



WOMEN'S EMPOWERMENT IN GHANA'S RURAL COMMUNITIES: A FARMER-CENTERED APPROACH

¹Kwame Boadi Asante and ²Aisha Nana Mensah

¹School of Human Nutrition, McGill University, Montreal, Canada

²Department of Nutrition and Food Science, University of Ghana, Legon

Abstract: Assessing the relationship between empowerment and nutrition along the agriculture nutrition pathway is limited by dissimilar emic and etic views of the construct, limited understanding of its contextual variation, and measurement difficulties. This study explored local meanings and perceptions of empowerment among women and men farmers in rural Ghana. The qualitative study took place within the LinkING Up project, a quasi-experimental, nutrition-sensitive agriculture intervention (ClinicalTrials.gov NCT03869853) in three sub-districts of the Eastern Region. The intervention was implemented through farmer-based organizations (FBO) that were selected using a set of criteria such as female representation and level of member participation. Within the FBO, all women were recruited to participate along with one male adult family member (spouse/partner, older son, father). Non-FBO members (women and their male family member) from the same communities were also enrolled as a comparison group. This manuscript addresses an independent research question on empowerment, not the LinkING Up intervention outcomes. For the question, participants (53 females and 45 males) were selected purposefully based on FBO membership of the woman (member, non-member). During the first three months of the project, eight focus group discussions (FGD) with women and seven FGD with men were conducted to probe into local understandings of empowerment and women's empowerment (WE). The FGD were translated to English from the local language and transcripts were coded using a Constructivist Grounded Theory approach (open, axial, selective coding) with MAXQDA 2022. Women and men described empowerment in terms of an individual's capability to improve circumstances by setting and meeting intentional and measurable goals. The construct of empowerment was made up of internal and external components. Internal components were those that were essential to allow one to be empowered, such as self-confidence, while the external components of empowerment were related to personal and community factors that empowered people, for example, asset ownership and social support. Emic understandings of WE were often related to women's relationships with others and their roles (reproductive, productive, and community) within the studied context. The local descriptions of an empowered woman were categorized as someone who: i) exhibits qualities that are perceived to help one achieve goals, ii) takes actions to achieve goals, and iii) works with others to achieve own goals or common goals. When assessing WE in the study area, it is important to incorporate measures for women's goal-setting capacity in relation to farming and business activities, and their ability to implement their goals, while taking into account relational aspects.

Keywords: Nutrition-sensitive agriculture, Farmers, Empowerment, Emic, Women, Gender, Low-income population, Ghana

INTRODUCTION

Women's Empowerment (WE) is a component of three of the six pathways linking agriculture to nutrition, including i) social status and access to and control over resources, (ii) time use in agriculture, and (iii) health and nutrition status [1]. However, supporting evidence on WE role remains limited due to weak study designs and the

construct being inconsistently defined and operationalized [2, 3]. Measurement efforts have included both indirect (example, land ownership) and direct (example, decision making) measures, used either alone or in a composite index [4-7]. While such measures can provide information on the progress in achieving global gender equality targets, some researchers have argued that they represent outsider perspectives of what it means to be empowered [8]. Evidence suggests that emic and etic meanings and perceptions of empowerment do not always align [8-10]. Thus, existing tools may not entirely capture the specific ways women may or may not feel empowered. In addition, there is limited understanding of how men view WE.

The challenge in defining and measuring empowerment arises first from its multidimensionality. Since women play multiple roles within society, empowerment can occur across different dimensions of their lives. Malhotra *et al.* [11] have proposed a broad set of dimensions in which WE may occur (familial/interpersonal, socio-cultural, psychological, economic, and political domains) that requires different assessment indicators. Achieving empowerment in one dimension may have a positive spillover effect in other domains, but this may not always be the case. Empowerment can occur in some dimensions and not in others [11, 12].

