

Title of the practice: “LAB TO LAND”

Objectives of the practice:

- To demonstrate and train the village farmers for sustainable agriculture.
- To educate women self help group on production of vermi-compost, bio-fertilizers and bio gas in the villages in close proximity of the College.
- To disseminate the knowledge of renewable energy sources.
- To unite and form women clusters and women federations in STAND adopted villages.
- To create entrepreneurial culture among women self help group in STAND adopted villages.
- To promote socio-economic development of women in STAND adopted villages.

The Context:

Tirunelveli district is predominantly an agricultural district. Though the district often experiences missed monsoons, a huge area of its agricultural lands is fed by the perennial river Thamirabarani along with rivers Manimuttaru, Pachaiyaru, Nambiyaru, and Chittaru. The district has fertile soils in scattered regions. Less fertile red loam soil is distributed over most of the region. The network of the irrigation system makes full use of the water resources. In the district there are number of crops having been cultivated.

In order to preserve the soil fertility and the eco system, the promotion of agriculture should be upshot by innovative and sustainable technology through cautious approach in using fertilizers. Biofertilizers can play a very significant role in improving soil fertility by fixing atmospheric nitrogen, under free living condition and in association with plant root nodules. Biofertilizer from vermicomposting contains more nitrogen and appreciable amount of other nutrients with beneficial microbes like azotobactor, azospirillum and rhizobium. The load of microbes aided in the release of nitrogen and made it as readily available in the full fledged condition. They also played key role in the release of soil fixed nutrients that forms basis for better vegetative growth and development. Vermicomposting also helps conservation of soil and moisture.

Azolla is the most promising aquatic plant for livestock feed due to its ease of cultivation, productivity and nutritive value. Azolla has enormous potential as a livestock feed due to:

- Its high content in proteins, essential amino acids, vitamins (vitamin A, vitamin B12, Beta Carotene), growth promoter intermediaries and minerals.
- Its ability to proliferate without inorganic nitrogen fertilization.
- Its high rate of growth in water without the need to displace existing crops or natural ecological systems.

It has also been used for many years to feed pigs, ducks, chickens, cattle, fish, sheep and goats and rabbits. Azolla's high nitrogen content makes it an ideal bio-fertilizer.

Bio gas is a renewable energy source. It is produced by the breakdown of organic matter from agricultural waste, manure, plant materials, green waste, food waste and sewage, in the absence of oxygen.

Biogas is known as an environmentally-friendly energy source because it alleviates two major environmental problems simultaneously:

1. The global waste epidemic that releases dangerous levels of methane gas every day
2. The reliance on fossil fuel energy to meet global energy demand

By converting organic waste into energy, biogas is utilizing nature's elegant tendency to recycle substances into productive resources. Biogas generation recovers waste materials that would otherwise pollute landfills; prevents the use of toxic chemicals in sewage treatment plants, and saves money, energy, and material by treating waste on-site. Moreover, biogas usage does not require fossil fuel extraction to produce energy.

In this context, SXC initiated LAB TO LAND programme with the help of the expertise from professors of Botany, Economics and Zoology in association with STAND director, to promote production of vermicompost, Azolla and bio gas in the STAND adopted villages.

The Practice:

The villages situated within the radius of 30 Km from the College are adopted to implement this programme. This programme was started by STAND-INCUBATION CENTRE with the help of research grant of Rs. 34, 70, 000/- received from the Department of Science and Technology,

Government of India for the project entitled 'Socio-economic empowerment of self-help group women in STAND adopted villages through compost, bio-fertilizer and biogas production in Tirunelveli district in Tamil Nadu'. Training is provided on production of vermicompost, Azolla and Bio-gas by the students, staff coordinators and faculty coordinators of each department. Through this project, the farmers of the STAND adopted villages are given awareness and hands on training to install vermicompost pit, Azolla pit and bio-gas plant. Vermicompost pits and Azolla pits are installed in their own land or backyards. Bio-gas plants are installed in the backyards of their homes. Totally, 737 women from STAND adopted villages participated in the awareness and training programme in STAND training centre as well as in their respective villages. On the whole 35 women self-help groups were formed in STAND adopted villages and trained for the production of vermicompost, Azolla and biogas. Thirty one village women are facilitated by the Department of STAND to apply bank loans for marketing Azolla and vermicompost produced in the start-ups.

Evidence of Success:

Around 45 villages in the Tirunelveli district got benefitted by this lab to land programme where 60% of the people are women in marginalized and downtrodden status. This programme created 800 women entrepreneurs in 45 villages during last five years.

Problems encountered and resources required:

Due to insufficient funding, Department of STAND is not able to expand this programme to more number of villages. Also, production of Spirulina production and ornamental fish culture cannot reach the level of start-up and business venture due to lack of funding and unavailability of bank loans.

