



Momentum to Silo Storage of Food Grains

Storage of food grains in silos has gained momentum in India and it can help the country to overcome huge losses from poor storage facilities.

- Currently foodgrains in India are stored in archaic warehouses without any use of technology.
- According to **United Nations' Food and Agriculture Organisation**, produce worth \$14 billion is damaged annually in India due to poor storage, when about 200 million Indians go hungry every day.
- In 2010 India was the second largest horticultural producer in the world but about 30 percent of the fruit and vegetables were wasted.

Silo Storage

- Silo structures follow a scientific method of storing grains where stored grain is kept dry and aired so as to prevent fungal and insect attacks.
- There are two types of silos: one is silos with rail connectivity and the second is standalone silos without rail connectivity.
- If land is taken into account, silos are cheaper than building conventional warehouses.
- When the North American mid-west came under the plough during the 19th and 20th centuries, the first thing that was done was to build large grain silos and a railway system to export the grain and now the U.S. has a permanent storage capacity nearly equivalent to its annual grain production.
- In India there are only four silos-one each in Kolkata, Chennai, Mumbai and Hapur-Ghaziabad which is largely insufficient to cater the need of grain storage in proportion to massive food production.

Advantages of Silo Storage

Bulk storage in silos has advantages over bag storage, as follows:

- low running costs;
- low labour requirements;
- rapid handling;
- low through spillage and rodents;
- efficient and effective fumigation operation;
- less land area requirement;
- complete control of aeration;
- possible to store the grain for longer periods;
- possible to mechanise all operations; and
- possible to store moist grain for short periods.

Current Storage Practice and Concerns Associated

- Grain in India is stored using the cover and plinth method (CAP).
- In this method stacks of bagged grain are kept outdoor, covered with a waterproof material which is very cheap and easy to make.
- During the rainy season this method of storage becomes risky as with the humidity in the air and

the warmth of the summer there is rampant fungal attack which makes the grain mouldy.

- India stores about 65 million tons of foodgrain, most of which is stored in conventional open or covered godowns prone to damage and the vagaries of weather.
- According to a **World Health Organisation** paper, **mycotoxins** found in mouldy grain/foods, are associated with human disease and produce aflatoxins (cancer-causing) and other toxins.
- The mycotoxins which we seek to prevent by keeping food dry in our homes are already present from the time the flour was stored in the form of grain.
- In countries like US, grain is stored in silos which is the best practice available to store grains in bulk.

Way Forward

- Silos are the ideal mode of storage, particularly for a nation such as India which depends on buffer stock for its food security. The concept also benefits all the stakeholders, be it farmers, government or procuring agencies.
- A step for silo storage infrastructure should be taken up starting from states like Punjab and Haryana which are the bread baskets of India from where nearly two-thirds of the foodgrain requirement is sourced.
- Given the monsoon weather conditions which leads to mouldy grain, it is high time for India to switch to silo structure for storing produce to ensure food security as well as good health of the people.

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