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for managing natural resources and a better life for all”

Co-developing innovations for sustainable land management in West African smallholder farming systems - COINS

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Abstract

West Africa is facing the major challenge of securing sustainable living conditions in the face of climate change, social transformation and a growing population. Efficient land management is needed to ensure long-term food security and sovereignty in Africa while at the same time conserving natural resources. One aspect of efficient land management can be the intensification of agriculture, i.e. the sustainable increase in productivity without taking up new land. In COINS, we catalogue methods of sustainable intensification (SI), assess their suitability in local contexts in study areas in Ghana and Senegal and implement suitable measures on the ground. In doing so, we integrate stakeholders and actors in innovation labs in order to jointly identify mechanisms and framework conditions under

which SI of agriculture can work. In addition, we strengthen the skills and knowledge of farmers and other key stakeholders so that SI can be successfully implemented. The targeted SI practices cover specific aspects of integrated soil fertility management (ISFM) in rainfed systems of Northern Ghana and the system of rice intensification (SRI) in irrigated systems of the Senegal river valley. Digital technologies play an important role throughout the project. We take a landscape approach based on modelling, earth observation and data science to promote improved cropping and agricultural management practices for SI on productive land and soil rehabilitation practices on degraded soils. By operationalizing support mechanisms, including comprehensive risk management strategies and an incentive and monitoring program, we aim to create the conditions for sustainable land management. Great importance is also attached to the development of a range of advisory services for farmers to implement the SI, so that the achievement of the goals defined by the stakeholders is supported. The results of the project will serve as a basis for local stakeholders and decision-makers, enabling the implementation of proven SI practices to enhance resilience against climate change and promote sustainable agricultural intensification. Here, we introduce the research project and present first results from both study sites.

Keywords: Agriculture, food security, Ghana, integrated soil fertility management, land management, Senegal, sustainable intensification, system of rice intensification, West Africa