

# Mini Cold Storage Units

Generating Wealth  
for Small Farmers by reducing  
Post Harvest Wastage

for small farmers



Development Marketplace



Tiruchirappalli Regional Engineering College  
Science and Technology Entrepreneurs Park



## The Need of the Hour:

Food Security is a major concern for any nation, especially for a developing country like India. 'Ensuring food for all', is a pre-requisite for the stability of any democratic country like India. Recognizing this, the Government of India initiated a number of food security measures.

Way back in the 1970's, the Green Revolution in India ensured adequate food production. This was followed by another major initiative in food security - the Public Distribution System. A massive network of public distribution stores ensured fair and equitable distribution of food to all sections of the society.

More value added nutritive food security initiatives like the White Revolution for adequate production of milk and eggs and targeted initiatives such as Free Noon Meal Schemes, then followed.

Still 225 million Indians are mal-nourished with 45% of them being children who are under-nourished and suffering from mal-nutrition problems.

Paradoxically, of the 180 million tons of vegetables and fruits produced every year in India, 25 to 30% is wasted. This is a whopping \$6 billion vegetable wastage.

India has only 5,386 cold storage facilities which cater to a mere 13% of the requirement. There are large scale cold storage units in India, meeting the requirements of large farmers and there are home refrigerators which cater to domestic purposes. A sea of small farmers is completely left out.



## A Perennial Problem for Small Farmers:

In tropical climate conditions, where day time temperatures are high, the wastage of vegetables and fruits are huge, cutting into the income levels of farmers. This problem is even more intense among the small farmers, who cannot afford the usage of large cold storage facilities. This results in huge wastage of vegetables and also adverse loss of value, leading to colossal loss of revenue for the small farmers.



## A Boon to Resolve this Plight:

In its quest to address this critical issue of small farmers, with the Development MarketPlace's valuable financial support, TREC-STEP, a multi-dimensional development organization in Tiruchirappalli in India has initiated an innovative project for developing Mini Cold Store Units suitable for the small farmers markets in 2009.

### The objectives of the project are:

- Reducing the wastage of vegetables by 50% or more, in the vegetable and farmers' markets.
- Incubating Public-Private-Partnership units with the entrepreneurial drive of trained youth, in running the proposed cold storage units as a viable business, thus creating new jobs and project sustainability
- Developing a successful market-focused development model, for enabling faster replication of the project initiatives, across the country and elsewhere

## Mini Cold Storage Units:

### Bringing Immense Relief to the Farmer's Community

Under this Development Marketplace supported project, TREC-STEP has designed and installed custom made innovative Mini Cold Storage units at 5 farmers markets (Karur, Kumbakonam, Salem, Nanganallur and Palayamkottai) in the state of Tamilnadu, to suit the requirements of the small farmers. These Mini cold storage units are designed as sharable common facilities which are useful to the small farmers and to restore few dollars more to their hands.

Earlier, to understand the small farmer's requirements, TREC-STEP had conducted a series of structured surveys, interviews and interactions with farming communities, government personnel, technologists, market managers and other interest groups. TREC-STEP has also deployed an expert technology group to analyze and understand the problem and field requirements of farmers markets.

To suit the seasonal conditions and vegetable storage requirements, TREC-STEP has designed modular cold storage chambers of varied sizes in each cold storage unit. By having modular construction, in the lean periods and in winter the farmers can operate only one chamber and thus reduce the power cost. Humidifiers with automatic sensors were also installed in each chamber to maintain the freshness of the vegetables.

Under the Development Marketplace project, TREC-STEP has also trained semi-urban and rural youth in Air Conditioning and Refrigeration Technology and Business skills for ensuring effective operation of the Mini Cold Storage units. On-site technical training was also provided to the youth at the installed mini cold storage units. The trained youth are deployed in all the 5 farmers markets to effectively operate and maintain the mini cold storage units.

With these Development Marketplace supported Mini Cold Storage units, the small farmers are able to bring and sell more vegetables everyday in the markets and are able to restore more than 50% value of the vegetables which, otherwise would have gone as waste without the cold storage facilities. Thus the Cold storage units designed and installed under the project are providing the small farmers increased income levels while reducing the wastage of vegetables. These facilities have now emerged as a boon for this bottom of the pyramid section of the society. Mass replication of this innovative initiative shall create wealth for many more small farmers and also new jobs for the rural unemployed.

## Testimony from Farmers:



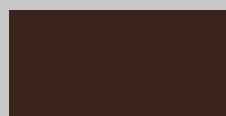
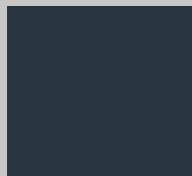
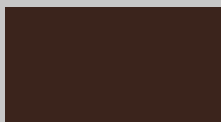
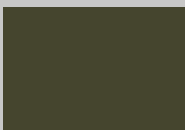
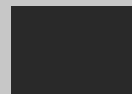
### Farmer, Palayamkottai farmers market:

"The farmers are bringing their toiled and hard-earned vegetables and selling them at a price profitable to them in the farmers markets. If they are not sold fully, they keep the remaining vegetables in this mini cold storage facility established here. They sell them the next day morning. By keeping the vegetables in the cold storage, the farmers' great anxiety of inability to sell the vegetables is fully removed".



### President Farmers Association, Kumbakonam farmers market:

"Earlier, the vegetables which are kept here for the next day became dry and we sold them for half their price. The rest became dry and turned into waste. Now, we keep the remaining vegetables in the cold storage unit. The next day we are able to get profit and for our customers too it is very beneficial. On behalf of the farmers market and also on behalf of the customers, we thank the organizations which established this Mini Cold Storage unit".



### **About TREC-STEP..**

TREC-STEP is a multi-dimensional developmental organization promoted in 1986, by the central and state governments of India, along with the financial institutions and other institutions for promoting technology and entrepreneurship initiatives. It is a technology business incubator with a strategic focus on promoting new entrepreneurial start-up ventures into successful high growth business ventures. TREC-STEP has worked with a number of international developmental organizations in development projects, such as UNDP, UNIDO, European Commission, the World Bank, infoDev, British Council Division, IDRC etc., TREC-STEP has worked almost with all the government agencies, development agencies and major financial institutions, in development projects focusing on the technology and entrepreneurship domain. TREC-STEP has also won many awards and accolades from the Government of India, World Bank, European Union and others. For more information, kindly visit [www.trecstep.com](http://www.trecstep.com) ...

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