



Photo: WFP/Arete Fredrik Lerneryd

Grain Storage Equipment - Mini Steel Silo

Background

Smallholder grain storage constitutes a critical component of grain preservation in numerous developing countries and the preservation of a farmer's grain storage constitutes a critical contingency for national grain reserves. In times of natural disasters and additional crises, farmers' grain storage can help ease the burden of emergency food provision in the country, foster social harmony and stability and directly impact the overall welfare and security of the nation. To reduce losses during grain storage, storage equipment for smallholders is required.

Mini steel silo for smallholders

Several studies have shown that the average grain losses among farmers are significant. In China's case, it was around 8 percent during the storage period about 20 years ago. Of these losses, rodent damage accounted for about 49 percent, mold damage was around

30 percent and insect damage accounted for about 21 percent. To reduce the losses of grain during storage, mini steel silos have been fabricated in China by a research institute for smallholder farmers. It has been used in China since 2004. So far, over 9.5 million sets of new grain storage equipment for smallholder farmers have been used in 26 provinces (regions, cities) across the country.



Photo: WFP/Leslie Kouadio

Introduction

Size and capacity

- Volume 1 ~ 1.5 m³ to store about 600kg ~ 1 ton grains
- 3 layers, height of about 1.35 meters

Features

- Moisture-proof, rodent control and durable
- Suitable for storage of paddy/other grain crops within safe water content
- Local manufactory according to local condition and available materials



Photo Courtesy of Sinograin Chengdu

Model



Photo Courtesy of Sinograin Chengdu

Precautions

- I. It's inadvisable to exceed three rings in height, with an optimal height of around 1.36 meters.
- II. The silo floor should be equipped with damp-proof mats. It's recommended to use rigid polystyrene foam boards as damp-proof mats. These mats not only guard against moisture but also prolong the silo's lifespan.
- III. When loading grain, it shall avoid pressing heavy objects containing grain on the wall of the silo, so as not to deform the silo wall.

China-Africa Rice Value Chain

In Africa, due to the lack of related technology and equipment, at least 20% of the rice yield is lost after harvesting every year. WFP China COE and CERFAM work with the Bill and Melinda Gates Foundation for providing mini steel silos to smallholder farmers in Côte d'Ivoire and Guinea. In order to guarantee a stable supply of the mini steel silos and sustainability, we will also support the manufacturing equipment for mini steel silos. Through the South-South Cooperation, experts will support installation and provide comprehensive training to beneficiaries, which increases their grain self-sufficiency and improves their income to achieve Zero Hunger.

Contact Us

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