

Following micro-dosing and ISFM innovations in northern Ghana: challenges and prospects for stakeholders

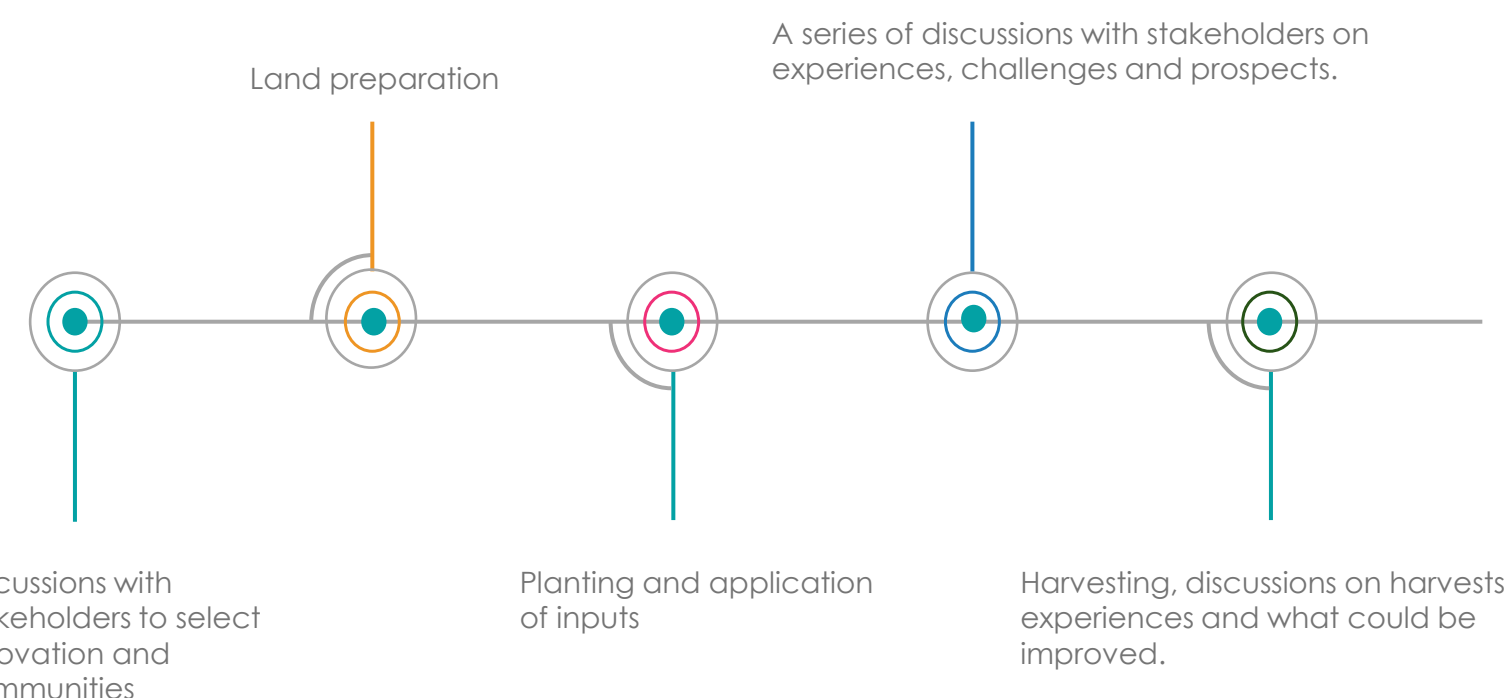
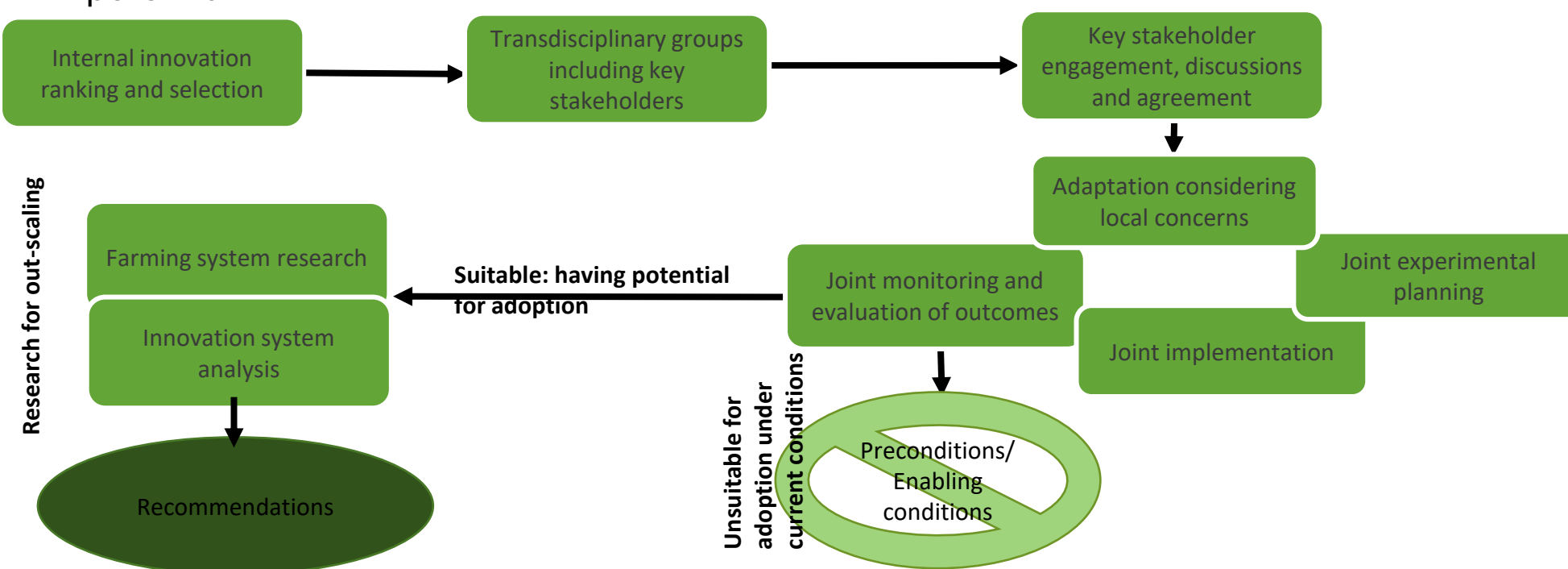
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INTRODUCTION

