

# Enhancing the African rice market

Developing a system that consistently produces high-quality, polished & packed white rice

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**R**ice is Africa's second most consumed grain (after maize) and is growing in popularity faster than any other staple food. Driven to meet the needs of its fast-growing population, large scale rice production in Africa has proliferated and become a significant source of revenue for many economies. Investment continues to increase as more stakeholders seek to meet demand and find profits in this booming market.

Satake Corporation manufactures and supplies rice processing machinery to over 150 countries worldwide, including ones in Africa. The focus of this article is on how Satake's products benefit stakeholders in the African rice market.

## A viable roadmap to promoting sustainable development

Over the past decade, rice cultivation and consumption in Africa has increased substantially. Despite the recent increases, local rice production has yet to meet Africa's colossal demand for rice.

An increase in investment could benefit Africans broadly and in many ways. Besides turning profits, investors can contribute to food security while creating jobs. Locally produced rice boosts local economies, reduces basic food costs, and benefits the environment by reducing the distance from farm to table. Further investment in the African rice market therefore offers a viable roadmap to promoting sustainable development on the continent.

Since the 1970s, with support from Japan's Official Development Assistance (ODA), Satake has been involved in developing the African rice market. Satake has also worked with the Coalition for African Rice Development (CARD) established by JICA in 2008 and has collaborated with the Alliance for a Green Revolution in Africa (AGRA).

These organisations are supporting grassroots efforts to enhance rice production with the goal of doubling rice production in sub-Saharan Africa by 2030. Satake will continue to contribute to food security by helping Africa meet its goal for rice self-sufficiency. Besides working with partners to increase harvest

yield, the company supplies equipment to processors to improve processing yield, thereby supporting a two-pronged approach to increasing production.

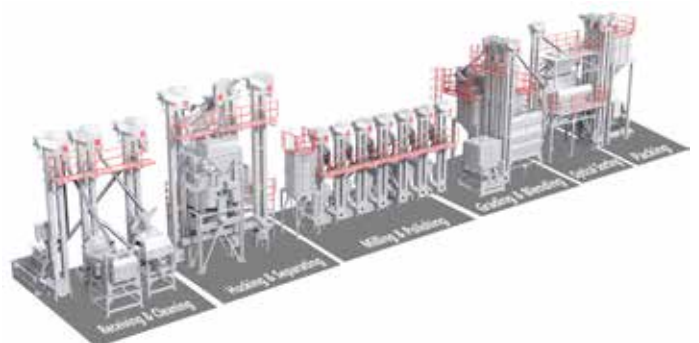
Rice processing equipment consists of a series of specialised machines which perform different unit processes. These processes include removal of foreign matter from paddy rice, hulling, milling, removal of broken rice, and packaging.

As processing progresses, losses inevitably occur. Harvests can include stones, insect fragments, and other debris that needs to be removed. Additionally, rice kernels are easily broken during the husking and milling processes if the machinery is not suitable, reducing quality, storability, and exportability. This problem may be further exacerbated for long grain varieties like Basmati rice, or if the post-harvest quality is poor or unstable like in areas where sowing of upland rice is common and irrigation is inadequate.

For any given input of dried paddy rice to the milling process, only about 80 percent for brown rice and 72 percent for white rice can be expected to be retrieved. After all losses are considered, the final amount of white rice that is suitable for the market may be half that of the original mass, representing a significant loss to the producers and their wallets.

## A sophisticated combination of machines

Another important consideration in rice processing is that not all of the paddy rice will have the same quality and strength. Each



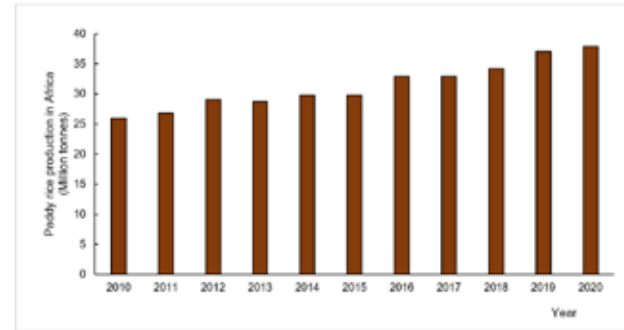
step of the process depends on the steps before. For example, if 100 percent of the hulling is done in a single process, some of the grain which was weaker than the rest will be broken. This broken grain is then supplied as the raw material for the polishing process, but it is already damaged and so will ultimately be wasted.

Therefore, it is important that the overall rice milling process involves a series of machines which carefully and gradually remove the thin and delicate layers of hull, bran, and germ from the rice kernels without breaking them. Producing a high yield of good head rice often requires a sophisticated combination of machines which can differentially hull and mill grain to account for their bulk differences. In many rural areas of Africa, the construction of large-scale rice mills which can accomplish these goals is often a challenge due to a lack of infrastructure like electricity, potable water, and transportation. Additionally, it can also be challenging to harvest enough paddy rice to make it economical to invest in larger facilities.

As a result, rice milling facilities in these areas commonly use single-pass machines with small capacities that use primitive milling techniques. These machines operate with a capacity of about one-tonne-per-hour and process paddy rice directly into white rice by combining the hulling and milling steps. This often results in a high percentage of broken grains present in the final product. Using large-scale machines produces higher quality rice with higher yields. By incorporating multi-pass milling systems, they can mitigate the problem of broken grains and reduce waste.

Additionally, large-scale machines are more economical – the initial investment may be high, but costs can be quickly recovered due to improved yield and quality.





### **High-quality, polished & packed**

Because of the ever-increasing pressure for producers to deliver higher quantities of higher quality rice, Satake has developed an economical multi-pass rice milling system - REACH.

With models capable of processing three or seven tonnes-per-hour, this new system is an easy-to-use modular rice processing plant that gradually processes rice paddy to produce high-quality, polished and packed white rice. It is the perfect system for the African rice market to respond to increasing consumer demands.

Described as a single-package option to produce high-quality white rice at high yield, this new system includes all machines and accessories as well as the steel structure needed to complete installation and begin full operation.

Designed for easy installation and use, a REACH plant offers total optimisation of rice processing. For a business considering starting out with rice processing or enhancing their current system, making choosing this option a smart and economical choice.

Achieving rice self-sufficiency in Africa requires a team effort between producers and processors. Producers must increase agricultural production while processors adopt better technologies and increase capacity.

Satake's rice milling technology leads the industry by setting the standard for production quality. Working alongside African stakeholders, we will continue to offer the highest quality systems.