14. Irrigated rice practices changes in the Senegal River Valley according to climate and constraints evolutions

Baldé Alpha Bocar[1], Muller Bertrand[1,2], Van Oort Pepijn[3], Ndiaye Ousmane[4], Stuerz Sabine[5], Sow Abdoulaye[1], Diack Salif[6], Ndour Maimouna[1], Dingkuhn Michael[7]

[1]*Africa Rice Center (AfricaRice), Saint-Louis, Senegal*

[2]*Centre de Coopération Internationale en Recherche Agronomique pour le développement (CIRAD)/AfricaRice, Saint-Louis, Senegal*

[3]*AfricaRice/Wageningen University, Wageningen, The Netherlands*

[4]*Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM), Dakar, Senegal*

[5]*Hohenheim University, Stuttgart, Germany*

[6]*Société d'aménagement et d'exploitation des terres du delta du fleuve Sénégal et des vallées du fleuve Sénégal et de la Falémé (SAED), Saint-Louis, Senegal*

[7]*CIRAD/International Rice Research Institute (IRRI), Los Banos, Philippines*

More and more irrigated rice farms of the Senegal River Valley (SRV) no longer respect the sowing periods promoted in the 90s to reduce sterility risks due to extreme temperatures. This study aims at understanding that reality and assessing whether new sowing periods must be defined. Combining focus-groups and surveys, climate analysis, field experiments and modeling work with RIDEV model, it addresses the evolution of cropping practices and their constraints, farmers' climate perception, climate evolution and its consequences on rice development and sowing periods in the SRV.
Data analysis shows rainfalls and temperature increases, and particularly a significant increase between the present decade and the 1950-1980 period which was considered for the establishment of the recommended sowing windows (+1°C to +2°C on monthly averages for Podor), with less extreme cold temperatures and more extreme hot ones. Farmers are very aware about recent climate evolution, with respectively 94% and 72% of them saying that rainfall and temperature patterns have changed. More precisely they commented that "the cold period shifted by about one month, from "October/November – February/March" to "November – March/April". Nevertheless the majority considers that the recommended sowing periods are still pertinent and explain that late sowings are due to delayed access to tractors, inputs and credits. Only few ones (5 %) intentionally sow late, considering there is no longer a danger in doing that. However, in 2011 farmers who sown later got very bad yield and farmers explain that "because the cold arrived earlier as it happened in the past". Yet, while farmer's comments appear coherent with climate data, up to now we can't totally confirm them by crop modelling since we still have difficulties in the simulation of the sterility despite recent model improvements. Additional work is required to reach a conclusion.

We thank French ANR ESCAPE project and CCAFS program for their funding.