MARKET DRIVEN IMPROVEMENT OF POTATO AND GARDEN PEA VALUE CHAINS THROUGH A GENDER TRANSFORMATIVE AGRICULTURE EXTENSION APPROACH

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Market driven improvement of Potato and Garden Pea Value chains through a Gender Transformative Agriculture Extension Approach

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INTRODUCTION

Many farming households in Central Kenya highlands view farming not as a business but the main livelihood of the family. Gender inequalities within farming households through unequal access and control over productive assets and resources, agricultural technologies, extension services and markets have challenged productivity of Potato and garden pea value chains, which are regarded as priority crops in Nyandarua County, Kenya.

This study seeks to evaluate the impact of Gender Transformative Farmer Field and Business School (GT-FFBS) compared to conventional Farmer fields Schools (Kilimo na Soko) on farm production and gender roles in Potato and Garden pea value chains. The broad aim of the study is to bridge existing knowledge gaps on the role of gender in agriculture and promote gender-transformative and gender equitable agricultural programming.

METHODOLOGY

In January 2018, 30 existing farmer groups in South Kinangop sub-county (Figure 1) were recruited and randomly allocated to two extension approaches as follows: GT-FFBS (15 farmer groups) and Kilimo Na Soko (15 Farmer Groups). Spatial blocking was done to minimize spill over and contamination between the two extension approached. 30 farmer representatives from each approach were engaged in a gendered value chain (VC's) analysis of potato and garden pea. Constraints and opportunities and gendered node challenges were assessment (Table 1 & 2)

In April start of 2018 Long rain season, 28 farmer groups established simple randomized experiments comprising 9 replicate plots with the following treatments for potato plots: 1).). 250 Kg Ha^{-1} DAP + 15 Ton Ha^{-1} Farm Yard Manure with seedling ridging conducted at planting, 2). 250 Kg Ha^{-1} DAP + 15 Ton Ha^{-1} Farm Yard Manure with seedling ridging conducted at flowering and 3). Farmer practice comprising 15 Ton Ha^{-1} Farm Yard Manure with seedling ridging conducted at flowering. A similar treatment plan was applied for Garden pea but using 300 Kg Ha^{-1} DAP and with/without stem training. Harvest yields were assessed to compare the differences between treatments and across the two study approaches ($P < 0.05$) (Figure 2)

