



Time savings from farm mechanization in Nigeria – how it is spent and who benefits?

Introduction

Mechanization has the potential to alleviate drudgery and reduce time-consuming manual labor for both women and men, freeing their time to focus on other productive and nutrition-sensitive activities. In Nigeria, smallholder cassava farmers rely largely on manual labor, with both men and women involved in different phases of production, processing, and selling. Gender roles are complex in this value chain, with men commonly handling land preparation, planting, and uprooting, and women commonly responsible for processing, marketing, selling, collecting, and loading the produce. Women support men in planting through stem arranging and fetching water for spraying.

Agridrive Limited, a privately held subsidiary of AATF, provides mechanization services to smallholder farmers in South West Nigeria. Between December 2021 and February 2022, Laterite conducted a study on behalf of AATF to understand the time savings for women and men who engage in mechanized farming and how this time is re-allocated to other activities. The research explores

Research methods

- This qualitative study focused on smallholder cassava farmers in Southwest Nigeria, some of which are farming manually (i.e., without mechanization), and some of which are receiving mechanization services from Agridrive Limited (a private subsidiary of AATF).
- Data was collected through 9 Focus Group Discussions (FGDs) with 64 participants (32 men and 32 women); and In-Depth and Key Informant Interviews with 8 participants (6 men and 2 women).

how women and men in cassava farming households spend their time on both farming and non-farming activities, including nutrition-sensitive practices such as time spent on care practices and food preparation.

Key Findings

1. Men and women understand benefits of mechanization

- Both women and men spoke highly of the benefits of mechanization, highlighting three: time savings; higher yields and incomes; reduction in workload and stress. Other benefits mentioned are expansion of land under cultivation, less dependence on hired labor, feeling, and looking healthier. Women mentioned more time for food preparation and childcare and having improved relations with their husbands.

2. Men and women are both involved in cassava farming.

- Through mechanization, men benefit from 'direct' time savings from farming activities like ploughing, while women save time indirectly through supporting roles and knock-on effects from men's time savings. However, women may spend more time on selling activities, due to increased yields from mechanization and both men and women spend more time on monitoring and supervision activities when farming with mechanization.

3. Mechanization leads to large time savings for activities where mechanization is offered.

- For example, ploughing a 1 hectare two times requires 216 human hours to complete if done completely by hand, but just 3 hours when done with a tractor. Large time savings can also be seen with

planting, fertilizer application, weed spraying, and harvesting.

4. Mechanization targets men's roles, meaning women are likely saving less time than men:

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5. Saved time is being spent on different activities.

- These mainly include spending more time with family, social life, side businesses, planting new crops, and monitoring.

6. Men may use their saved time to support women.

- It is possible that men are spending their saved time supporting women on female-dominated tasks like childcare or household activities. Numerous men mentioned using their saved time to spend time with their family

7. Some farmers reported a change in diets as a result of mechanization and the increased income it provided

- These changes included consuming more food (cassava or other), consuming the same food but
- being able to afford it more easily, or consuming different foods like vegetables or proteins.

"[Mechanization is] positive for both [men and women]. Women have more time to spend with their husbands and they have a peaceful family. If you have more time you dedicate for your wife and children, the children will be happy."

– Male farmer, on spending more time with the family.

Conclusions and recommendations

Current mechanization in cassava farming targets mainly men's roles such as land preparation, planting, and uprooting and not women's roles.

Recommendations:

1. **AATF should consider offering mechanization for women's roles as well, such as cassava processing** (e.g., peeling, grating, chipping) to save women time, and reduce drudgery, while potentially reducing post-harvest losses, and contributing to positive nutrition and income outcomes.
2. **There is a need to make mechanization services more affordable and support smallholders in financial literacy** to understand the need to afford and understand long-term benefits of mechanization.
3. **AATF can support farmers in diversifying their diets** by promoting the intercropping of cassava fields with other fruit or vegetable crops.
4. **Socio-cultural norms and gender barriers may prevent women from taking part in all farming activities and decisions around mechanization.** Some men consider women as weaker, not responsible, or capable of making decisions or completing certain farming roles. AATF and Agridrive should take action to address these socio-cultural norms and gender barriers.

Organizations Involved

- **Laterite** is a data, research and analytics firm dedicated to providing high-quality research services for social impact in East Africa. Laterite provides technical advice on the design and implementation of research projects, development interventions, and socio-economic policies. Laterite is a learning partner on the IGNITE project.
- **Tanager**, an ACDI/VOCA affiliate, is an international non-profit that brings people together at the table, on the ground, and across supply chains to co-create economic and social opportunities that change lives. Tanager is the lead partner on the IGNITE project.
- **African Agricultural Technology Foundation (AATF)** believes that use of appropriate technology can improve agricultural productivity in Africa. AATF supports farmers in Africa and especially smallholder farmers in their quest for access to the best agricultural technology.