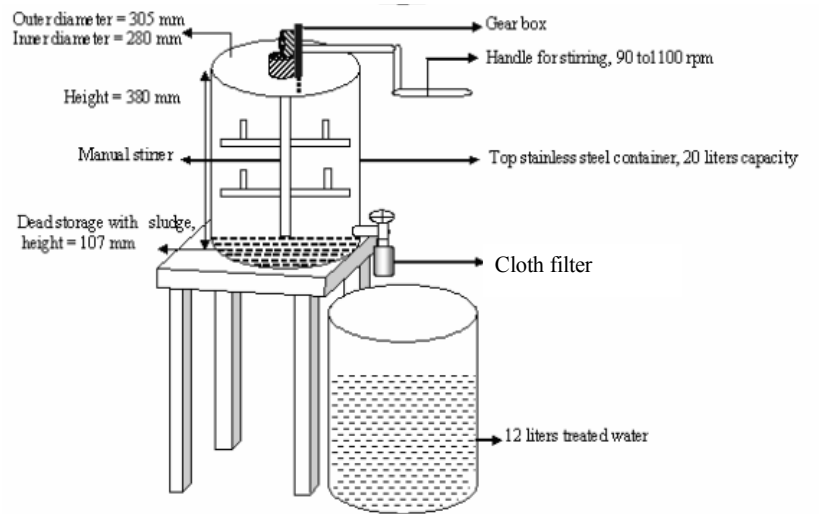
Specific Achievements:

- Development and demonstration of domestic de-fluoridation unit (DDU) by CST, Indian Institute of Sciences (IISc), Bangalore to treat fluoride-contaminated water at individual household level. The method is non-toxic and it does not involve any recharge process and thus avoids generation of corrosive and toxic wastes. This treatment method has been found to be robust method that can treat fluoride-contaminated groundwater independent of geochemical conditions. It has been successfully demonstrated at the field level in Kolar Dist., Karnataka. The treatment cost is reported to be 20-30 paise/liter. Sludge produced by the method is being re-cycled in environment friendly manner in building application like stabilized bricks and blocks making.



Domestic De-fluoridation Unit (DDU) developed by IISc, Bangalore

- Research Programme on Biological Integration of Farming Activities & Resource Management (BIOFARM) for resource poor small farmers is being implemented at 18 locations spread across different agro-ecological regions of the country to develop biological resource integrated model farms for improving nutritional and livelihood security of the small farmers. Work is in progress to study the resource flow and economic efficacy of the experiments being carried out at 15-20 small farmer's farms at each location by integrating various farming practices/components and sub-components for improvement in whole farm productivity and income.

Integrated farming practices like multi-cropping system, livestock development, water management etc. being optimized & adopted in participatory mode under BIOFARM programme to sustain the productivity and better income at small farm levels.

- Cost effective and viable clay emitters system of different shapes and sizes for irrigating horticultural crops using potable and even brackish water and employing them in the fields of small and marginal farmers. Emitter having various shapes (like gully, balloon, block, glass etc) and size, performs equally well in experiments as well as field condition. Emitters can make use of even saline water to irrigate perennial crops. This system makes use of natural forces like capillarity, osmotic potential, tensile strength, diffusion pressure deficit & humidity in an integrated fashion by virtue of which the moisture is delivered into the root zone as per the demand of the crop in each and every season.

- Twelve Enterprise Incubators for Rural Women or "Udyamita Suvidha Kendra" are being established in Datia, Madhya Pradesh for transferring various technologies like Pre-Fab VSBK, Gasifier, Mechanized pottery, MCR tiles to provide women an opportunity of earning their own living at their own place.

- Design and development of suitable briquetttor machine to manufacture the coir pith fuel cakes (pellets) as an alternate fuel.

- Quality fibre extraction techniques of banana in order to use the waste from banana to manufacture quality cloth, paper and board.

- The pulses of mountain have always been in high demand because their unique taste and quality. In a project in five villages namely Bon, Malla, Tukhar and Mukhva of Uttarkashi district and Ambiwala village of Dehra Dun district of Uttaranchal have been developed as pulse villages with trials of improved varieties of seeds and improved agriculture practices. About 120 women (25 from each village) have got the training on cultivation practices, grading and packaging and making value added products.

Specific Achievements:

- Development of simple and cost effective rubber sheet drier using the concept of reverse flow of hot air by natural convection, jointly by Regional Research Laboratory & Mitraniketan based in Trivandrum to benefit small farmers involved in rubber plantation.