Because gender is embedded within societal norms and values, the domains of empowerment that are important to a particular context may vary [6, 12]. The values and attributes associated with empowerment in one context may not have relevance in another [8, 10, 13]. For instance, a qualitative study in Bangladesh found communities did not perceive having the power to make decisions as a quality of an empowered woman, rather WE were associated with honor and respect [14]. In Nepal, high levels of decision-making, mobility, and control over income related to agricultural production were not perceived as reflecting WE. In qualitative interviews, women shared their interpretation of these domains in their environment. High mobility reflected the substantial time spent walking to the markets to sell produce and represented their high work burden. Control over the income earned represented decisions only on small household purchases; these were not enough to change the existing household gender dynamics and influence empowerment [8]. These qualitative results further highlight the importance of examining the context in which WE indicators are measured.

There is a global call for a balance between context-specific and universally applicable indicators to design and assess efforts made towards WE [10]. Yet, much of the research on the local definitions of empowerment has been conducted in South Asia [6, 15]. Few qualitative studies have investigated this subject across the African context, a region that is multiethnic and multicultural with different traditional values and systems [15, 16]. Evidence is needed to guide the development of culturally appropriate tools and to inform sustainable interventions that meet the needs of women. Given the highlighted gaps, this study explored local meanings and perceptions of empowerment among women and men farmers in rural Ghana.

MATERIALS AND METHODS

Setting and participants

This qualitative study took place within a larger quasi-experimental, nutrition sensitive agriculture intervention (LinkINg Up) designed to improve the quality of life of rural Ghanaian women agricultural entrepreneurs and their families in three sub-districts of the Eastern Region of Ghana. The project districts are primarily rural settlements with similar social and cultural structures [17-19]. They are dominated by the patrilineal Krobo ethnic group [20]. The 2010 population census reported a population of more than 70,000 in each sub-district [17-19]. The main economic activities are crop farming and trading of raw and processed agricultural products, primarily by women in district markets.

LinkINg Up project

The project partnered with local institutions to provide loans, and agriculture and nutrition education to female members of existing farmer-based organizations (FBO). A detailed description of the LinkINg Up project has

been previously published [21]. Half of the female FBO members were enrolled in Phase 1 [2019-2020]; their repaid loans then supported the remaining women who were enrolled in Phase 2 [2021-2022]. The project staff also enrolled a sample of female nonFBO members from a census of farmers from the same communities. A male adult who self-identified as the primary male decision maker within the same household as the enrolled women was also recruited. This article discusses data from only six communities participating in Phase 1; women and their corresponding male family members were interviewed during the first three months of the project to ensure participants' views and ideas were not influenced by the project activities.

Study approach

The qualitative research is based on the philosophical approach of Constructivist Grounded Theory which proposes that the researcher and participants construct experience and meanings during data collection and analysis [22]. The interview guides probed into understanding how participants described empowered farmers in their context, the attributes of an empowered woman and man farmer, and how they were perceived by others within the community. This paper focuses on general descriptions of empowerment and WE.

Translation of the concept empowerment/empowered

The translation of the term empowerment into the local dialect (Krobo) was carried out through multiple steps. First, a set of questions was given to three local research assistants to guide them in identifying different phrases in Krobo that reflected the concept of empowerment. Next, the research team identified four local key informants who were interviewed about local phrases for empowerment. The most common phrase was selected and pretested in neighbouring communities. Based on the responses, the final phrase Hewami womi (backtranslated as empowerment or encouragement) was selected and incorporated into the interview guide.

Participants and data collection

Data were collected using focus group discussions (FGD) following a semistructured protocol. The FGD guides were translated to Krobo by three local research assistants through deliberations to reach consensus. Communities and participants included in the FGD were selected purposefully based on FBO membership of the woman (member, non-member). Eight FGD with women and seven FGD with men from six communities were conducted between December 2019 and February 2020. To ensure that the views of all project communities were represented, we aimed to include at least two FGD, one female and one male per community, with approximately 6-8 participants per group. The FGD were conducted by the local research assistants in Krobo and in a few instances Ewe (another local dialect) based on the participants' preference. Data collection was iterative. All 1.5 to 2 h FGD were audio-recorded, translated to English, transcribed, and then reviewed after each session to determine if saturation was reached.

