

## Reducing input costs becomes imperative

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The main objective of technology-based agriculture must be to reduce input cost while increasing the yield, particularly for small and marginal farmers. Agriculture scientists would like farmers to realise that reduction of chemical-based fertilizers and pesticides can benefit both man and earth over the long run. Farmers in particular would stand to gain as a major portion of their money is spent on buying these chemicals. The focus, they believe, must shift to educating farmers on the value of waste matter being generated in both their fields and homes, and availability of technologies to convert waste into wealth. Their farm economics will definitely improve if they realise and adopt this. It is precisely on these lines that scientists at the Myrada Krishi Vigyan Kendra at Gobichettipalayam, in Erode, Tamil Nadu have been working for the past several years in implementing a project called IFD (Integrated farm development model). Also called as LESA (Low External Input Sustainable Agriculture), the project is at present operational in about 32 villages in Erode district.

### Designed well

According to P. Alagesan, Programme Coordinator, IFD is an innovative model especially designed for small-scale farmers for improving farm productivity in a sustainable manner by recycling farm and home wastes. “The main concept of IFD is to integrate the animal and human wastes into useful and productive components for the manufacture of vermicompost, pest repellents and biogas, thereby reducing input cost for farmers,” he says. For example, in villages, the urine and dung from cattle are usually washed into a drain or the dung is collected, dried and used as cooking fuel. “But our IFD farmers collect the urine and dung in a collection tank and use it for generating biogas and manufacturing bio growth promoters such as Panchagavya and Amirtha karaisal, and to make bio pest-repellants,” explains Mr. Alagesan.

### Breeding earthworms

The spent slurry from the biogas plant is used for making high quality manure by adding other farm wastes to it, and can also be used for breeding earthworms. “To ensure food and fodder security, our research team has been conducting several programmes to emphasise the importance of kitchen gardens. The size of the kitchen garden depends on the family size and income (usually 2-5 cents). A limited supply of water channelled through a low cost micro-irrigation system ensures a good harvest,” he elaborates. High yielding green fodder varieties are

also grown in these gardens to provide fodder for animals. By growing these fodder varieties, the cost of buying feed has come down by nearly 12 per cent, according to Mr. Alagesan.

Technology must be farmer friendly, and IFD farmers have been trained in scientific storage of harvested produce. The farmers store their harvested grains in special grain structures called 'pucca koti' (in Hindi) and metal bins. These storage structures have been able to minimise grain loss by nearly 20 per cent, and also protect the harvested produce from pest and pathogenic infestations. Finally, the waste generated from the farmer's family is also not wasted. An eco-san toilet has been designed to collect the faeces and urine separately. The faeces is covered with wood ash after collection and it falls into a soil pit and decomposes into a rich nutrient which can be safely used as manure.

The urine is separately channelled to the kitchen garden where it seeps into the earth to nourish the plants. Studies conducted in these villages have shown that about 35 per cent of external input cost has been reduced by effective utilisation of farm and home wastes.

### **Forest regeneration**

Use of biogas (2 cubic metre capacity has the potential to save about 210 kg of fuel wood per month) has also brought down firewood consumption. In a village called M.P. Doddi, about nine tonnes of fuel wood in a month has been saved, having a direct impact on regeneration of forest area around the region. Respiratory problems commonly encountered by the rural women in smoky kitchens have largely been minimised. UNICEF has identified this as an innovative model and has planned to replicate it in other parts of the country.

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