to the school

The project staff and the selected groups held meetings with the principals of the government primary schools nearest to the greenhouses and explained to them the aims and objectives of the project, especially with regard to the enrichment of nutritional aspects. Each SHG was linked to one primary school and the permission to supply vegetables to the schools were obtained from Director, Block Resource Centre, Tiptur taluk.

Each SHG would contribute 50 grams of vegetables / child / day to the government school to supplement the existing vegetables being used in the mid-day meal. (reported to be around 25 gm of vegetables / child / day).

Schools being provided with vegetables from SHGs

Sl. No.	Name of the School	Students
1	Govt. lower Primary School, Manjunathpura (Hulihalli)	25
2	Social Welfare Hostel, Bennayakanahalli	50
3	Govt. lower Primary School, Makanahalli (Albur)	34
4	Govt. lower Primary School, Byrapura	33
5	Govt. lower Primary School, Lingadahalli (Chettanahalli)	25

ment the existing vegetables being used in the mid-day meal. (reported to be around 25 gm of vegetables / child / day).

A naturally ventilated greenhouse of 200 square meter area was constructed on the agricultural land of one member of each SHG. Coloured capsicum plants were planted in all

the greenhouses. Experts from GKVK and other consultants regularly visit the greenhouses to monitor the plant growth.

The SHG groups have started supplying the vegetables to the schools.

Development and Introduction of Training Courses in Biomass-based Drying Technologies

Supported by: ETC

This three-year project which commenced in March 2007, received a no-cost extension upto December 2010.

Main project objectives are:

- Strengthen TIDE's training capacity in developing training materials and methods in conducting courses in technical training and MED training.
- Four enterprises using biomass dryers would be established by women after having undergone TIDE's training courses.
- Technical training in the use of dryers to be conducted for other groups.
- Women who set up enterprises earn more than they would have, had they been employed as farm labourers and spent more time with their children instead

The project resulted in 4 groups of women running enterprises using biomass dryers.

In 2010, increased capacity building of TIDE's team as trainers was taken up. A 2-day "Training of Trainers" course was organised and conducted by Ms. Ujwala Jatkar. TIDE's team also attended a 2-day training on "Food Safety, Quality and Certification", conducted by Dr. Mridul Salgame, Managing Director of IADFAC Laboratory. Another group of TIDE members attended a course on the usage



Awareness meeting on biomass drying

and functions of the "Flash Software", to help render newly developed training materials more interesting. The team is also in the process of improving some of the existing training materials.

As part of documentation, 2 films were produced. One film, in English language, is based on TIDE's training capabilities. The other, dubbed in Kannada and Malayalam, revolves around the usage of biomass dryers as an option to generate livelihood for women.

A study of the women's enterprises was taken up to gauge whether they earn more than they would through farm labour and have more time to spare after taking up the enterprises. It was found that the enterprises have led to better income generation than farm labour has and have also allowed the women to work at their convenience.

A group discussion was held with experts on gender issues as well as on women and livelihoods, in order to review past projects and suggest a suitable way forward for TIDE's women and livelihoods projects.

Technical training using the materials developed in the project was conducted for five NGOs, as a part of the "All India Coordinated Research Project (AICRP)" project on biomass-based tray dryers.

Awareness meetings on biomass tray dryers as a viable livelihood option for women as well as field visits were conducted in Kerala, Karnataka and Tamilnadu..

Capacity Building of Women for a Greenhouse Horticulture Enterprise

Supported by: GSRD Foundation

The purpose of this project is to train groups of women in rural areas of Eralagere and Aralaguppe village, Tiptur taluk, on greenhouse horticulture. It also aims at motivating them to adopt efficient agricultural practices and spread environmental awareness created, through the project, amongst relevant agencies. Running a greenhouse horticulture enterprise is a constructive livelihood option for rural women, as they generate additional income by growing high value crops in greenhouses.

In 2010, major focus was directed towards the selection of Bhavani Self-Help-Group (SHG) in Aralaguppe village for the greenhouse horticulture enterprise, awareness creation regarding the project and its goals, and carrying out of other project activities. The construction of the second 500 square meter greenhouse was initiated and its installation completed by December 2010. Training material was prepared in the local language to instruct and train the women. The training was conducted for the women in all aspects of green house cultivation.

Nandini SHG of Eralagere cultivated coloured capsicum as the first and second crop in the greenhouse. The SHG harvested 1139 kgs and the income generated thereby amounted to Rs. 20,000. Unfortunately, the profitability was not very high due to market price fluctuations and other factors beyond the control of the SHG members.

Subsequently, the SHG planted 2280 pole bean seedlings and harvested 900 kgs. earning a total income of around Rs. 12,000. In October 2010, 1920 tomato plants were sowed.

