



**PROJECT**

Carbon Offsetting Rice Emissions (CORE)

**GLOBAL FUND**

Fund for the Promotion of Innovation in Agriculture (i4Ag)

**COMMISSIONED BY**

Federal Ministry for Economic Cooperation  
and Development (BMZ)

**IMPLEMENTING PARTNERS**

Olam Agri and GIZ GmbH

**PROJECT REGION**

Nigeria (Benue, Nasarawa & Kano States)

**DURATION**

09/2024 – 02/2027



AS PART OF:



# Carbon Offsetting Rice Emissions (CORE), Nigeria

As part of the Special Initiative *Transformation of Agricultural and Food Systems*

## THE CHALLENGE

**Rice is the staple food for over 3.5 billion people worldwide.**

In Africa, Nigeria is the largest rice producer, playing a pivotal role in regional food security. In 2024, the Nigerian rice Industry reported a paddy rice production of about 8.1 million metric tons (AFEX, 2024).

Despite its critical role in food security, rice cultivation in Nigeria faces significant challenges from climate change. Increasingly unpredictable rainfall, extreme temperatures, and recurring droughts threaten productivity.

In addition to being impacted by climate change, rice cultivation is itself a major contributor to it. Traditional flooded rice paddies create anaerobic conditions that emit large amounts of methane (CH<sub>4</sub>), a potent greenhouse gas that significantly accelerates global warming. Smallholder farmers, who produce most of the rice in Nigeria, are particularly vulnerable to the consequences of climate change. Furthermore, women smallholders contribute significantly to cultivation and processing but often lack formal recognition, access to productive resources, agricultural knowledge, and training in modern farming techniques. This disparity limits their ability to adopt new, more environmentally friendly technologies and improve their economic opportunities.

## THE INNOVATION

**Low-emission rice cultivation with carbon credit methodologies tailored for smallholder farmers.**

The project CORE promotes climate-smart rice cultivation and post-harvest practices that reduce greenhouse gas (GHG) emissions while enhancing resilience and sustainability. These practices include alternate wetting and drying (AWD), biochar production and application to soils. The project will also create new evidence in the field of integration of Azolla, and strategies to reduce post-harvest losses (PHL). AWD, for instance, optimizes water use and significantly cuts methane emissions. Biochar improves soil health and enables long-term carbon sequestration. Azolla, a fast-growing aquatic fern, naturally fixes nitrogen in rice paddies, thus reducing the need for synthetic fertilizers and boosting productivity. PHL reduction methods comprise improved harvesting, drying, and storage, minimizing losses and food waste. In all practices, the feasibility of women's empowerment through entrepreneurship is being explored. Together, these approaches modernize rice cultivation to be more climate-friendly, sustainable, and resource-efficient.

A core innovation of the project is the development of new carbon certification methodologies for measuring and certifying GHG reductions in rice farming. These methodologies are being submitted to international carbon certification standard-setting bodies.



## Carbon Offsetting Rice Emissions (CORE), Nigeria

Their approval for new methodologies is a prerequisite for preparing carbon projects, which enables the generation of carbon credits. Through an equitable benefit-sharing system, smallholder farmers are rewarded for adopting climate-smart practices, supporting both environmental sustainability and rural livelihoods.

### Methodological Approach and Innovation Partnership

The CORE Nigeria project is being implemented by the Global Fund for the Promotion of Innovation in Agriculture (i4Ag) in partnership with Olam Agri. The project aligns with Nigeria's agricultural transformation agenda, working closely with relevant ministries and institutions. The innovation focuses on leveraging partnerships with local agricultural cooperatives, civil society organizations, research institutions, extension agencies, farmers' associations and financial stakeholders to drive sustainable impact on GHG emission reduction.

#### THE MAIN OBJECTIVE

**Create the conditions and mechanisms for smallholder farmers to valorize the reduction of GHG emissions that occur in the rice value chain.**

To reach the project objectives the following measures will be implemented:

- Technical training for farmers and multipliers on climate-sensitive technologies in rice cultivation and post-harvest activities
- Women empowerment through increased participation, entrepreneurial skills development, and business opportunities
- Identifying and testing of new and innovative methodologies to reduce GHG emissions
- Development of a Project Design Document for carbon accreditation methodology
- Improving national frameworks for carbon credit generation and trading

### THE OBJECTIVES IN FIGURES

- 60,000 tons of CO<sub>2</sub> equivalents saved (estimated)
- 12,000 smallholder farmers trained in technologies and practices to reduce GHG emissions
- 3,000 female smallholders strengthened as leaders and entrepreneurs
- 1 PDD submitted to an international standard setter
- 2 MoUs signed with relevant stakeholders to scale project outcomes and learnings

The project contributes to the achievement of the following **Sustainable Development Goals (SDGs)**:



### SUSTAINABILITY AND SCALING

CORE Nigeria promotes long-term impact and resilience by aligning with the GIZ agriculture cluster's focus on "Life without Hunger – Transformation of Agricultural and Food Systems", thus contributing to a climate-friendly economic diversification in Nigeria. Collaboration with relevant ministries and institutions ensures strong policy alignment and institutional support.

Key elements include close cooperation with national organizations, research institutions, and private sector partners like Olam Agri, which serve as knowledge hubs, implementation drivers and multipliers. By building on existing initiatives in the transformation of agri-food systems, the project draws from past experiences in the rice sector to strengthen domestic competitiveness along the entire value chain. Through the development of scientifically validated carbon credit methodologies, the project supports the emergence of reliable carbon markets and resilient cropping systems that reduce greenhouse gas emissions. Evidence-based data and proven practices will enable replication, attract further investment, and support the shift towards a sustainable, low-emission rice production in Nigeria.

Published by German Federal Ministry for Economic Cooperation and Development (BMZ)

As at November 2025

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Photo credit © GIZ/ César Londoño  
Design/ Layout Atelier Löwentor, Darmstadt, Germany

Implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH  
Registered offices Bonn and Eschborn, Germany

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