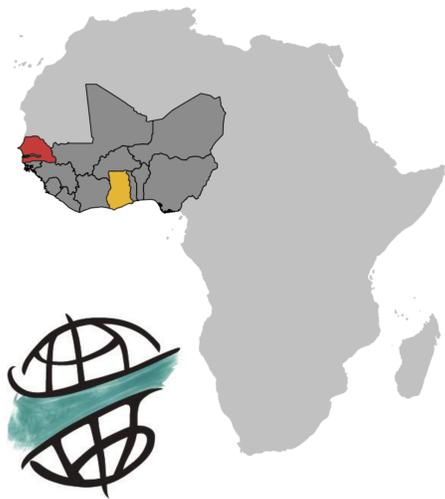


Co-Developing Innovations for Sustainable Land Management in West African Smallholder Farming Systems - COINS

Jonas Meier¹, Frank Thonfeld¹, Niklas Heiss¹, Ursula Gessner¹, Madina Diancoumba², Yvonne Ayaribil², Johannes Schuler², Mathias Hoffmann², Heidi Webber², Valerie Graw³, Stefanie Steinbach³, Niels Dedring³, Andreas Rienow³, Eric Tambo⁴, Tarisai Kaneypi⁴, Hycenth Tim Ndah⁵, Javier Miranda⁶, Thuy Nguyen⁷, Amit Kumar Srivastava^{2,7}, Thomas Gaiser⁷, Sidy Tounkara⁸, Paul Ndiaga Ciss⁸, Laure Tall⁸, Pierre C. Sibiry Traoré⁹, Janet Mumo Mutuku⁹, Celeste Tchammi Nono Nghotchouang⁹, Khadidiatou Faye⁹, Daniel Annerose⁹, Amos Tabalia¹⁰, Lilian Waithaka¹⁰, Linda Busienei¹⁰, Kwame Hackman¹¹, Narcisse Yehouenou¹¹, Leonard Dakpo Akoba¹¹, Audrey Codija¹¹, Charles Sanou¹¹, Belko Diallo¹¹, Gifty Ampomah¹², Fatima Denton¹², Bright Salah Freduah¹³, Dilys MacCarthy¹³, Bashiru Haruna¹⁴, Alhassan Lansah Abdulai¹⁴

¹German Aerospace Center (DLR), German Remote Sensing Data Center (DFD), ²Leibniz Centre for Agricultural Landscape Research (ZALF), Germany, ³Ruhr-University Bochum (RUB), Germany, ⁴UNU-EHS, Bonn, Germany, ⁵University of Hohenheim, Dept. of Communication and Advisory Services in Rural Areas, Germany, ⁶Institute for Food and Resource Economics, University of Bonn, Germany, ⁷University of Bonn, Inst. Crop Sci. and Res. Conserv. (INRES), ⁸Initiative Prospective Agricole et Rurale (IPAR), ⁹Manobi Africa, ¹⁰ACRE Africa, ¹¹WASCAL, Competence Center Ouagadougou, Burkina Faso, ¹²UNU-INRA, Accra, Ghana, ¹³University of Ghana, Accra, Ghana, ¹⁴Savanna Agricultural Research Institute (SARI), Tamale, Ghana



BACKGROUND

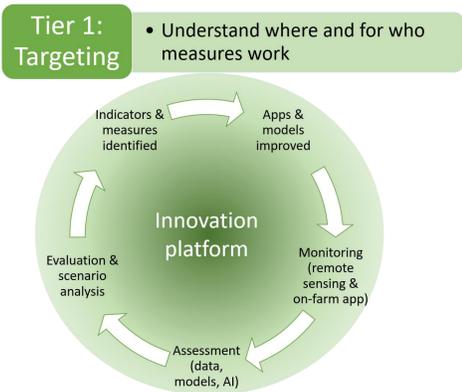
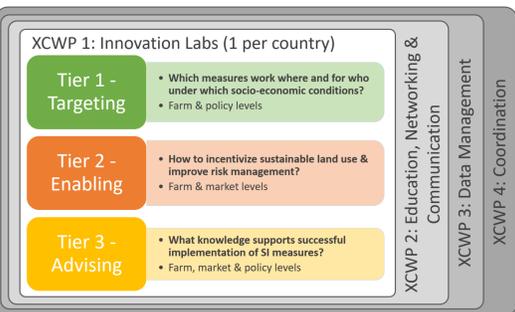
The COINS project

... 1 of 4 regional projects within the call "Sustainable Land Management in Sub-Saharan Africa: Improving livelihood through local research within the FONA framework of the BMBF