In addition, experts and project teams pay visits to the sites on a regular basis.

By September 2010, around 150,000 liters of rainwater were collected from the 500 square meter greenhouse in Eralagere village. The harvested rainwater was used to irrigate crops in the greenhouse, thus reducing the pressure upon groundwater aquifers by around 30% and saving roughly 123 kWh of energy required to pump the water from 600 foot deep bore wells. Another technological intervention implemented was the saving of water through the installation of a drip irrigation system in the greenhouse for the watering of crops. This measure saved nearly 30% of water consumption. Hence, greenhouse horticulture successfully demonstrated better uses of technology for improved agricultural practices.



SHG women engage in greenhouse cultivation activities

SHG members are exploring possible options to take loans for the installation of greenhouses on their land, with financial support from local banks / subsidies from the local horticulture department. TIDE will continue to strive towards the development of stronger and wider market linkages for the produce from the greenhouse horticulture enterprise.

Dissemination of Low Capacity Brick Kiln Technology to Promote Income Generation Activities among Women SHGs

Supported by: National Research and Development Centre (NRDC)



Firing of bricks in the brick kiln

The project involved

- construction of a low capacity brick kiln
- training of a Self-Help Group (SHG) on the production of green bricks and on firing of the kiln,
- demonstration of additional income generation options through agriculture off season and development of marketing linkages for the manufactured bricks.

The brick kiln was installed in TIDE's Women's Technology Park (WTP). "Bhavani Streeshakti Sangha" of Aralaguppe village was identified for the training. The training covered the loading of green bricks and the technique of firing the bricks.

HP Help & Life Programs

Supported by: Hewlett Packard

TIDE conducted the GET-IT training of the HP-HELP program to 150 trainees of the following NGOs working with disadvantaged youth:

Bangalore Rural Educational and Development Society, Bangalore.

UNNATI, Bangalore.

COSTFORD, Thrissur.

TIDE also conducted training for computer teachers at UNNATI and a basic computer training for students of Friends of Children, Bangalore.

This year, TIDE was awarded a grant to continue trainings in Bangalore and with other partner institutions. The project would also enable the set-up of a TIDE training centre, exclusively for women, at the Women's Technology Park in Aralaguppe. Three more trainers have been trained to facilitate this.



Training of Trainers

Introduction of Energy-efficiency Stoves in the Sandbox

Supported by: Deshpande Foundation

The objective of the project was to find and encourage entrepreneurs to disseminate the various energy efficient products of TIDE in the five “Sandbox” districts of North Karnataka.

The following are some of the products with significant market potential in the Sandbox:

- Jaggery Stove
- Khova-making Stove
- Bathwater Stove
- Household Sarala Stove
- Areca Stove
- Large Cook Stove



Jaggery-making stove

Masons identified by TIDE's field staff for the construction of the stoves were trained on technical aspects of the stoves by TIDE's masons and engineers. TIDE also supported the masons through vehicle campaigns. However, they could yet not become full-fledged entrepreneurs as they switch to their conventional infrastructure and building-construction work off season and are also unable to spare time to scout for new orders. The stove construction business will result in commendable profits (nearing Rs. 20,000), if each entrepreneur gets orders amounting to Rs.60,000.

Currently, six entrepreneurs who have been trained on the technical issues of the various energy efficient products of TIDE are promoting them in the Sandbox and have been linked to the masons who are trained on the construction of the devices. Five masons are trained on the construction of jaggery stoves and 4 masons on the construction of bathwater, areca and khova stoves.

The entrepreneurs in the Deshpande sandbox region have been getting orders from the regional forest department for the construction of stoves in specific villages and are thereby rendering them smokeless villages.

Based on discussions with the entrepreneurs about their needs, they were given support to put up demo units and create promotional materials like brochures, banners, etc. This has further helped them to successfully receive more orders. Further marketing support will be extended by the project to help the entrepreneurs develop their business. They will also be assisted in the development of a business plan for their venture in energy efficient products.

Human Resource Profile

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.

Mr. Ashiq Ahamed Chemmalasari

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.

Human Resource Profile

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.

Human Resource Profile

Mr. Vasanth Patil

Project Associate

He actively assists awareness creation, market development and promotional activities.

Mr. Nataraj C.

Project Technician

As part of the technical team, he is involved in construction of smokeless stoves and the installation of biomass based devices.

Mr. Jagadeesh N Hanchinal

Project Associate

He has a Master's Degree in Management of Non-Profit Organization, he assists various project activities.

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

Founder / 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 Post-graduate 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 fuel-efficient wood and other biomass-burning devices and technologies for rural areas.

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.

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