CONSUMPTION

Rice is a cereal grain and an important food crop for more than 3.5 billion people. Global consumption for 2018 is estimated at more than 414 million metric tons (MT) of milled rice which is mostly consumed in developing countries. While Asia continues to represent the largest share with around 84% of total rice consumption, demand in other regions is growing steadily. Until 2026, developing countries are projected to see a growth in rice consumption of 8%, while consumption in industrialized countries is expected to contract. Among all the regions across the globe, Sub-Saharan Africa is the one with the steepest growth projections in consumption with 22% by 2026 (Figure 1).

Rice is becoming one of the most important food crops on the African continent. Steep population growth, coupled with rapid urbanization and changing consumer behaviour, are the main drivers behind the increasing demand for the cereal. In 2018, rice consumption in Sub-Saharan Africa is estimated at approximately 26.6 million MT a year. This number will increase even further by 2026, when rice consumption is expected to reach more than 34 million MT.

CONSUMPTION GROWTH ESTIMATES 2018 - 2026

![Figure 1: OECD-FAO Agricultural Outlook 2017](attachment:figure1.png)

PRODUCTION

Despite this increase in consumption in Africa, production quantities of rice fall short of meeting this demand. Forecasts for 2018 estimate paddy production at around 27 million MT (approx. 16 MT of milled rice). Hence, production output in Africa meets just a fraction of what is actually demanded. Nevertheless, rice production has steadily grown over the years and in 2018 Africa is estimated to have produced 38 percent more rice than just a decade ago (Figure 2).

At the country level, Nigeria is by far the largest rice producer in Sub-Saharan Africa, accounting for around 26% of total rice production, followed by Madagascar (13%), Mali (11%), and Tanzania (11%).

IMPORTS

SUB-SAHARA AFRICA: PADDY PRODUCTION & MILLED RICE IMPORT (MT)

The gap between demand and supply of rice across Africa is ultimately filled by substantial amounts of imported milled rice – predominantly from Asia. In 2018, Sub-Saharan African countries imported approximately 14 MT of milled rice. Nigeria alone is expected to import a total of 2.7 million tons of milled rice in 2018, giving the country an estimated rice self-sufficiency ratio of only 45%. This low level in rice self-sufficiency tends to be the rule rather than the exception across Africa. In addition, the imported rice is usually of substandard quality as it often comes from old Asian stocks and was already rejected in many instances by non-African countries.

West Africa is the continent’s rice powerhouse, producing 66% of the total paddy in Africa, mostly by smallholder farmers.
Despite increased paddy production over the years, the average yields across Africa remain very low. Between 1990 and 2016, African yields only grew by 8%, while rice yields in Southeast Asia grew by 22% during the same period. This leaves a yield gap of around 2.1 MT/ha between African and Southeast Asian yields. Even within the African continent we see substantial variance in terms of rice yields. For instance, Mozambique and the Gambia report yields of less than 1MT/ha while Madagascar shows average yields of more than 4 MT/ha. Mauritania even achieves average rice yields of 5.3 MT/ha (Figure 3).

The Competitive African Rice Initiative (CARI) aims at improving the livelihoods of smallholder rice farmers and sustainably integrating them into the rice value chain. Implemented by the Gesellschaft für internationale Zusammenarbeit (GIZ) and its local partners, the initiative aims at increasing the quality and quantity of smallholders’ rice output. The program works in four African countries: Nigeria, Burkina Faso, Ghana and Tanzania. Since CARI’s implementation in 2013, rice farmers managed to increase their yields substantially (Figure 4).

While CARI does certainly not reach all rice farming communities across the four countries, the interventions showed that with the right advice and support, the yield gaps in the African rice sector can be reduced and the untapped potential successfully used. With the right approach, this in turn can improve the livelihoods of millions of smallholder rice farmers across the continent and help push them out of poverty.

Given that much of the rice quantities imported could be grown and processed within Africa, it is often argued that Africa exports many jobs in the rice value chain to Asia. This aspect is particularly precarious given the fast-growing population and the high unemployment and underemployment rates among African youth. Value chain interventions that target smallholder farmers are therefore an effective vehicle to keep jobs and processing within the African continent.

The following section contains further information on the approaches and intervention areas of CARI.
COMPETITIVE AFRICAN RICE INITIATIVE (CARI)
PROJECT OVERVIEW PHASE 2

Integrating smallholder rice farmers into sustainable business models within the rice value chain

CHALLENGES
In addition to the low rice self-sufficiency ratio of many countries and the rapidly increasing demand, Africa also faces many challenges at the farm level. Overall, there is little knowledge regarding good and sustainable farming techniques and crop protection practices, as well as a lack of improved seeds and fertilizers. Necessary infrastructure for efficient storage, transport and processing is insufficient. Given that prices for their product are low, smallholder farmers are often left with low income margins. As a result, most of the rural population in rice producing areas lives in poverty and their average income is less than 2 US Dollars per day.

