Storage project

by Eloise Hillier- Richardson

How Blumberg Grain is Reducing Post-Harvest Loss and Improving Food Security Globally

Grain projects across the world are bringing meaningful benefits for governments and farmers

As the world's population continues to rise, the significance of food security -- the ability to provide reliable access to affordable and nutritious food -- is more important than ever. In fact, the world's population is expected to reach 9.1 billion by 2050, and global food production will need to nearly double by 2050 to keep up.

The significance of strong food security innovations have substantial impacts on countries, particularly in the developing world. These innovations have the opportunity to reduce hunger, enhance food security, and improve national, regional and global security. However, many countries across the world do not have the resources to develop effective food security systems in a large-scale environment that can benefit their populations as a whole. Blumberg Grain, a leading global food security company, is working around the world to help these countries improve food security, reduce post-harvest loss and increase the quality and marketable output of harvests by providing harvest protection systems and technology.

Blumberg Grain provides the most comprehensive, state-of-the-art storage units, technology and management systems for post-harvest food safety and security. Whereas in some countries, post-harvest loss can reach 40 to 50 percent due to depletion by insects, rodents, pilferage or inclement weather, Blumberg Grain's fully integrated crop and food security systems can reduce post-harvest losses of grain, produce, and other perishables to five percent or less. The company modernises agricultural value chains, increases the quality and marketable output of harvests, enables efficient market timing, and significantly boost exports of agriculture products.

A Blumberg Grain warehouse system may look like an ordinary structure, but it's far from it. The ideal environment for both short and long-term food storage, the Blumberg Grain Warehouse can be customised to store bulk or bagged grain, as well as produce and other perishables. The building is scalable and modular, with additions easily incorporated as needs grow.

Blumberg Grain is able to provide these benefits by offering fully integrated systems built around the best pre-engineered steel storage units, for storage of both dry and perishable goods. Mass-produced in the United States, these lightweight, scalable warehouses use one-third the steel of conventional warehouses, making them the most efficient storage facilities on the market. By design, Blumberg Grain warehouses can be partitioned for segregation of multiple agricultural products, and each area can include its own sophisticated temperature and humidity adjustors and monitoring controls.

Assembly of the grain or refrigerated storage warehouse does not require a specialised skilled labor force since they rely on bolt-in-place rather than welded construction, allowing for systems to be erected in just a few days.

The facilities can be powered by the local power grid or from independent gas, solar or wind power generators the company provides. What's more, Blumberg Grain structures are designed to work in rural areas, close to the farmers and their crops, so that harvested product is stored as quickly as possible to reduce waste.

The Shouna Development Project - Egypt

Blumberg Grain has been working closely with the Egyptian Government to develop state-of-the-art grain facilities across the country as part of the Shouna Development Project. This project is replacing open-air wheat storage pits with modern storage systems to provide more reliable harvests and storage. This project will revolutionise food security in the region. As part of the first phase of the Shouna Development Project, Blumberg constructed 93 Shounas which were completed by April 27, in

time for the spring harvest.

The project, a collaboration between the Egyptian Ministry of Supply, the Egyptian Holding Company for Silos and Storage, the Army Engineering Authority, and Blumberg Grain, will support the government in recovering crops lost to post harvest losses, saving Egypt up to an estimated US$200 million annually and lessen the amount of currency that goes outside of Egypt to import wheat. The post-harvest loss reduction will help to reduce costs, feed more people, save the government millions, reduce energy use, minimise unrest and help the environment.

David Blumberg, Chief Executive Officer of Blumberg Grain – Middle East & Africa, remarked, "The Shouna Development Project is bringing the highest levels of food security technology to Egypt and will make it the food security hub of the Middle East and Africa."

The entire Shouna network will be managed by the Blumberg Grain Command and Control Centre, which is a comprehensive management system that monitors grain and other harvested products as they are deposited by farmers, processed, stored and eventually distributed to retailers and customers.

