

Increased sustainability of rice-based systems through use of beneficial rice-microbe associations

Project Title: P1669 - AfricaRice contribution to flagship project 5

Description of the innovation: In order to meet the ever-increasing demand for rice, huge quantities of fertilizers are used especially in irrigated lowlands, often with negative impacts on the environment. AfricaRice and its partners have identified a combination of a mycorrhiza and plant growth-promoting bacteria which can increase yields of certain rice varieties significantly under irrigated lowland conditions at half the recommended fertilizer rate.

New Innovation: No

Stage of innovation: Stage 2: successful piloting (PIL - end of piloting phase)

Innovation type: Production systems and Management practices

Geographic Scope: Regional

Number of individual improved lines/varieties: <Not Applicable>

Region:

- Sub-Saharan Africa

Description of Stage reached: In a trial using eight varieties treated with the two rhizospheric microbes, at the 50% N fertilizer rate under continuously flooded conditions, NERICA-L-19, Sahel 108 and Sahel 202 gave above 9 tons/ha with microbe treatment which was significantly higher than their yields without microbe treatment (8 tons/ha).

Name of lead organization/entity to take innovation to this stage: AfricaRice - Africa Rice Center

Names of top five contributing organizations/entities to this stage:

- IRD - Institut de Recherche pour le Développement
- UCAD - Université Cheikh Anta Diop de Dakar
- ISRA - Institut Senegalais de Recherche Agricole

Milestones: No milestones associated

Sub-IDs:

- 11 - Adoption of CGIAR materials with enhanced genetic gains
- 10 - Closed yield gaps through improved agronomic and animal husbandry practices

Contributing Centers/PPA partners:

- AfricaRice - Africa Rice Center

Evidence link:

- <https://doi.org/10.1016/j.rhisph.2018.08.003>
- <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0167014>

Deliverables associated: <Not Defined>

Contributing CRPs/Platforms:

- Rice - Rice