

The success story of Aagun[®] a 24x7 constant temperature dryer in Meghalaya

1. Problem –

Meghalaya is a leading producer of spices, ginger, pineapple, banana, tomato, cashew nut, turmeric, and oranges. About 80% of the population depends on agriculture for their livelihood. Due to poor storage facilities, poor transport network, and lack of electricity in remote locations across the state, it is very difficult to manage perishables. Drying of horticulture produce is one of the options for farmers to avoid wastage of perishables. However, drying is an energy-intensive process.

2. Solution –

Pluss Advanced Technologies, Gurugram, Haryana, based company addressed this issue through the design and development of energy storage based solution that is grid independent. The innovative solution – Aagun[®] is a 24x7 constant temperature dryer for drying of varied products, such as fish, fruits, cooked produce, and fresh horticulture harvest, grains, etc. It uses solar energy as a renewable source for producing heat during the day and storing the excess heat in the PCM.

3. Innovation –

The storage of energy in Aagun[®] dryer is achieved through the use of advanced phase change materials (PCM), in which Pluss is a pioneer in India. The heat is stored in the form of thermal energy storage (TES) helps to continue the drying operation during night hours and maintains an ideal temperature range of 40 to 55 deg C throughout out 24 hours. This constant temperature is achieved without any electricity or fuel consumption.

4. Challenges –

Awareness regarding the new and innovative technology of phase change materials for drying of vegetables, fruits, fish, grains, etc.

5. Lessons Learned –

Due to the unavailability of the good transport network and lack of electricity in remote locations across the state, the wastage of perishables is more and subsequently the loss of income to the farmer. Aagun[®] is

enabling farmers to dry pineapple, ginger, tomato, banana, and fish amongst other produce. The benefits include:

- Improved quality of dried produce due to constant temperature drying;
- Shortened duration of drying from 6-7 days in the open sun drying to a few hours;
- Better hygiene, due to the covered drying process;
- Higher market value for dried products;
- Reduced wastage of produce;
- Better bargaining power and prevention of distress selling for the farmers;
- Entrepreneurship opportunities at rural level through value addition to fresh produce;
- Grid-independent, renewable source of energy for food processing.

Mr. Andrew, Manager at the Balmoram Training Centre, opined that the farmers are getting over 5 times the price of fresh pineapples for sale of dried pineapples (a single dried pineapple is fetching the farmer Rs. 50 as against Rs. 10 for the fresh one).

Aagun[®] from PLUSS is helping India achieve sustainable development goals (SDGs) including SDG 2 – Zero Hunger, SDG 7 – Affordable and Clean Energy and SDG 11 – Climate Action. If adopted on a large scale, such technologies will help minimize food wastage, double farmers incomes and generate employment.

6. Photographs –



Fig 1: Aagun[®] 24x7 constant temperature dryer installed at Bolmoram, Meghalaya



Fig 2: Community training on Aagun[®] – an innovative drying technology



Fig 3: Pineapple and tomato drying in Aagun[®] dryer