Data analysis

All transcripts were imported into MAXQDA 2022. Data were analysed using the inductive approach, Constructivist Grounded Theory coding [22]. The first stage of analysis involved open coding - codes were assigned to phrases, sentences, and paragraphs related to the discussion on empowerment and empowered women. The constant comparison technique was applied to identify similarities and differences in the data [23]. The codes that were developed inductively were then used to code similar text from other FGDs while generating new codes. For the second stage, focused coding identified the emerging categories from codes and concepts generated in the open coding phase. The constant comparison method was applied again with the focused codes to identify, refine properties, and integrate core categories by looking at the relationships between them. The aim of this phase of analysis was theoretical saturation. At the final stage, theoretical coding was used to identify the connections and integrate core categories that represent the overarching themes discussed by the participants to formulate the final theory on the meanings of empowerment as well as the meanings and perceptions of WE [24]. The first author

coded and analyzed all FGD with women and men. The results were drafted by AA; the final themes and their interpretations were agreed by AA and GSM. Interpretations were also shared with a local research assistant for member checking.

Ethics

Ethical approval for this study was obtained from the institutional review boards of McGill University (# 377-0219) and the University of Ghana College of Basic and Applied Sciences (# 035/18-19). The consent forms were signed or witnessed thumbprints were obtained before the FGD. Information that would identify communities or participants were omitted when presenting the results. LinkING Up is registered at ClinicalTrials.gov (NCT03869853).

RESULTS AND DISCUSSION

Participants' characteristics

The FGD included 54 women (56% [n=30] were FBO members) and 44 men (64% [n=28] were from households of women FBO members). Eight percent (n=8) of the respondents were from a female-headed household. Female respondents were 45.5 ± 13.0 years old, while men were 50.7 ± 13.1 years old. The majority (89%, n = 48) of the women were in a union (married or cohabiting), while the rest were single (n=2), widowed (n=3) or divorced (n=1). About 33% (n=18) of the women had never attended school, while 98% (n=43) of the men had received some form of education. Most (88%, n=86) of the respondents were of Krobo ethnicity and 94% (n=49) of women reported farming as their primary occupation.

Local definitions of empowerment

Women and men farmers defined empowerment in several ways. The most salient definition was an individual's capability to improve their circumstances in the present and for the future by setting and meeting intentional and measurable goals. Improvements in participants' circumstances were often expressed as freedom from poverty, moving ahead in life, and having a better life for themselves and their families.

"Empowerment is as we are getting into another year, you will set a goal and farm on a larger scale than the previous year [.....]. You have that goal so you plan of making a bigger farm than the previous years so you will force and work hard and succeed." - Female participant

"Empowerment is like; as we are getting to farming season this year, you will plan that you should have about six bags of corn, so you have to start early and buy chemicals. As I have goats and chickens, I have to sell some and use the money to buy chemicals so that I will get that number of bags that I planned. So that is empowerment." - Male participant

Participants described empowerment as having internal and external components. Internal components were those that were essential to allow one to be empowered and included the belief that one had the capabilities needed to succeed in what one was doing and benefit from it. In addition, self-motivation and having the attitude and mindset for success were essential. Pursuing one's goals by making decisions, expanding one's knowledge, seeking support (example, taking loans from peers or institutions), and tapping into one's social network to seek help, advice, and encouragement were other ways respondents described empowerment. Having good relationships with others by supporting, advising, and sharing information to help them achieve their goals was another way empowerment was described.

