

## **How can smallholder farmer-market linkages increase adoption of improved technology options and natural resource management strategies?**

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The paradigm of involving farmers in research is based on strong evidence that enhancing farmers technical skills and research capabilities, and involving them as decision-makers in the technology development process results in innovations that are more responsive to their priorities, needs and constraints. Linking the technology development process to market opportunities has the potential to promote links between investment in natural resources, markets, and adoption of technologies. Market orientated agriculture for reducing poverty and environmental degradation needs to centre on three related paradigms; strengthening biological processes in agriculture (to optimise nutrient cycling, minimise external inputs and maximise the efficiency of their use); building farmer's capacities (to learn and innovate focused on improving livelihoods and the management of natural resources); and developing forward and backward linkages (between natural resources, production and markets). Starting with identification of market opportunities, natural resource management (NRM) issues are often raised during the process, for example, investment in soil fertility, leading to an iterative cycle of participatory action research with communities. In a multi-stakeholder coalition, CIAT and its partners are working in Malawi, Mozambique, Tanzania and Uganda to explore and understand how market orientation leads to improved NRM at the farm level. This paper uses case studies from Kabale in south western Uganda to highlight and discuss examples where identifying potential markets for existing and new products has led to increased investment in NRM and how developing innovative agricultural technologies that meet the specific needs and constraints of different wealth and gender groups leads to improved livelihoods. This active involvement of stakeholders in the design of the NRM system points to ways of tightening the nutrient cycle, for example, in relation to women's management of small livestock, and the use of multipurpose legumes and dual purpose barriers as sources of biomass for soil fertility, livestock feed, fuel and fencing.