OUR APPROACH
The Competitive African Rice Initiative (CARI) is a program commissioned by German Federal Ministry of Economic Cooperation and Development (BMZ) and co-financed by the Bill and Melinda Gates Foundation (BMGF). The second phase of the program (CARI 2) started in July 2018 and is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in cooperation Kilimo Trust (KT) and John A. Kufuor Foundation (JAKF) in four African countries: Nigeria, Burkina Faso, Ghana and Tanzania. The objective of CARI 2 is to increase productivity and improve the quality of smallholder farmers’ rice produce as well as strengthen the capacity and efficiency of local processors. While the first project phase (CARI 1) mainly focused on supporting rice farmers in the production of rice, the second phase increasingly supports the promotion of inclusive business models along the rice value chain. Local processing and marketing companies benefit from a reliable supply of high-quality rice, as they enter constant supply relationships with smallholder farmers. In addition, businesses and farmers gain better access to finance as result of the improved market linkages. This way, a stable value chain is developed, connecting input suppliers, rice farmers, parboilers, millers and distributors which benefits the entire rice sector. Smallholder farmers receive favourable (in-kind) loans from rice millers or input suppliers to buy high-quality inputs at the right time.

In addition, farmers are trained on how to organize their businesses according to market demand. Special emphasis is put on cooperation with local partners. CARI promotes the commitment of mostly private and some public companies through a Matching Fund (MF), which must be leveraged by the partners’ own financial resources. This way, sustainability in the rice sector and demand-driven production is increased.

<table>
<thead>
<tr>
<th>Project name</th>
<th>Competitive African Rice Initiative (CARI) 2</th>
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<tbody>
<tr>
<td>Commissioned by</td>
<td>German Federal Ministry for Economic Cooperation and Development (BMZ)</td>
</tr>
<tr>
<td>Co-financed by</td>
<td>Bill and Melinda Gates Foundation (BMGF)</td>
</tr>
</tbody>
</table>
| Implementing organizations    | • Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH  
                               | • John Agyekum Kufuor Foundation (JAFK) 
                               | • Kilimo Trust (KT)                              |
| Political partners            | • ECOWAS 
                               | • Tanzanian Ministry of Agriculture            |
| Project countries             | Tanzania, Burkina Faso, Ghana and Nigeria   |
| Project duration              | July 2018 until June 2021                   |
| Total budget                  | 10.2 million €                              |

CARI’s activities operate along four intervention areas:
- Knowledge management and cooperation
- Inclusive business models and productivity
- Financial services
- Policy advice
ACHIEVEMENTS SO FAR...

More than 750,000 direct and indirect beneficiaries have increased their income and improved their food security.

More than 178,000 smallholder farmers have received training in good agricultural practices (GAP).

More than 137,000 smallholder farmers have participated in farmer business school (FBS) trainings.

Rice yields in rainfed rice production systems have increased by up to 185%, while yields in irrigated production systems have increased by up to 136%.

More than 143,000 farmers are engaged in the rice value chain through contracts with off-takers.

In its objective to increase the income of smallholder farmers in a sustainable manner and to supply the project region with high quality rice, CARI improved the livelihoods of more than 150,000 smallholder farmers in Phase 1.

Capacity has been improved in good agricultural practices, in business skills, small-scale rice parboiling (partial boiling before milling in order to increase nutritional value), organization in groups, mechanization, family nutrition and marketing.

Millers received support in processing efficiency and marketing as well as information about consumer preferences and competitiveness of their brands.

CARI’s inventions directly contribute to the achievement of the following SDGs ...

OUR APPROACH IN CARI PHASE 2

The second project phase (CARI 2) focuses on promoting inclusive business models among the value chain actors. Overall, CARI 2 seeks to integrate 60,000 smallholder rice farmers into sustainable and long-term business models in all four countries. Through Multi-Actor Partnerships (MAP), CARI 2 also supports organizational and regional exchange as well as coordination of development organizations in the rice sector.

The experiences of the first phase show that access to financial services remains a bottleneck for smallholder farmers and local processors. Through targeted support regarding the demand and supply side of financial services as well as improved linkages between actors of the value chain, CARI is working on easing access to finance for its partners.

While the first project phase mainly focused on the production of paddy rice, the second phase increasingly supports local processors with technical expertise to provide high quality rice to their customers.