"Empowerment means having faith that what you are doing will be good. Then it will go on well." – Female participant

"You have set a goal which is before you with the intention of getting profit out of it. You take a good decision and encourage yourself to do it and you that, you get what you want. You will work hard to get what you want" – Male participant

The internal descriptions of empowerment were consistent with the categorizations of power that have been proposed in previous research [25, 26]. These types of power include (1) power within, described as the innermost desire to change one's life as well as self-efficacy, (2) power to, described as the act of working towards one's goals and (3) power with, described as collective power or the process of working with others.

The external components of empowerment were related to personal and community factors that facilitate empowerment. Participants discussed succeeding in farming (example, harvesting good yields, selling, and making profit), ownership of agricultural assets, access to capacity-building opportunities related to farming, access to bank loans to hire farm labor and purchase inputs, and social support (example, advice from others) to help them achieve their goals. Human relationships strengthened farmers sense of self-efficacy and ability to achieve one's goals.

"Maybe I am doing something which I am stuck in the way, so I will come and seek for advice from my brother to help me do it well and he will also advise me on it or show me how to do it well or he will say what you are doing will help you so I will stand by you so that you do it well, that is empowerment. – Male participant
"Empowerment is maybe I want to clear the land and farm on it but I don't have money so I will come to you and borrow it from you to do it. If the person gives you the money, he/she has empowered you." – Female participant

Meanings and Perceptions of women's empowerment

An empowered woman farmer was described in a variety of ways and aligned mostly with expressions of agency that are found in the literature [10, 25-27]. The most common description was someone who set goals, planned, and worked hard to achieve goals. Most of the goals were related to farming and business activities, finances, building assets, and investing in children's education for the present and future to ultimately ensure a sustainable livelihood for her and the family. The descriptions of an empowered woman included someone who: i) exhibits qualities conducive to achieving set goals, ii) takes actions to achieve goals, and iii) works with others to achieve their own or common goals. All of these categories interact with each other and are promoted or inhibited by factors that are present at different levels (individual, relational, market, and institutional). The findings suggest diverse expressions of agency in our study context.

Exhibiting qualities that help one to achieve goals

Women and men discussed an empowered woman farmer as a self-determined individual who set goals and implemented them. The act of defining goals that are in line with a woman's values is an essential component of individual agency in empowerment as it demonstrates self-reflection and desire for change [27, 28]. The majority of the goals discussed were set by the woman herself to improve her life and take care of her children and the household. However, a few respondents described the empowered woman as someone who set common goals with her family and planned together with her husband for their present and future. Households that set common goals have been linked to better gender equality in farm and household tasks [29].

Both women and men expressed that an empowered woman was obedient (to her husband and others) and submissive, qualities that reflect societal norms and expectations of how a woman should behave and yield social acceptance. Meinzen-Dick *et al.* [10] found similar findings and argued that women conforming to social norms could be a form of agency as it allows women to maintain social ties as well as achieve their goals. An empowered woman was also described as committed to her work, hardworking, and efficient with her time, allowing her to fulfil both her domestic responsibilities and to be committed to the planned activities that help her to reach her goals.

"A woman farmer who is empowered is someone who wakes up early, and if she will be going to the farm, she will do everything fast and will leave to the farm before the sun sets in. When she goes to the farm, she will be working hard for some time and rest. She will come home and go back to the farm in the evening. With this, you can see that, that person has empowered herself in the farm." –

Female participant

“She submits herself to her husband and also takes care of her children. She will put everything in order before leaving the house and then finished all the household chores, dress for the children and send them to school.” –

Male participant

Participants expressed that an empowered woman farmer was sincere and trustworthy which helped her to acquire loans from colleagues, customers, and financial institutions. She also had the mindset for success and believed she will succeed in what she did. Finally, an empowered woman farmer was a person of faith who believed and had the fear of God, which allowed her to act on her goals. All together, these qualities enable a woman to exert her choices, decisions, and preferences to reach her goals [26, 27].

