

PICS: Hermetic Bags for Safe Storage of grain

Low cost storage technologies for grain

Hermetic bags are like super-sealed containers that stop air and moisture from reaching the grains inside. This way, farmers can store their grains for up to two years without them getting bad. This is good for farmers because it means they always have enough food and can sell their grains for better prices.



Alliance



The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)
Laurie Kitch



This technology is **TAAT1 validated**.



Scaling readiness: idea maturity 9/9; level of use 9/9

Gender assessment



Climate impact



Problem

- **Post-harvest losses:** Farmers in Sub-Saharan Africa lose over 25% of beans due to inadequate storage methods.
- **Pest infestations:** Weevils, moths, and mites damage stored beans, forcing farmers to sell at low prices immediately after harvest to minimize losses.
- **Fungal contamination:** Traditional storage can lead to fungal growth, such as aflatoxin, contaminating beans and reducing their quality.
- **Food security issues:** Ineffective storage hinders farmers' ability to keep enough beans for consumption between harvests, threatening food security and livelihoods.

Solution

- **Airtight sealing:** The multi-layer design blocks air and moisture, preventing pest infestations without chemicals.
- **Moisture control:** Hermetic bags maintain stable moisture levels, inhibiting fungal growth like aflatoxin.
- **Long-term preservation:** They preserve beans for up to two years, maintaining quality and cooking time.
- **High durability:** Made from strong, reusable materials, hermetic bags ensure reliable grain storage.

Technology from

ProPAS

Commodities

Common bean, Rice, Wheat, Maize, Sorghum/Millet, Soybean

Sustainable Development Goals



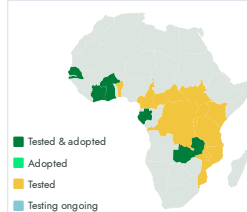
Categories

Prevention & storage, Equipment, Post-harvest handling

Best used with

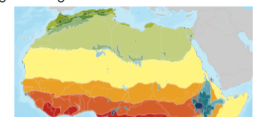
- [Mechanized Threshing Operations >](#)

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Key points to design your project

To integrate PICS bags into your project:

- **Cost Analysis:** Bags cost \$1 to \$1.5 each (50kg or 100kg capacity). Estimate the number needed.
- **Supply Chain:** Identify suppliers, including delivery costs and any import duties.
- **Training:** Budget for training sessions and ongoing support.
- **Communication:** Create promotional materials (flyers, videos, etc.).
- **Grain Preparation:** Ensure grains are properly dried before storage, using moisture measurement devices if necessary.

These steps will help enhance food security and reduce post-harvest losses.

Cost: \$\$\$ **2—3 USD**

Bag cost for users

ROI: \$\$\$ **90 %**

Reduction of loss

50 or 100 Kg

Bag capacity

2 year

Life span



Trademark



PICS

<https://taat.africa/oaw>

Last updated on 1 October 2024, printed on 15 May 2025

Enquiries e-catalogs@taat.africa