

Water, land and soil management strategies to intensify cereal-legume farming systems in northern Ghana

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Key research activities

- Soil and water conservation: Preventing erosion on farmland
- Monitoring soil moisture variation and microclimatic variations
- Land cover change analysis and land health assessments
- Training and capacity building towards soil and water conservation

Results and main findings

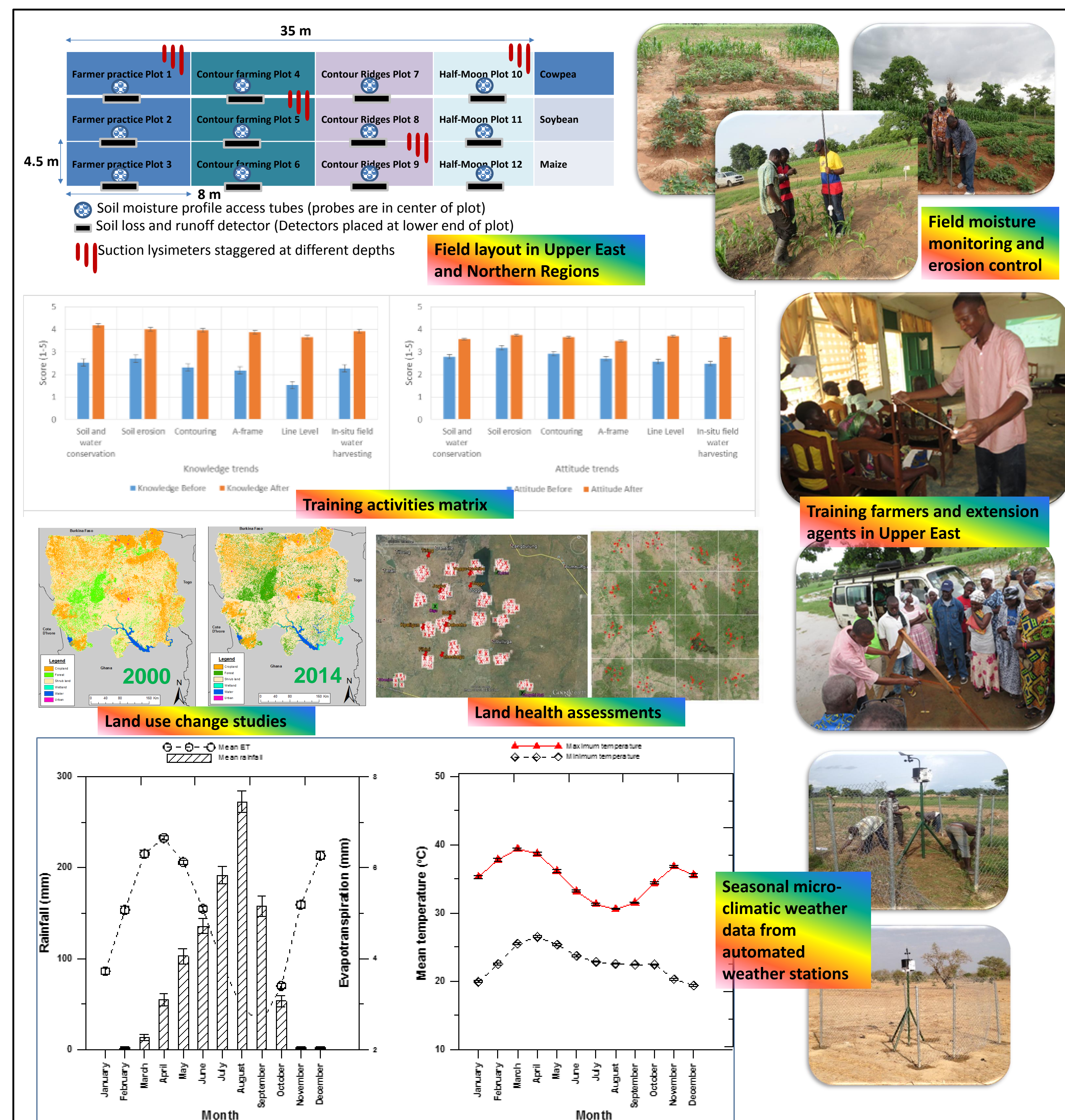
- Critical soil moisture depth is in the first 30 cm of profile within the crop rooting zone; there is need to increase storage options.
- Land health assessments identified vulnerable areas that helps target appropriate agricultural zones
- Land cover change analysis showed expansion of cropland into marginal areas hence the need for sustainable intensification
- Improved understanding of soil and water conservation measures implementation among farmers and extension agents

Implications of the research for generating development outcomes

- Identification of vulnerable areas would help District Planners and the RPCU to target appropriate agricultural zones
- Expansion of cropland into marginal areas identifies the need for sustainable intensification
- About 25% of forest have been converted to cropland between 2000 to 2014; this calls for need to have zonal forest protection

How this work would continue in Africa RISING phase 2

- Emphasis would be on research and partnerships for scaling out promising technologies from Phase I;
- Characterize watershed areas to evaluate and adapt integrated soil water and land management practices to increase productivity and profitability, while maintaining the natural resource base;
- Quantify nutrient flows and resources use efficiency;
- Develop decision support tools for resilient production systems for example provide climatic advisory apps that inform farmers on rainfall trends, develop simple tradeoff analysis for farm system components that enhance 'options by choice' for farmers.



Current partnerships and future engagements for out scaling

- Currently working with IITA, IWMI, MoFA, UDS and KNUST
- CGIAR Partnerships through the Water, Lands and Ecosystems (WLE) Program (CRP5);
- Future engagements would focus on research for scaling and partnerships will focus on use of ICT for Technology uptake. Potential engagements would include ESOKO and TIGO KILIMO and ECHO MOBILE to offer Agronomic and weather advisories and market trends updates.
- Greater involvement with the Private Sector will be sought