



Junior Scientists Tandems

Final Report

Name of student: Rachel Humwapwa Mujong

German Research Institution: University of Passau

Supervisor at German Research Institution: Prof. Dr. Martina Padmanabhan

National University (Country) (if applicable)

Supervisor at National University:

International Agricultural Research Center (incl. Country): International Water Management Institute (IWMI), Ghana.

Supervisor at International Agricultural Research Center: Dr Charity Osei-Amponsah

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Title: Agricultural Mechanization and Women Smallholder Farmers in Northern Ghana: Understanding On-Farm Practices Through Feminist Political Ecology

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Introduction and Background

This report presents a summary of my work and experience as a participant of the ATSAF-CGIAR Junior Scientist Program, which lasted for 6 months from April 1st 2025, to September 30th 2025. My host institution was the International Water Management Institute (IWMI), Accra, Ghana, assigned to the department of Water Governance and Political Economy (WGPE) under the supervision of Dr. Charity Osei-Amponsah and co-supervised by Dr Bekele, International Institute of Tropical Agriculture (IITA). This was a part of my master's thesis data collection towards the completion of my M. A in Governance and Public Policy at the University of Passau, Germany. My research interests cut across gender, sustainability, and policy. My master's thesis, titled “*Agricultural Mechanization and Women Smallholder Farmers in Northern Ghana: Understanding On-Farm Practices Through Feminist Political Ecology*,” was conducted under the CGIAR's research initiative “Sustainable Farming Science Program.” The main objective of the research was to explore how gendered power relations shape access to and use of mechanized maize shellers among smallholder farmers in Northern Ghana.

Field Research Experience

My research employed a qualitative case study approach within two communities in Northern Ghana, representing the Savululgu and Tolon districts. Primary data was collected through semi-structured interviews with smallholder farmers, focus group discussions, and participatory drawing exercises with young children. These methods revealed different dimensions of gender relations and access to the mechanized maize sheller, with each approach offering its own entry point into household and community dynamics. The research design did not emerge in isolation. It was strengthened through continuous guidance from my supervisors, who helped me refine my questions, organize my data, and use each method deliberately. Their support ensured that the quantitative context I examined early on served only as a framing tool. At the same time, the qualitative methods remained central to exploring the social and gendered realities that shaped access to mechanisation.



The semi-structured interviews provided personal accounts of how decisions around farm labor and mechanization were made, giving respondents space to discuss their roles and constraints in detail. At times, these individual narratives presented household decision-making as more harmonious than what later emerged in the group context. This difference suggested that interviews often reflected how people preferred their households to be perceived, rather than the more complex negotiations that shape everyday practice. The focus group discussions, held separately with men and women in groups of 8 to 10, offered contrasting perspectives. In these peer settings, conversations unfolded more openly, and participants built on each other's experiences in ways that made underlying power dynamics more visible. As stories were shared and compared, questions of who controls access to the maize sheller, who initiates requests for its use, and how labor is distributed became clearer. The collective nature of the discussions helped surface the shared norms and subtle tensions that structure women's access to mechanisation within the community.

Participatory drawing exercises with children added another layer. These drawings illustrate how farming roles are imagined early in life and how gendered expectations are reproduced across generations. The children's representations of who operates machinery and who performs manual tasks echoed patterns described by adults, offering a quiet but powerful view into the cultural foundations of labor division. Taken together, these methods acted less as separate tools and more as complementary windows. Interviews captured personal experiences, focus groups revealed the social patterns behind those experiences, and drawings traced how these patterns are learned. This combination allowed the research to move beyond describing who uses the maize sheller to understand why [naa1] access is structured the way it is and how gendered power relations shape that structure.

My position as a Nigerian working in Northern Ghana meant that the cultural and social context strongly shaped how I engaged with the field. I had to learn local social cues, gendered expectations, and the community's preference for listening before speaking, which pushed me to slow down and adapt my communication style. This shift made my interviews and group discussions more open and allowed participants to guide the flow of conversation in ways that revealed deeper insights. Experiencing different understandings of time, labor, and authority

made me confront my own assumptions and recognize that access to mechanisation is embedded in broader networks of kinship and obligation. This awareness helped me approach my research questions with greater humility and sensitivity, acknowledging that my interpretations were being continually reshaped by the cultural world I was learning to navigate.

Fig. 1&2; Focused Group Discussion with smallholder farmers at Cheyohi and Duko

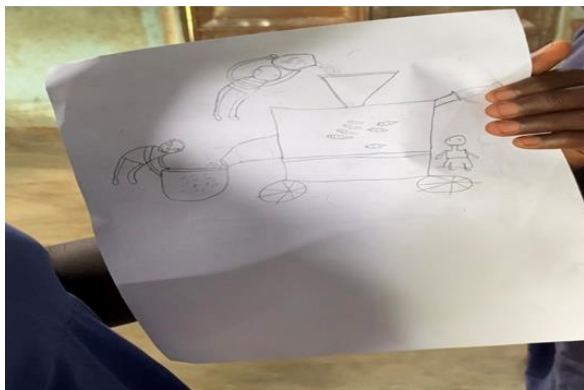


Fig 3: Children's drawing exercise



Fig 4: Mechanised sheller introduced by African Rising

Personal Experience

The six months offered a professional and personal experience that shaped both the direction of my research and my growth as a researcher. My official placement with the International Water Management Institute (IWMI) gave me a sense of belonging within a professional research environment. The staff was consistently supportive, and I benefited from an open, approachable atmosphere where questions were welcomed and guidance was readily available. Day-to-day interactions ranging from formal discussions about my research to casual conversations during lunch helped me understand the institutional culture and build confidence in navigating a research organization. These relationships strengthened my communication skills and made collaboration feel less like a task and more like a shared intellectual process.

Interpersonal encounters both in the field and at IWMI taught me to be adaptable, empathetic, and attentive to context. These experiences did not just support my research; they shaped the way I understand the practice of research altogether. The combination of institutional mentorship and community engagement helped me develop a more grounded sense of professionalism, one rooted in respect, cultural awareness, and a deeper appreciation for the social realities that give meaning to people's everyday decisions.



Fig 4: Picture taken with the Staff of IWMI

Activities and Achievements



The significance of the study was reflected in its acceptance for oral presentation at the Tropentag Conference 2025 in Bonn, Germany, underscoring both the academic relevance of the research and the fellowship's contribution to broader discussions on gender and agricultural mechanisation. Presenting on such an international platform positioned the work within a global community of scholars and practitioners, offering visibility beyond the immediate project context. Before this, preliminary findings were shared at the CGIAR monthly seminar in August 2025, where engagement with international and local experts provided valuable feedback that sharpened the analytical focus and strengthened the interpretation of the data. These presentations not only improved the quality of the research but also expanded my professional network and deepened my confidence in communicating complex fieldwork insights to diverse academic audiences

Conclusion and Acknowledgements

I would like to thank ATSAF e.V. for the possibility to participate at the CGIAR++ Junior Scientists Program, which was an important experience for me and my future research career. I have learned a lot about the work on a field research project.

I am deeply grateful to my supervisors, Dr. Charity Osei- Amponsah, to Dr. Bekele Hundie Kotu, Prof. Martina Padnamabhan, Dr. Mirja Michalscheck, and Dr Birhanu Zemadim Birhanu, whose unwavering support, guidance, and encouragement sustained me throughout this research journey. I am also grateful to the colleagues and staff of IWMI and IITA for their support and friendship during the fellowship period.