Acting to achieve one's goals

Acting on one's goals was another important aspect of empowerment. An empowered woman farmer was described as someone who aimed to farm on a large area of land and hired labour support to clear her farm, sow seeds, and harvest her produce. Both female and male discussants noted that clearing land was particularly difficult for women to carry out singly and employing support helped women reach their farming-related goals such as high yields and diversity of crops. With hired labour, women were able to sell more products at the local markets and use the profits for further farm enterprise investments to grow the farming business.

Participants also described an empowered woman as having control over her farming activities; she decided when to farm as well as when and how much to sell. An empowered woman was also described as someone who was entrepreneurial or a businesswoman who took on different opportunities to reach her goals. She applied good marketing and business skills when selling her produce. She took her time to sell her produce, sold in bulk, and developed her knowledge of local market prices and the products that were in demand. Participants expressed that this empowered woman was someone who used the knowledge and skills she had to plan and achieve her goals. She also aimed to produce good quality products to attract customers and gain profits.

“I will use what my grandmother told me as an example, she advised us by telling us that, she became a businesswoman which nobody gave her money. Her parents did not give her anything, but her friends are boys and when they are going to farm, she will follow them. When they weed, she will also weed. She got a land, and she had a maize and cassava farm. When the maize matured, she harvested it and sent it to the market to sell. When she come back home, she used the money she had to buy maize from other people in the community and she started to sell. That thing made her a businesswoman and a farmer. So, I think if you plan from the beginning and you work on it, it will help you” – Female participant

In addition to investing in her farming, an empowered woman also invested her profits into other businesses. She did not rely on one source of income but engaged in a range of activities to provide her with capital to sustain her farming and income to use for her household. She also managed her finances as she was described as someone who saved money and budgeted towards achieving goals. An empowered woman also had autonomy over how she spent money. Similarly, in Cambodia women exercised more freedom when they earned their own income [9]. An empowered woman also had a bank account with the local bank which enabled her to grow her savings and take loans for her farming or business activities. She aimed to pay her loans on time to assure future financial interactions to improve her farm and business. An empowered woman also engaged with the agriculture extension agents which allowed her to access training, advice, and input support (example, seeds and chemicals) and loans, which helped her to improve her farming. In addition, she sought advice and support from family and community members, particularly in relation to her farming activities such as sowing, planting and harvest crops.

Working with others to achieve goals

From participants' perspectives, WE were relational and achieved through an interconnectivity with others. Participants perceived WE as being dependent on the woman's diverse relationships with others. Consistent with these findings, other studies conducted in low-income communities have found that WE were understood more as relational [9, 10]. An empowered woman was described as respectful to others in her life, including her husband, family and community members which allowed her to gain support in achieving her plans and goals as well as earned her respect at the community level. Mutual respect among spouses promotes household harmony and may allow women to negotiate their preferences [10, 26]. Indeed, the participants in the present study described an empowered woman as someone who maintained a good relationship with her husband/partner which enabled her to have a say in household decisions and gain the man's support for activities related to her goals. She also has a good relationship with other people.

An empowered woman was someone in a position to help and support others, including women and youth within the community with advice, money, and food which in turn built her network of people from whom she sought support for her farming and livelihood activities. Indeed, the empowered woman influenced others in the community since her decisions and voice were valued in the community and people sought her advice in relation to their farming and other matters. For instance, a respondent gave an example of an empowered woman who used her own farm as an example to demonstrate and advise others on how she was able to achieve good yields so they could improve on their own farms. In a study in Cambodia, transferring knowledge to others was important for strengthening bonds [9]. The empowered woman also communicated well with others which helped her to be successful. An empowered woman was also part of a group in the community from which she derived membership benefits such as borrowing money to hire labour support for the farm.

"A woman is not as strong as the man so she will hire labourers to clear the land. Maybe she is also not having money so if she is in a group, she will go and borrow money to buy chemicals and hire people to spray and weed the farm. In order to do well in farming, a woman will have to join a group to borrow money [.....]." – Female participant

The empowered woman also supported her husband/partner on the farm and contributed financially to the household. As one female respondent said, supporting each other helped them to plan together for their family and the future. An empowered woman was described as being united with her husband and farming together, as women were not being able to carry out activities such as clearing land in which the man provided support. However, not all respondents agreed with the idea of farming together with a husband/partner as a pathway to achieving women's goals. Some women voiced that they were not able to have enough produce to sell to make profits when they farmed together with male partners as men took control of most of the produce.

