

The Zero Energy Cool Storage Implemented by the Farmer Network in Laos

Recognized as best practice by farmers organizations at the [regional MTCP2 Knowledge Management Fair 2018](#), the [Zero Energy Cool Storage](#) is being implemented in Laos by the Lao Farmer Network.

The system is designed based on the experiences in organic farming made by the [Thongmang Organic Vegetable Group](#) in Vangvieng, Vientiane province of Laos and promoted by the [Lao Farmer Network](#).



Using the natural low temperature of the soil, this low-cost storage system allows to keep away the agricultural products from wind, sun light, and heat for up to 40 days.

The store is 4 x 4 x 4 meters and 2 meters under the soil surface. The store is naturally kept cool by the soil temperature and is also connected to the cool air source coming in from spring well or natural creeks. With this mechanism cold air enters the warehouse and the warmer air goes out by itself without using any electronic device. The temperature of the storage system is about 4 - 7 degrees Celsius lower than the outside.



A building of this size can keep 2-3 tons of vegetables. The construction cost in Laos is around USD 2,000, being affordable for cooperatives and farmers associations. Farmers can even provide manual labour for the construction of the storage system. The design can be modified in size to meet the different needs of farmer groups, through specific technical and research works.



From the point of view of its management, no electricity is needed to operate the storage and other operating costs are very low. To ensure its functionality, the construction only needs to be built near natural cool air source such as that coming from a well or a creek. The farmers using the system must ensure that the products are pest-free, in order not to risk damaging all the goods stored.



In 2017 the Lao Farmer Network piloted the experimentation of the *Zero Energy Cool Storage* system in three locations of the Country: with the Organic vegetable group in Vientiane capital, with the Bitter bamboo group in Oudomxay province, and with the vegetable cooperative in Xiengkhouang province.

The phase of construction and experimental management of this new storage system has proved its effectiveness and the

Lao Farmer Network promotes this innovative and sustainable solution to meet the needs of small agricultural producers across the country and at regional level. As stressed on its website...one of the main issues of the commercialization of agriculture is the lack of storage capacity for the farmers' organizations, especially those that produce fresh vegetables. Without effective storage system, farmers cannot consolidate their produce and manage demand-supply opportunities properly. That is why oftentimes, there is too much supply during peak season and there is not enough supply to the market in other period of the year. Some development projects invested in modern cool storage system for the farmers. However, they completely failed because the system is too big and farmers do not have enough produce to keep in the storage. Moreover, the operating cost of the system is very high due to the cost of electricity and its maintenance.

The Zero Energy Cool Storage allows the farmers groups to keep their products when the prices go down and sell them at more advantageous prices. The Network recommends farmers organizations to adapt the investment required by the construction of this system in a complex marketing plan that includes the purchase of the products from the farmers, the stock and the sale in different markets, in order to ensure a good use of the facility.

The Lao Farmer Network is one of the members of the [Asian Farmers' Association for Sustainable Rural Development \(AFA\)](#) and this regional Association in turn it is spreading the Zero Energy Cool Storage among its members, as a sustainable solution for the needs of small farmers and cooperatives.

Established in 2002, the Asian Farmers' Association for Sustainable Rural Development is an Asian alliance of National Farmers Organizations composed of small-scale family farmers, fishers, indigenous peoples, forest users, herders and pastoralists. The Asia region is home to family farmers working on an average farm size of two hectares or less, managing to produce 60% of the food required in local markets.

One of the pillars of the Asian Farmers Association's work is the *Knowledge Management*, facilitating farmer-to-farmer exchanges workshops and learners' circles, awarding farmer innovators, producing learning materials. In the [Stories section on the AFA Forum website](#) innovative solutions adopted in each country are presented to stimulate other member organizations in their use.

To know more

[Zero Energy Cool Storage - AFA sitio web](#)

[MTCP2 Fair 2018](#)

[Thongmang organic vegetable group](#)

[Cool Storage in AFA Twitter](#)



[LAO Farmers sitio web](#)

[LAO Farmers Network in Facebook](#)

[Asian Farmers' Association for Sustainable Rural Development \(AFA\)](#)

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[Asia Pacific Farmers Forum website](#)

[FAO Publication – How access to energy can influence food losses](#)

