

African rice production must become more efficient to prevent large-scale import and cultivation, researchers say

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The 'Smart-valleys' approach developed by AfricaRice is a low-cost, participatory and sustainable approach to develop the bottoms of inland valleys for rice-based systems . Credit: Dr. Sander J. Zwart (IWMI)

Rice production in Africa is in urgent need of intensification to meet future demand. This is to prevent the continent from becoming largely dependent on the import of rice or significant portions of farmlands

being used for cultivation. Research shows there is potential to make rice production more efficient if the current farming methods are improved.

Demographic developments and changes in diet will double the demand for rice in Africa in the coming 25 years. At the same time, the current production is insufficient to meet the existing demand. Research indicates an urgent need to increase the yield of African rice crops. The study, to which Wageningen scientists contributed, is [published](#) in *Nature Communications*.

"Internal production currently meets only about 60% of the demand in Africa. The rest of the demand is met through import, which amounts to some 30% of the global rice trade," says Shen Yuan, professor of agronomy at Huazhong Agricultural University.

"Africa's dependence on import not only threatens [food security](#), it also makes the continent vulnerable to sudden external price changes, such as recently occurred when India announced a ban on the exportation of rice," Martin van Ittersum, professor of agronomy at Wageningen University & Research adds.

Potential to increase rice production

The study shows that Africa has the potential to increase its [rice production](#) considerably. "Using crop simulation and data gathered in the field, we discovered that the current yield is less than half the potential that could be achieved with improved farming methods," states agro-systems expert Pepijn van Oort of Wageningen University & Research.

Enhancing rice production efficiency poses a significant challenge.

"Agricultural research and development programs must focus on improving farming methods in order to break through the long-term pattern of stagnating yields. This includes improvements in [land use](#), soil

and plant nutrition, [weed control](#) and [water management](#)," says Mazuki Saito, a former researcher at the Africa Rice Center who is presently employed by the International Rice Research Institute (IRRI). "Improved yield not only calls for better farming practices but also for better policies, institutes and markets to help farmers apply these practices."

The study reveals that intensifying Africa's rice production is a necessity. Without a substantial increase in yields, rice imports will increase, as will the amount of land used for rice production to meet the future demand for the product.

More information: Shen Yuan et al, Intensifying rice production to reduce imports and land conversion in Africa, *Nature Communications* (2024). [DOI: 10.1038/s41467-024-44950-8](https://doi.org/10.1038/s41467-024-44950-8)

Provided by Wageningen University

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