"Some men will ask you not to have your own farm, but the woman should support him to farm and at the end, he will compensate the woman [.....]. The man can compensate the woman with one sack of maize but if the woman works on her own farm, she will get more than that. If the man did not permit her, she cannot have her own farm". – Female participant

Contextual facilitators and barriers to women's empowerment

Individual factors. A woman farmer having her own farm on rented or owned land, formal education, and literacy were important contributors to WE. On the other hand, poor farm-related planning, poor agricultural practices, and lack of financial resources were individual-level factors that prevented empowerment. Relational factors. Relational facilitators were the most discussed factors contributing to WE. In particular, this included support from the husband, children, and other family members with farming activities, household chores, and childcare. Community and group support with farming activities and advice were also considered empowering.

Relational factors could also act as barriers to empowerment. Male partners or other family members may refuse to support women with land or allow women to have their own farms. Lack of support (financial, labour) from the family, men's refusal to accept women's decisions, and the household financial burden on the woman as a result of men reducing their financial contribution were also identified as barriers to empowerment.

Institutional factors. Support in the form of farm inputs, equipment, and timely technical training from the local agriculture institutions was an important facilitator of WE. Difficulty with access to bank loans due to refusal, delay, or high-interest rates was discussed as a barrier to empowerment.

Marketing factors. Having customers that purchased farm produce in bulk and good market prices that contributed to profit facilitated WE. Poor roads/infrastructure and difficulty transporting produce to the market were mentioned as barriers to WE.

CONCLUSION

This study explored how women and men farmers perceived empowerment and WE within their context. We found that local farmers understood empowerment in multiple ways, but most of the focus was on different forms of agency. Emic understandings of WE were often related to women's relationship with others and their triple roles (that is reproductive, productive, and community) within the studied context. In particular, women's roles as farmers and entrepreneurs are well recognized in the study area. Hence, there was a lot of focus on women's economic empowerment. When assessing WE in the study area, these results suggest incorporating measures in three areas: (i) assessing women's goal-setting capacity in relation to farming and business activities, finances, building assets, and investing in children's education, (ii) their ability to implement their goals, and (iii) the relational aspects. The finding that women's empowerment may be facilitated or inhibited by contextual factors suggests that sustainable nutrition sensitive agriculture interventions need to intervene at different levels to achieve the best outcomes.

Funding information: The Canadian Queen Elizabeth II Diamond Jubilee Scholarships (QES) is managed through a unique partnership of universities Canada, Rideau Hall Foundation (RHF), Community Foundations of Canada (CFC), and Canadian universities. The QES-Advanced Scholars is made possible with financial support from IDRC and SSHRC.

REFERENCES

- Ruel MT, Alderman H, the Maternal and Child Nutrition Study Group Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *Lancet*. 2013; 382(9891): 536-51.
- Ruel MT, Quisumbing AR and M Balagamwala Nutrition-sensitive agriculture: what have we learned and where do we go from here? Washington, DC: International Food Policy Research Institute. 2017.
- Pratley P Associations between quantitative measures of women's empowerment and access to care and health status for mothers and their children: a systematic review of evidence from the developing world. *Soci. Sci. Med.* 2016; 169:119-131.
- Ibrahim S and S Alkire Agency and empowerment: a proposal for internationally comparable indicators. *Oxf. Dev. Stud.* 2007; 35(4): 379-403.
- Alkire S, Meinzen-Dick R, Peterman A, Quisumbing A, Seymour G and A Vaz the women's empowerment in agriculture index. *World Dev.* 2013; 1; 52:71-91.

