



CATALYTIC INNOVATIONS IN AFRICAN AGRICULTURE CENTENNIAL SERIES

# RICE NUCLEUS

OLAM ■ NIGERIA

The Catalytic Innovations in African Agriculture Centennial Series was developed as part of The Rockefeller Foundation's Centennial publications. The Rockefeller Foundation, as an institution with a long history in agricultural innovation, commissioned this series to highlight promising developments in African agriculture, agricultural markets, and value chains on the continent. The projects and programs featured were selected from a review of nearly 150 such initiatives based on criteria that included a focus on smallholder farmers.

**THE ISSUE** Nigeria is currently the second-largest importer of rice in the world, and the largest net importer in Africa. Nigeria grows only about 65 percent of its rice consumption needs. The Nigerian government's new Transformation Agenda calls for efforts to replace rice and other imported goods with domestic production. The federal Ministry of Agriculture and Rural Development's vision is to "achieve a hunger-free Nigeria, through an agricultural sector that drives income growth, accelerates the achievement of food and nutritional security, generates employment, and transforms Nigeria into a leading player in global food markets to grow wealth for millions of farmers."

**THE INNOVATIVE RESPONSE** In line with this vision, Olam Nigeria Limited saw the promise of the rice market and developed an innovative approach to rice production. Its nucleus model combines a commercial farm with a program that works with nearby farmers, called outgrowers, allowing Olam greater control over its product while still leaving room to foster and train local small-scale farmers in rice production.



The Catalytic Innovations in African Agriculture Centennial Series recognizes innovations across the continent and includes projects not funded by The Rockefeller Foundation.

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## PROJECT BACKGROUND

### THE STAKEHOLDERS

Olam Nigeria Limited (Olam) was established in 1989 and is the founding country branch for the global Olam International Limited. A supplier of raw and processed agricultural commodities, Olam has both an export business (cocoa, cashew, sesame, and cotton) as well as a domestic business (importing and selling rice, milling flour, and producing packaged foods).

Today, Olam International supplies different products across 16 platforms in 65 countries around the world and is involved in varying degrees across the total product supply chain (e.g., procurement, processing, transport, warehousing). Headquartered in Singapore, Olam International primarily operates in sub-Saharan Africa and Asia. Key actors include the Kewalram Chanrai Group, which established Olam, Temasek Holdings, and other investors as well as national and international partners.

**By implementing this nucleus model, Olam's goal is to establish a regional hub of activity in a marginal area benefiting both company profits and ... local farmers.**

### OVERVIEW

Olam Nigeria initially began work in Nigeria's rice sector through a farmer cooperative system. By organizing farming cooperatives, providing training, and partnering with the First Bank of Nigeria to provide cooperatives with seed capital for inputs, Olam hoped to develop a system that would increase rice production. From its past experiences, Olam learned that it was critical to have greater control over the quality and marketability of its product. Thus, it shifted toward an innovative nucleus approach centered on a commercial farm. The commercial farm provides a means to

guarantee the quality of inputs and techniques used, ensuring productivity while simultaneously providing a model and learning tool for outgrowers.

Olam's commercial farm was established in 2010, and work began in the fields in March 2012. A rice mill is still being constructed, and, once the farm becomes fully operational, the outgrowers program will begin.

### GOALS

#### Helping to meet Nigeria's rice needs

With its nucleus model, Olam aims to increase Nigeria's domestic rice production through yields from the commercial farm together with rice produced through the farm's outgrowers program. In the broader context of Nigeria's Transformation Agenda, this goal will help to reduce Nigeria's reliance on agricultural imports and will help fuel the growth of the country's economy.

#### Piloting a nucleus model

Olam's nucleus model is based on a commercial farm at its core that helps the company to ensure a quality product while still providing a center from which an outgrowers model can grow and flourish. Ensuring that these two elements succeed is a unique approach for large corporations, going beyond standard corporate social responsibility practices. By implementing this nucleus model, Olam's goal is to establish a regional hub of activity in a marginal area benefiting both company profits and building the capacity and incomes of local farmers.

This approach is not only the first of its kind in Nigeria, but also represents one of the first large-scale rice farming operations in all of Africa. After demonstrating success, Olam hopes its approach can become a model for similar farming operations in Nigeria as well as in other African nations.