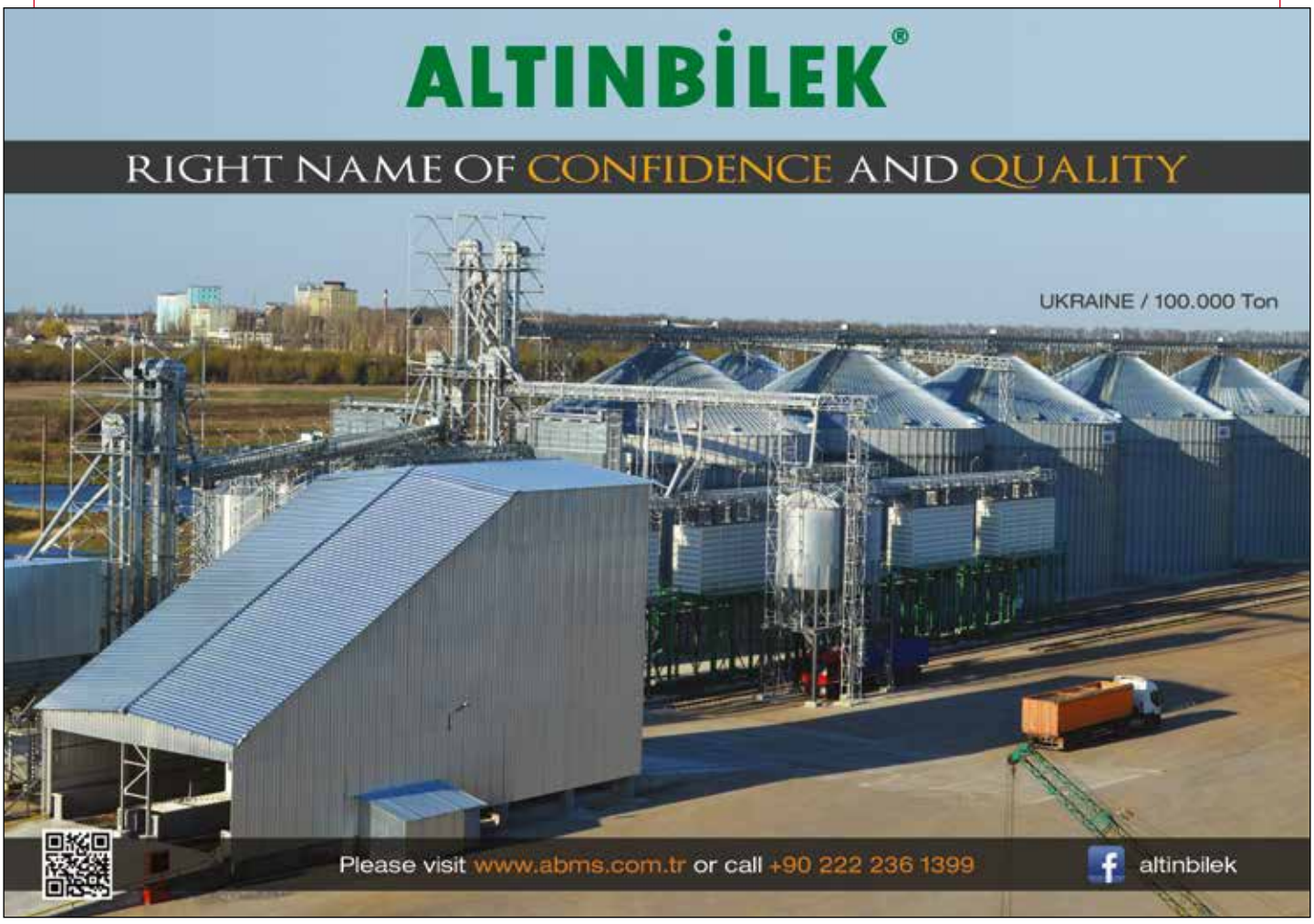
The centre uses satellite feeds and sophisticated sensor technology to monitor grain distribution networks in real time. It also monitors weather patterns – if it indicates an oncoming sand storm, for example, operators will be able to enact emergency protocols to protect the grain inside the system. All of this is monitored centrally and implemented remotely.

Dr. Khaled Hanafy, Minister of Supply and Internal Trade said in a press release when the Command Center opened in December 2015, "The Blumberg Grain Command and Control Centre is the heart of the Shouna Development Project. Its integrated systems will be able to follow every bag of grain as soon as it enters the distribution network. We have never been able to track food supplies like this before. We are looking forward to continuing our partnership with Blumberg Grain and seeing further revitalisation of Shouna grain network in the near future."

