



**LOGICOOOL**

Solar powered innovative  
**cooling chamber**  
**smart. easy. fresh.**

Innovative solar-powered  
**Cooling chamber**



**LOGICCOOL**

# THE FACTS

Every single year, an approximated 1.3 billion tons of food produced for human consumption is lost or wasted worldwide.

01



02

Africa and the sub-Saharan countries record a post-harvest loss of approximately \$ 4 billion. This sum could feed 48 million people. Comparable losses of resources are incurred within other developing and emerging countries as well.

When stored in traditional straw and wood barns, the harvest is particularly susceptible to rain and infestation by insects and rodents.

03



## POTENTIAL



04

Solar Energy is a free and indefinitely available natural resource most especially for the countries along the equator.

By gaining access to improved storage and thus higher quality crops, farmers can achieve more profitable market prices.

05



06

Reducing post-harvest losses would increase the amount of food available worldwide without the need for additional resources or additional environmental impact.

# THE SOLUTION

- SOLAR POWERED
- SELF-SUFFICIENT
- SIMPLE IN CONSTRUCTION
- SPACE-SAVING
- QUICKLY AVAILABLE
- REASONABLE
- EASY TO MAINTAIN





# THE MODULAR SYSTEM

**The equipment is separated into its individual parts and shipped to its final location**

The cooling cell is then assembled on site with the help of an enclosed easy-to-understand instruction guide. Even a trained layman will be able to do the assembling and the electrical connection of the cooling cell.



Bottom plate must be installed absolutely even



Mounting of the sandwich wall panels is very easy



The whole cooling chamber can be assembled within a few hours



The innovative locking system



By inserting the plug, the locking holes are sealed



The LOGICOOOL cooling chamber is ready for use



Installing the battery rack; on the left: chilling unit



The easy-to-use control panel is installed inside the cooling chamber



8 batteries make sure that the chilling unit will work 24/7



The solar panel rack can be placed on the roof or on the ground



## LOGICOOL : A SIGNIFICANT ENHANCEMENT OF REVENUE FOR COOPERATIVES

LOGICOOL eradicates the obstacles of price manipulation that is imposed on the small scale farmers by the brokers or the other wholesale buyers. By forming cooperatives, farmers can regulate the purchasing and selling of their crops in order to improve their agricultural profitability. Through these cooperatives, the farmers have a potential for making better negotiations for their products in unison and hence making better sales. In addition professionally managed marketing of the farm produce through the cooperatives will curb the exploitation which could come about when the small scale farmers struggle with the marketing of their products individually.

The price of the farm produce is determined by its quality which on the hand is depended on how these produce is stored after harvesting. The vulnerability of products like fruits and vegetables, not forgetting also milk and meat is greatly improved when stored in cool and dry places where contamination from pests of all kinds or excessive heat is excluded.

The solar-powered LOGICOOL cooling chamber as the name suggests provides the perfect solution for farmers most especially in Africa. The cooling unit has a volume capacity to serve as storage facility for cooperatives. Vulnerable farm produce can now be stored longer after harvesting and batch-marketed by the cooperative itself hence maximizing the returns for all the members. The cost of the solar-powered LOGICOOL cooling unit is so considerable that the farmers can be able amortize within a very short period approximately 18 months.

## LOGICOOL : SOCIAL ENTREPRENEURSHIP AND A SUSTAINABLE BUSINESS MODEL - ROI IN LESS THAN 18 MONTHS

LOGICOOL also offers a viable business model for investors who actively support sustainable development in Africa, and want earn money with a clear conscience!

The LOGICOOL cooling chamber has a volume capacity that provides enough room and space to store a considerably large amount of farm produce. With this kind of a cooling facility as a business model, any investor be it a farmer or not could buy the LOGICOOL cooling chamber and rent the cooling space to the other small scale farmers. In a nut shell therefore, the key to early amortization of the cold store lies in the rental of crates and per day. Some farmers might not have to produce capacity to fill up the whole chamber and therefor just require a small fraction of the space for some limited period of time. These farmers or might be local market sellers are charged for the space occupied in terms of the number of crates they have stored in the LOGICOOL cooling chamber. An example of a fee charge in this case is for instance, the person in question can be offered the use of the cold store for a fee of 50 cents or 1 euro per day and crate. The LOGICOOL S model can comfortably accommodate 130 boxes measuring 50 x 50 x 50 cm, probably a few more.



**LOGICOOOL**



# CASE STUDY: FRENCH BEANS FARMING IN KENYA



Africa is a wealthy continent in many aspects - not only because of its mineral resources, but also because of its favorable climate. Unfortunately, farming continues to be done manually with a few exemptions of a few farmers who can afford to invest in the resources need for professional farming. Lately though, there is a shift of attitude about agriculture, and more young enlightened youths have started to embrace it as a source of their economical sustainability.

Njeri Mugembe, 35 years old and mother of 3 children, is a good example of this. The former bank employee quit her secure job after more than 10 years and has started a new life as a farmer. "Having worked in a bank for so many years, I felt poor even though I had a salary," she says. "My salary was very punctual but the money I received could not cater for all my needs." From her experience as a banker she knew as a matter of fact that there were young farmers who were better off financially than her. So she decided to try her hand at farming and leased 200 m<sup>2</sup> of fertile farmland where she planted French beans.

After 45 days the beans were ready for harvest - but no prospective buyer in sight. "I was very desperate. I could not comprehend how this investment would go to waste. Luckily, my cousin knew someone who worked with a company that was exporting French beans so she got me connected and I could sell my produce though at a much lower price than originally planned: I made only around one fifth of the current market price. I would have however made better returns if I had the possibility to store the produce and source a better market or just sell the French beans at our local market". Without cooling, however, the harvested beans dry up within a few hours, after which they can only be thrown away.

## "COOLING AS A KEY TO LONG-TERM SUCCESSFUL AGRICULTURE IN AFRICA"

Due to the heat in Africa, millions of tonnes of agricultural produce perish due to lack of cooling: fruits and vegetables, but also meat, fish and dairy products. Meat for example must be cooked as soon as possible after slaughter to prevent it from decaying. Meat ripening - which significantly influences the meat quality - does not take place even the production of high-quality dairy products is unthinkable without refrigeration. The Solar-powered cooling unit provides a simple yet efficient solution to this problem. Due to the solar power, it requires no extra electricity connection and can be installed almost anywhere. Thanks to this cooling facility, higher-quality products can be produced and marketed over a longer period of time, which increases the yield in the long term and sustainably improves the situation of the farmers.







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