Objectives

... The **implementation of sustainable intensification (SI) practices**, "where agricultural yields are increased without adverse environmental impact and without the conversion of additional nonagricultural land" (Pretty & Bharucha, 2014)

... Creating **incentives** and structures and related governance mechanisms that **enable sustainable land use interventions**

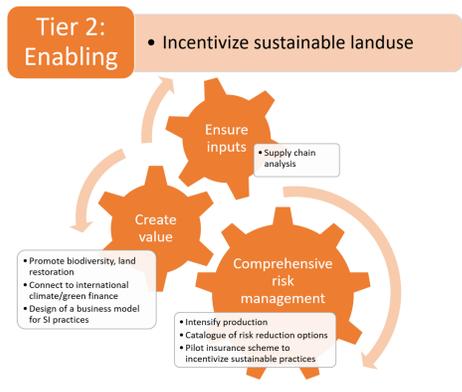
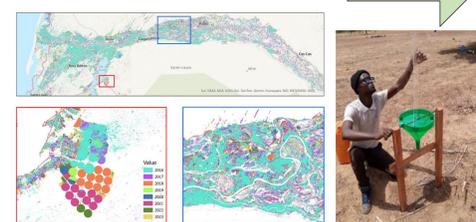


Tier 1: Which measures work where and for whom under which socio-economic conditions?

... Surveys/Assessment



... Monitoring/Modelling

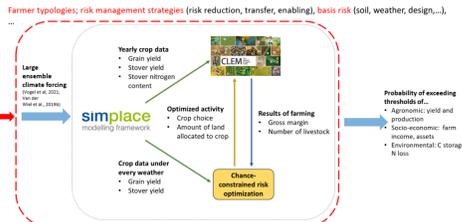


Tier 2: How to incentivize sustainable land use and improve risk management?

... Business model development



... Risk management strategies



Tier 3: What knowledge supports successful implementation of SI measures?

... Co-design with farmers e.g. participatory mapping

... Community workshops for local farmers

... Service product development

... Development of MOOCs for knowledge distribution



Innovation Labs: Implementation of SI practices

- Focus in Senegal on:**
- System of sustainable rice intensification (SRI)
 - Integrated Soil Fertility Management (ISFM)

Players enlisted for the Innovation Laboratory in Podor (Senegal)

Farmer's organizations

- Union of Young Farmers of Koyli Windé
- Interprofessional Committee of the Rice Sector
- Galouya Union
- Cooperative Fouta 1
- Union of women transformers of the Podor department
- Podor Department Breeders' House

Technical services

- National Agricultural and Rural Consultancy Agency
- National Institute of Soil Science
- Departmental Rural Development Service
- Departmental Livestock Service
- Regional Development Agency
- National Company for the Development and Exploitation of Land in the Senegal River Delta and the Senegal River and Falemé Valleys
- Podor Water and Forestry Service
- Podor Departmental Local Development Support Service

Non-Governmental Organizations

- Environment Development Action for Energy
- NGO Democracy-Human rights-Development
- NGO Union for Solidarity and Mutual Aid (Podor Integrated Programme)
- Federation of Non-Governmental Organizations of Senegal
- Syngenta Foundation for Sustainable Agriculture

Administration and local authorities

- The Agricultural Bank
- The National Agricultural Insurance Fund of Senegal
- Localities

Financial sector and insurance

- The Agricultural Bank
- The National Agricultural Insurance Fund of Senegal
- Localities

Platforms for dialogue and advocacy

- Platform for governance of natural resources (land, water, forests)
- Fouta Young Agripreneurs Innovation Platform

Research and training organisations

- Gaston Berger University of St-Louis
- Richard-Toll Higher Institute for Professional Training
- Senegalese Institute for Agricultural Research of St-Louis
- AfricaRice
- Podor Department Professional Training Centre
- Sector Centre for Professional Training in Mechanics and Powered Equipment of Diama

LIMAceRiz/GDT

COINS Consortium



Pretty, J. and Z. P. Bharucha (2014): Sustainable intensification in agricultural systems. *Annals of Botany* 114(8): 1571-1596.
 Adelesi, O.O.; Kim, Y.-U.; Webber, H.; Zander, P.; Schuler, J.; Hosseini-Yekani, S.-A.; MacCarthy, D.S.; Abdulai, A.L.; van der Wiel, K.; Traore, P.C.S.; Adiku, S.G.K. (2023): Accounting for Weather Variability in Farm Management Resource Allocation in Northern Ghana: An Integrated Modeling Approach. *Sustainability* 2023, 15, 7386. <https://doi.org/10.3390/su15097386>

SPONSORED BY THE



This work is part of the COINS project funded by the German Federal Ministry of Research and Education (Förderkennzeichen 01LL2204A-F)