## WHAT IS INNOVATIVE



## ABOUT THIS PROJECT?

### RETAINING QUALITY CONTROL WHILE FOSTERING AN OUTGROWERS MODEL

Based on experience with a farmer cooperative financing model, Olam designed an approach that allowed it greater control over quality inputs while still allowing it to support an outgrowers model.

The Olam farm benefits from state-of-the-art machinery and techniques, including GPS leveling. It has partnered with the West African Rice Development Association to test new rice varieties, both grown in irrigated paddies and rain-fed. One is particularly promising, with yields well above the rice varieties typically used by small-scale farmers.

Farmers participating in the outgrowers program will have access to these higher-yielding rice seeds, opportunities to learn new cultivation techniques, the option to join farming cooperatives, and access to a ready market. Olam will purchase farmers' crops at prevailing market rates, to be determined by committees composed of cooperatives, Olam employees, and others.

Olam hopes not only to increase its overall rice production, but also to create a network of rice farmers—and ultimately help farmers to diversify their harvests, increase profits, and create a productive business for themselves and their families.

### CREATING REGIONAL NUCLEI

Olam's nucleus model creates the opportunity for regional hubs in marginal areas. Olam's commercial farm is in central Nigeria in rural Ondorie. Despite increased logistical costs, Olam established farming operations there and built the necessary infrastructure. Olam has constructed more than 40 kilometers of roads connecting smaller communities around the farm to larger villages that were once inaccessible. This roadwork facilitates the farm's operations, but also makes education and health care more accessible to surrounding communities. The roads also enhance farmer-to-farmer communications and help them share resources and information.

Currently, more than 600 people from local communities work on the farm, making up 90 percent of the workforce. When the farm is completely operational, women will comprise 60-70 percent of that labor force.

Anecdotally, employees describe key changes in their communities as a result of Olam's presence. They are paid well, particularly for performing highly skilled work (e.g., driving a GPS leveling tractor), resulting in greater household income. Thanks to these employment opportunities, other family members are now able to start small businesses, such as food stalls and shops. Those who had moved to Abuja or other cities in search of work are returning to work on the Olam farm. Olam has also built a school and worked with local communities to provide solar lamps and has developed plans to build wells and a hospital.

**ABOVE:** Students prepare to take exams at a school Olam built near its rice farm in Ondorie.

**COVER:** Harvesting rice at Olam's farm in Nasarawa, Nigeria. To maximize production, Olam operates combines day and night so as to minimize the time between harvesting and planting the 4,000 hectares of rice fields.



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## THE FUTURE: OPPORTUNITIES AND CHALLENGES

### OPPORTUNITIES

**FOOD SECURITY** Early signs show promise that the Olam farm will be successful in meeting its rice production goals. When the farm reaches full capacity (in the next five years), management aims to have more than 6,000 hectares of land, cultivated twice a year, yielding an average of seven metric tons per hectare. With 20,000 farmers in its outgrowers program, it is projected to be Africa's largest rice farm.

**SCALE AND REPLICATION** Olam envisions its nucleus model as a replicable one. As Regi George, Olam's farm manager, says, "It's close to 1.5 million metric tons of rice that is being brought into the country. In five years' time, if this project is replicated [in] 10 locations with a similar kind of operation, that would be able to really achieve self-sufficiency for rice in Nigeria."

**PROFIT-DRIVEN DEVELOPMENT** Key to Olam's model is the farm's profitability. Development fueled by profit ensures steady reinvestment in communities rather than reliance on finite donor funds—assuming continued profitability.

### CHALLENGES

**CAPITAL** A major challenge to this model is the sheer size of the investment needed to initiate a commercial farm of this scale in a remote area. It is difficult to envision how public sector organizations or smaller private entities could replicate this model without significant financial input.

**SUSTAINABILITY** If profits fall dramatically or should the farm fail outright, mechanisms are needed to reduce the negative impact on farmers who work at Olam's farm and those who are part of Olam's outgrowers program.

**THE RISKS OF LOCAL MONOPOLY** The model's potential risk to small-scale farmers must be taken into consideration. Those farmers who become part of the outgrowers model are, at the same time, committing to sourcing their inputs (specifically, seed) from Olam and selling all their outputs to Olam. Thus, farmers are simultaneously indebted to the supplier and the buyer and so have very little flexibility. This structure provides Olam with a great deal of control over prices of inputs, outputs, and, ultimately, over farmers' profits. Olam has indicated it will purchase outgrowers' crops at prevailing market rates, to be determined by price committees. But to what extent will farm gate prices be above what is competitive in the open market? In the hands of the wrong type of manager, the high degree of control afforded by this nucleus model could lead to abuses of power.