- Heckert J and MS Fabic Improving data concerning women's empowerment in Sub-Saharan Africa. *Stud Fam Plan.* 2013; 44(3):319-44.
- van den Bold M, Quisumbing AR and S Gillespie Women's empowerment and nutrition: an evidence review. Washington, DC: International Food Policy Research Institute. 2013.
- O'Hara C and F Clement Power as agency: a critical reflection on the measurement of women's empowerment in the development sector. *World Dev.* 2018; 106:111-23.
- Doneys P, Doane DL and S Norm Seeing empowerment as relational: lessons from women participating in development projects in Cambodia. *Dev Pract.* 2020; 30(2):268-80.
- Meinzen-Dick RS, Rubin D, Elias M, Mulema AA and E Myers Women's empowerment in agriculture: lessons from qualitative research. Washington, DC: International Food Policy Research Institute. 2019.
- Malhotra A, Schuler SR and C Boender Measuring women's empowerment as a variable in international development. Washington, DC: World Bank Workshop on Poverty and Gender. 2002.
- Quisumbing AR, Sproule K, Martinez EM and H Malapit Do tradeoffs among dimensions of women's empowerment and nutrition outcomes exist? evidence from six countries in Africa and Asia. *Food Policy.* 2021; 100:102001.
- Richardson RA Measuring women's empowerment: a critical review of current practices and recommendations for researchers. *Soc. Indic. Res.* 2018; 137(2): 539-57.
- Rubin D Qualitative research on women's empowerment and participation in agricultural value chains in Bangladesh. Washington, DC: International Food Policy Research Institute; August 2018.
- Carlson GJ, Kordas K and E Murray-Kolb Associations between women's autonomy and child nutritional status: a review of the literature. *Matern Child Nutr.* 2015; 11(4): 452-82.
- Appiah EK, Arko-Achemfuor A and OP Adeyeye Appreciation of diversity and inclusion in Sub-Sahara Africa: the socioeconomic implications. *Cogent Soc. Sci.* 2018; 4(1):1521058.
- Ghana Statistical Service. Population and housing census. District Analytical Report, Yilo Krobo District. 2014.
- Ghana Statistical Service. Population and housing census. District Analytical Report, Upper Manya Krobo District. 2014.
- Ghana Statistical Service. Population and housing census. District Analytical Report, Lower Manya Krobo Municipality. 2014.
- Steegstra M Krobo queen mothers: gender, power, and contemporary female traditional authority in Ghana. *Afr. Today.* 2009; 55(3):105-23.

- Abdu A, Marquis GS, Colecraft EK, Dadoo ND and F Grimard The association of women's participation in farmer-based organizations with female and male empowerment and its implication for nutrition-sensitive agriculture interventions in rural Ghana. *Curr. Dev. Nutr.* 2022. (Accepted for publication).
- Charmaz K Constructing grounded theory: a practical guide through qualitative analysis. SAGE. 2006.
- Glaser BG The constant comparative method of qualitative analysis. *Soc. Probl.* 1965; 12(4): 436-445.
- Saldaña J The coding manual for qualitative researchers. 2nd ed. SAGE. 2013.
- Rowlands J Empowerment examined. *Dev Pract.* 1995; 5(2): 101-107.
- Kabeer N Resources, agency, achievements: reflections on the measurement of women's empowerment. *Dev. Change.* 1999; 30:435-464.
- Donald A, Koolwal G, Annan J, Falb K and M Goldstein Measuring Women's Agency. Policy Research Working Paper. Washington, DC: World Bank. 2017.
- Gram L, Morrison J and J Skordis-Worrall Organising concepts of 'women's empowerment' for measurement: a typology. *Soc. Indic. Res.* 2019; 143(3):1349-76.
- Farnworth CR, Stirling CM, Chinyophiro A, Namakhoma A and R Morahan Exploring the potential of household methodologies to strengthen gender equality and improve smallholder livelihoods: research in Malawi in maize-based systems. *J. Arid Environ.* 2018; 149:53-61.