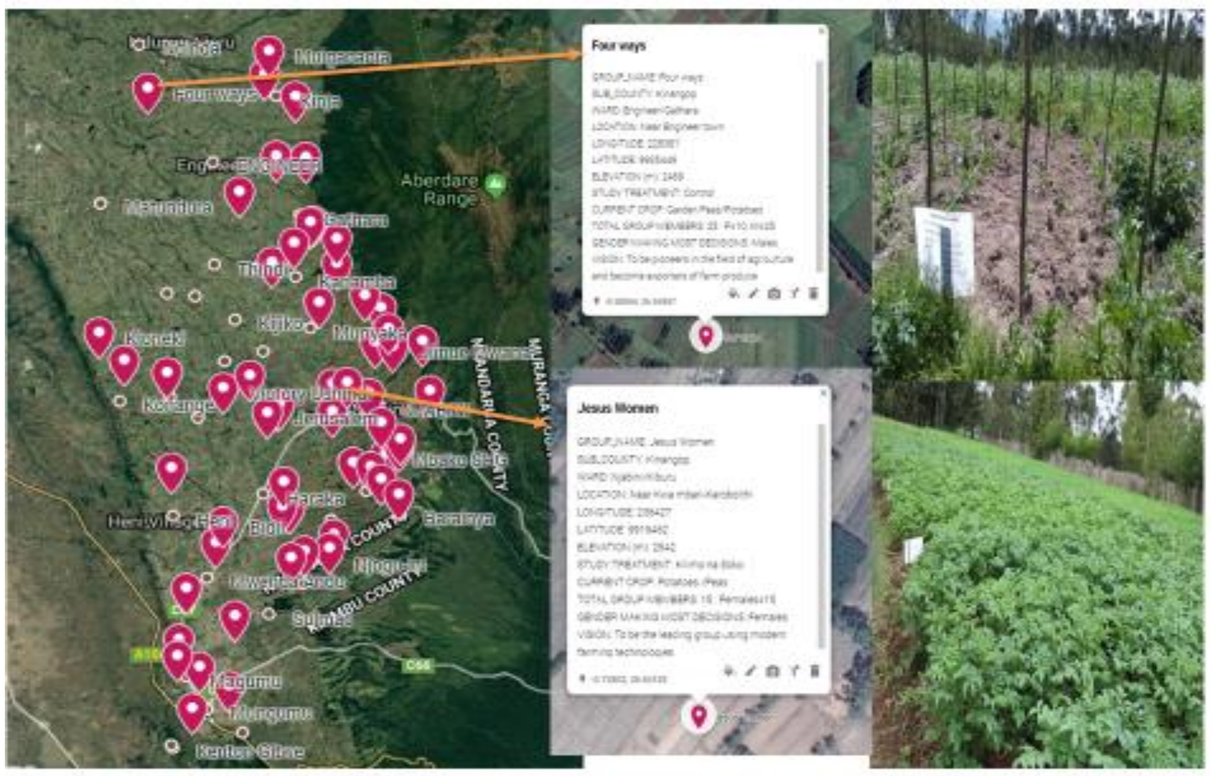

Figure 1: Study location in South Kinangop, Nyandarua County, Kenya

RESULTS

Table 1: Potato value chain Constraints and Opportunities analysis

Value Chain Node	Constraint	Opportunities
PRE-PRODUCTION	- Low quality seeds - High cost of inputs	- Quality seed production - Collective inputs purchasing
PRODUCTION	- Pests and diseases - Soil contamination - Small farm holdings - High production costs	- Adopt tuber and garden pea yield agronomic technologies - Soil testing and treating - Increase production acreage
HARVEST	- Tuber/grain pea harvest losses	- De-hulming
POST HARVEST	- Tuber/grain losses	- Improved farm storage - Synchronized crop production
MARKETS	- Sale in unconventional bags - Exploitation by middlemen - Lack of market information - Home consumption limiting sale portions - Poor infrastructure network	- Households market research - Emerging processing plants - Tuber and Grain Value addition - Improved market infrastructure - Linkage to formal markets

Table 2: Control and Participation along the value chain continuum

Value Chain Node	Potato Value Chain	Garden Pea Value Chain
PRE-PRODUCTION	- Women majorly disempowered in decisions making on productive assets - Women intensely involved in cropping activities with high labour requirements	- Women control variety of seed to plant mostly sorted from previous season crop
PRODUCTION	- Women have significant workload in production activities - Men engaged in disease management citing lack confidence in women to mix pesticides. - Women multi-task farm work and household responsibilities.	- Women dominate all production aspects production ((planting, weeding and harvesting). - Men regard labor activities as a woman's role thus minimally participate in production activities.
HARVESTING	- Both Men and Women involved in harvesting, with men mostly involved in off-farm transport	- Women have full control on this Value chain node
POST-HARVEST	- Women fully control and participate in this node	- Men minimally involved but control post-harvest allocation (portions for sale, consumption and sorting for the next season) - Women significantly control this node
MARKETING	- Men significantly engaged in marketing activities (farm gate, local and external markets) - Women have less control of the household sale process (quantity sold, prices, where produce is sold and the negotiation process)	- Women mostly sell garden pea without the knowledge of the men as men pay no interest - Men take control in high value market channels such as regional and export markets.

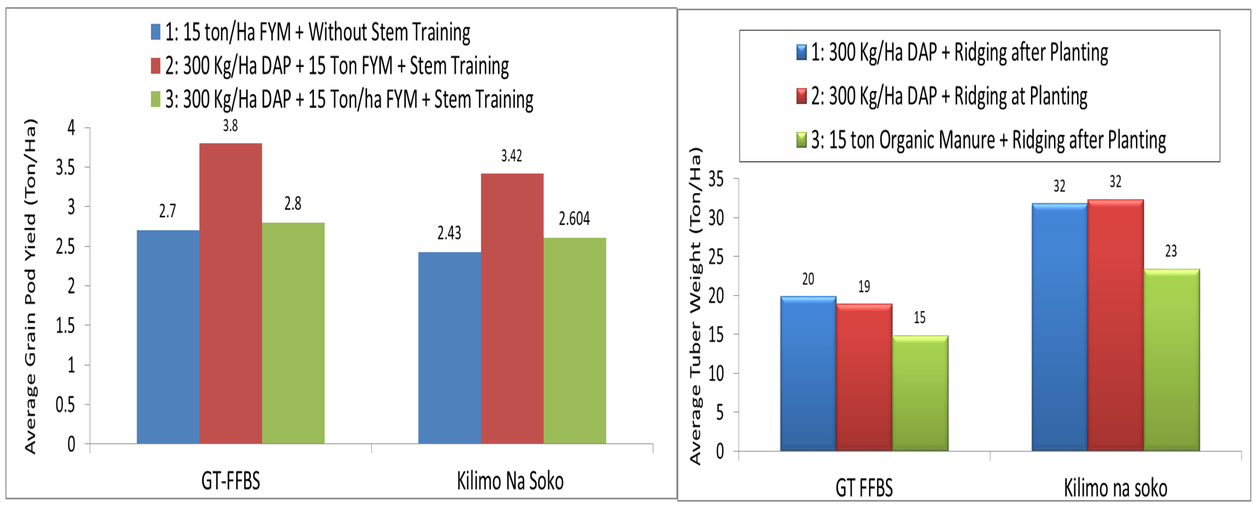

Figure 2: Garden Pea (A) and potato tuber (B) harvest yields with Study sites

CONCLUSIONS & TAKE AWAY MESSAGE

- A gendered value chain analysis reveals the roles of men and women within potato and Garden pea value chain nodes and identified critical focal points to improve both value chains.
- Higher Yields were observed in treatments combining mineral/organic fertilizers combined with crop management practices compared to lower yields in farmer practice ($P < 0.05$)
- Market assessments are crucial guides to identify and understand production risks and enable better decision-making within farming households

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