The economic impacts for Egyptian farmers is one of the many beneficial outputs of this project. By having a reliable distribution of product that mitigates theft and keeps product from deteriorating, it will allow farmers to receive the best price for their crops and see greater profits.

"Through the efforts to increase food security with Blumberg Grain, we have the possibility to empower farmers to shift from subsistence farming to profitable suppliers; provide access to commodities markets; and increase overall food access while lowering costs by minimising waste," Philip F. Blumberg, Chairman of Blumberg Partners, the parent company of Blumberg Grain, said.

The second phase of the project, which has already received support from the Egyptian government, would see the completion



of 300 additional Blumberg Grain Aggregation and Processing Centers across Egypt. The impact of the second phase of the grain storage system amounts to an annual savings of US$354 million and combined the first and second phase will generate a savings of US$551 million per year, according to KPMG.

Philip F. Blumberg, Chairman of Blumberg Partners noted, "Upon commencement of the second phase, Blumberg Grain is prepared to begin construction of a major Middle East and North Africa Manufacturing Plant and Export Hub in Egypt. This Manufacturing Plant investment would be the beginning of a minimum US$250 million investment program for Blumberg Partners in Egypt."

Once complete Blumberg Grain's MENA Manufacturing Plant will be the largest of its type in the world, employing 1,000 Egyptians at full production. With an emphasis on local content and sourcing through Egyptian SMEs, the Manufacturing Plant will have a US $1 Billion impact on the Egyptian economy in the first year, and US $8 Billion over 5 years, according to KPMG.

Producing Egyptian-made equipment for grain and cold storage and processing centers, the Manufacturing Plant will make Egypt the leading provider of food security throughout the region.

Cold Chain

The continuing and future success of the Shouna Development Project leads to greater possibilities beyond grains in the form of Cold Chain. With post-harvest loss rates over 50 percent in perishable goods in some countries, producers are sacrificing product and profits. Blumberg Grain's cold storage technology is an innovative solution that improves value chains through the implementation of robust food security systems.

Blumberg Grain uses proprietary controlled atmosphere technology to evacuate the natural air in a cold storage chamber and replace it with nitrogen gas, filtered and pumped in directly from the outside environment using a nitrogen generator. By essentially stopping fruits or vegetables from "breathing," the product's aging is suspended. This preserves the freshness, taste and texture, months longer than traditional cold storage methods, and it does so without the use of pesticides or preservatives. Blumberg Grain also leverages cold cell technology, which is ideal for product compartmentalisation.

Compartmentalisation is critical for storing multiple crops in one facility, as variables such as temperature, humidity and atmosphere can be controlled individually. Optimal storage conditions vary widely depending on each crop's needs. Berries, for instance, require a different storage climate than would vegetables like cucumbers. Developing a more cost-effective and easily deployable cold storage process will change the way the world stores and cares for its harvests.

Why It Matters

Now, more than ever, technologies exist to reduce hunger and conflict through food security innovations. Improving food security can be foundational to chart and improve a nation's growth trajectory. Food logistics, storage and security systems, when properly implemented, can reduce post-harvest loss to five to ten percent, dramatically increasing agricultural output by 30, 40, or even 50 percent.

However, these changes cannot occur without intervention, and the technology exists to make a meaningful international impact and improve food security. This technology mitigates against: post-harvest losses, mould, rot and pest consumption, weather damage, Illness, and previously undetectable breaches.

The impacts on countries that greater food security and decreased post-harvest loss provide are considerable. Food security and national security are closely intertwined. Food insecurity creates political instability and directly contributes to the spread of internal instability, which is evident through the mass economic and political problems facing developing countries with food security issues. While in direct contrast, food security contributes to the prosperity needed to reduce conflict. Food security facilities, like the ones that Blumberg is developing in Egypt and other parts of the world, will be a crucial part of providing stability and greater opportunity for economic growth.

There are scalable solutions to world hunger challenges that increases access while lowering costs.

"Reducing hunger, improving food security and by association improving national, regional and global security, can be done without being cost prohibitive, in addition to many short and long term benefits," Philip Blumberg said. "On a larger scale, these improvements will affect these nations as a whole by decreasing political unrest, conflict and terrorism, stabilising the price of food globally, minimising impact of food production towards climate change and enabling a nation's focus on non-agricultural priorities."