More investigation also needs to be done into the potential impact of this type of model on competition and on the price of rice in national and international markets. If Olam comes to have a monopoly over domestic rice production, it will also have a great deal of influence on setting the price of rice both within Nigeria and in world markets.

**FINANCING** One large gap that remains to be addressed is the issue of financing. Financing is often a significant barrier to farmers accessing critical inputs, such as seeds and fertilizers, as farmers lack sufficient funds. It is unclear how financing will be dealt with in the nucleus model. If a financing mechanism is established through Olam, the company retains control over the terms and conditions. Creating public-private partnerships that aim to provide alternative sources of financing could potentially help reduce farmers' reliance on Olam and ensure some sustainability—at least in the outgrowers model—should the commercial farm cease operations.

**GENDER PARITY** Although Olam indicates that, when the farm is completely operational, women will make up 60-70 percent of the labor force, it remains to be seen which jobs women will occupy and whether gender parity exists in access to jobs. It is critical that women have equal access to the higher-paying and higher-skilled jobs. Currently, women are predominantly farm-workers and men hold management positions.



ABOVE: Olam is still employing field laborers to harvest rice in some areas where machines cannot get in to do the work. The company expects to employ about 2,000 people, 90 percent of whom will be from nearby communities.

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For the farmers employed on our farm, there are a lot of technologies that ... they can convert onto their own farms. This will help them grow a business for themselves.

REGI GEORGE  
OLAM'S FARM MANAGER



PICTURED: A worker sifting rice after harvest at Olam's farm.

## PROFILE: OLAM FARM EMPLOYEES

Emmanuel Ayongo and Abubakar Adams Ibrahim—workers at Olam’s farm at Ondorie—bring fresh ideas home to their own fields.

When Emmanuel Ayongo first drove one of Olam’s heavy tractors to level the rice fields on the 1,000-hectare farm at Ondorie, he was not sure he could do it. “As small as I am, I did not think I could move it,” he said about a year after he started his new job. “But I used my training, and then it goes. I felt cool!”

Ayongo, 27, was picked to become a heavy equipment operator and driver of tractors linked to GPS data to level Olam’s rice fields so that they are easily seeded and harvested and so that they drain properly. Each of the tractors has a GPS receiver that adjusts the grader towed behind to precisely control the height of the field. This equipment was completely different from the small tractors Ayongo had used on his farm near Ondorie, but he had the basic skills, and with technical training from Olam, he is now one of the 12 tractor operators recruited from local communities.

In addition to making a good wage, Ayongo is taking his money and investing part of it in his own rice fields, now primarily cultivated by his wife. He has expanded his rice field from about half a hectare to two hectares, and has increased his production from 10 or 15 100-kilogram bags per year to more than 40.

### Sharing technology

A significant part of Olam’s business plan for its operation in Ondorie is to leverage the production of nearby farmers—outgrowers—by helping them with training and inputs like seed and fertilizer, and then buying their production. “For the farmers employed on our farm, there are a lot of technologies that are being implemented on our nucleus estate

[that] they can convert onto their own farms,” says Olam’s farm manager Regi George. “This will help them grow a business for themselves in addition to having employment here.” George says that in a few years Olam wants to be buying between 50,000 and 70,000 tons of rice from as many as 20,000 outgrower farmers.

One of them may be Abubakar Adams Ibrahim, a 27-year-old field supervisor for Olam. Ibrahim has his own small farm where he grows yams and rice, but says, “It is on a very small scale. We’re peasant farmers around here.” He is enthusiastic about his job because he is learning practical skills he can apply to his own farm, such as the proper application of fertilizer, treatment of seeds before planting, and transplanting techniques.

“I can stand before you right now and say that I can farm 30 hectares,” he says next to one of Olam’s fields being harvested by hand by a crew of women he is supervising. “My dream is to have a farm like this of my own, and with the knowledge from Olam about seeds and other things, I can grow my own rice and sell seeds to other farmers.” He says with this type of business he can support his growing family (he is married with a 2-year-old daughter), as well as his parents and in-laws who live with him. “I have a future here,” he says. “I’m getting help in training and I am making some savings for myself.”

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**RIGHT:** Field supervisor Abubakar Adams Ibrahim says he anticipates taking the training and expertise he is gaining working on Olam’s farm to his own rice fields as part of the farm’s outgrowers program.