- Northern Ghana faces significant challenges due to low soil fertility and harsh weather conditions with only one major cropping season per year.
- To address these constraints, the projects of DecLaRe and COINS are separately developing agricultural innovations.
- Micro-dosing: applies small, precise amounts of inorganic fertilizer directly to planting holes to achieve efficiency.
- Integrated Soil Fertility Management (ISFM): combines biochar, plant residue, inorganic fertilizer and manure to improve soil fertility and reduce reliance on synthetic inputs.
- This study was done by following the innovations to document the development processes, evaluate their effectiveness and assess upscaling potential.

METHOD

- The “Follow the Innovation” (FTI) framework was adopted.
- The FTI framework has three phases (1) initiation, (2) joint implementation (3) follow-up.
- A questionnaire was developed based on the FTI framework to understand (1) previous innovations (2) the current innovation (3) factors that will foster adoption of the current innovation.
- One-on-one interviews were conducted with farmers who are part of the innovation development, farmers who are not part of the innovation, opinion leaders in the communities, and researchers implementing the innovation.



Key Findings

- Farmers involved in MD trials gained a better understanding of each step, enhancing skill transfer and independent application.
- Micro-dosing requires simultaneous planting and fertilizer application, increasing labour demands and posing a barrier for smallholders.
- ISFM benefited from broad stakeholder involvement (farmers, extension agents, district offices), enhancing trust and scalability.
- Men are more likely to adopt ISFM due to greater access to land, labour, and capital. Women face structural constraints limiting their participation.



Highlights and Implications

- Farmers recognise the need to improve soil fertility..
- The inclusion of extension agents and the district office of agriculture for microdosing could facilitate outscaling.
- Weather variability remains a major constraint, necessitating climate-resilient planning.
- The difference in capacity and resources between men and women is displayed through this process.
- Complementary innovations are needed to reduce labour demands, improve access to inputs and build resilience to climate variability.