Development of Rubber Sheet Dryer by Mitraniketan and RRL, Trivandrum

- Technologies for Women's Empowerment & Rural Application: Grading devise for desert fruits; Nursery Techniques; Techniques of Dehydration of flowers ; Pedal operated Rice Mill & Rice transplanter; Bio-fertilizers production eg. Azolla, BGA; Extraction and use of natural dyes; Value addition products from sea weed; Development of wool carding machine; and ergonomically suitable tools/equipments for use by women.

- Upgradation of traditional water mills (gharats) by HESCO, Dehradun for power generation and multi purpose use: Cost-effective and efficient alternative to the inhabitants of the remote mountain villages to provide electricity for household purpose as well as for micro-enterprise linked activities such as flour grinding, cotton combing, floriculture, fisheries, and bee-keeping and honey production etc.

- Introduced improved agri-horticultural implements for bridging mechanization gaps in the cultivation of paddy and other crops in 3 villages of Papum Pare district of Arunachal Pradesh resulting in saving of labour, time and cost of operation, with better grain recovery and market value.

- Programme on telemedicine application in rural areas by Sir Ganga Ram Hospital (SGRH), New Delhi to provide free tertiary consultation to weaker sections of the society by making modern health care facilities available to the population by setting up medical kiosks. Three such medical kiosks have been setup in Haryana, Himachal Pradesh and Rajasthan.

- Design & development of a cost effective, light & compact, easy to install, operate and maintain 'Washer Pump' to lift water from a very large depth of water level (40-50 feet) of the open water source (Deep wells) befitting tribal families at village Tati – Singars, Angora block in Ranch district.

Cost-effective improved water lifting system (capacity 30-35 liters/min) using Plastic Washer Pump designed and developed by Society for Rural Industrialization, Ranchi.

- Demonstration cum capacity building in technology areas such as improved agriculture, horticulture, animal husbandry, upgradation of local looms to tribal women in remote tribals' villages in Joshimath Distt., UT (Niti Valley).

Specific Achievements:

- Continuation of long term support to strengthen 12 S&T based voluntary groups as centres of excellence in rural areas which is essentially to nurture S & T personnel to take up challenges to work on rural problems and evolving innovative S & T based solutions. These groups spread in different geographical locations, are working on location specific problems with proper interface and support from relevant S & T institutions/laboratories and local community.

- Development of portable multi-purpose pump by NB Institute of Rural Technology (NBIRT) a science based voluntary organization in Tripura, which can supply 20lit/min petrol or diesel or water. This system designed with metering arrangement on rickshaw van will be of immense utility to meet local needs in rural areas for small irrigation or for cooking and lighting purposes. The capacity of the tank attached with the pump is 300liter.

Multi-purpose portable solar pump system developed by NBIRT, Tripura

- Setting up of 4 Rural & 18 Women Technology Parks as nucleus for technological empowerment & capacity building of rural poor & women. These parks have been facilitated in the States viz. Andhra Pradesh, Arunachal Pradesh, Assam, Gujarat, Karnataka, Kerala, Madhya Pradesh, Meghalaya, Tripura, Maharahtra, Pondicherry, Rajasthan, Tamil Nadu, West Bengal.

- Programme on improved Fodder cultivation (12 locations) for transfer of improved fodder production technologies to meet the fodder demand in rural areas involving women.

- Development of nursery technology with bio-fertilizer packages using VAM fungi and plant growth promoting Rhizo-microorganisms (PGPRs) with multi-locational trials for regeneration of degraded forest and waste lands essentially for tree species *Acacia auriculiformis*, *Tectona grandis* and *Dalbergia sissoo*. The complete package developed by Centre for Natural Biological Resources and Community Development (CNBRCD), Bangalore has been demonstrated to farmers and village forest community who are using biofertilizer packages to grow forest tree species in Mandya Dist., Karnataka involving Karnataka State Department of Forest.

- Intervention programme on adaptation of water filters based on membrane filtration technology developed by NCL, Pune. 520 such water filter units have been installed in the rural locations as demonstration units in two states – Arunachal Pradesh and Nagaland in collaboration with the respective State Governments for providing clean drinking water free of virus and bacteria.

- Development of Solar dryer Technology based package on Integration of Solar Thermal & Photovoltaic Technologies for safe, hygienic quality processing & dehydration of fruits & fruit Products, leafy vegetables, medicinal & herbal products by Society for Energy, Environment and Development (SEED), Hyderabad.

Products developed using solar dryer technology